Earthscan Studies in Water Resource Management

PUBLIC BANKS AND PUBLIC WATER IN THE GLOBAL SOUTH

FINANCING OPTIONS FOR SUSTAINABLE DEVELOPMENT

Edited by
Thomas Marois, David A. McDonald and
Susan Spronk

Public Banks and Public Water in the Global South

This volume presents the first systematic review of public bank lending in the water sector in the Global South.

Many public banks have an explicit mandate to finance public water management, yet despite a resurgence of interest in public banks and the role they can play in sustainable development, their role in funding water management has been largely ignored. Drawing on case studies from Asia, Africa and Latin America, this book measures the scale and nature of interaction between public banks and public water operators for the provision of safe drinking water and sanitation. It identifies challenges and opportunities for deeper engagement between public banks and public water operators in the Global South and highlights promising practices, showcasing how these might be transferred to different regions and different sectors. Each case study is based on in-depth interviews with public banks that have funded public water operators, and public water operators that have borrowed from public banks, including Banco Popular in Costa Rica, the Development Bank of the Philippines, the National Bank for Agricultural and Rural Development in India and the TIB Development Bank in Tanzania. Overall, this book provides a critical analysis of the potential of public banks to address global water security issues.

This book will be of great interest to students and scholars of water resource management, water and health, sanitation and sustainable development. It will also be of interest to professionals and policymakers working with public and development banks in the supply of safe water and sanitation for all.

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Contents

Figures

Tables

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The Municipal Services Project is a global research network that explores progressive forms of public services with a focus on equity, sustainability and democratic engagement. We critically investigate successful public service models with the aim of documenting and assessing the conditions required for their sustainability and reproducibility. This book represents our second collection of case studies on public banks and public water operators, helping to provide insights into a hitherto sidelined but critically important field of study.

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1 Introduction

Public banks and public water services in the Global South

David A. McDonald, Thomas Marois, Nadine Reis and Susan Spronk

Introduction

The fact that hundreds of millions of people around the world still lack access to safe, reliable and affordable water and sanitation is a tragic failure of global governance. Although the situation has "slightly improved" since 2000 (WHO/UNICEF 2019), only 45 per cent of countries are on track to achieve their Sustainable Development Goal (SDG) targets for drinking water, and less than a quarter will meet their sanitation targets (GLAAS 2022, xii). Progress towards SDG 6 "is alarmingly off track," with the achievement of universal access by 2030 requiring a six-fold "increase in action" on drinking water and a five-fold increase for sanitation (United Nations 2023, x-xi). The poorest regions of the world are furthest behind.

And yet, universal access to safe and affordable water and sanitation services (WSS) is one of the most achievable global challenges we face. The technologies are relatively simple and can be managed in ways that are appropriate to the geographies, cultures and institutions of different locations, with massive health, economic and environmental benefits. Unlike deep-seated tensions around social and technological changes to other essential services—such as energy and education—the principle of improved WSS arguably enjoys universal support.

So what stands in the way? A rash of intractable political factors are partly to blame, including weak legislation, rent-seeking and cross-border conflicts over (shrinking) clean water supplies (Tan 2015; Longo et al. 2022; Steyn 2022). But one of the biggest challenges is arguably that of finance. Capital expenditures required to reach SDG targets 6.1 and 6.2 alone are estimated at US$116–$229 billion per year (United Nations 2023; Joseph et al. 2024). Meeting other SDG 6 targets such as reducing water pollution, implementing integrated water resources management and protecting water-related ecosystems will cost considerably more, with total global WSS infrastructure development needs estimated at US$6.7 trillion by 2030 and US$22.6 trillion by 2050 (Ajami et al. 2018, 5).

There are also huge investments required to train skilled personnel. According to UN-Water, less than a third of the countries it monitors have

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the human resources needed to carry out key functions for the delivery of WSSs, and less than a fifth have adequate training and education mechanisms in place for the sector (GLAAS 2022, 50–1). Improvements to other operating activities—such as better public engagement—will add further costs to advancing the SDG 6 agenda.

The most pressing needs are in the Global South, but high-income countries are also in serious deficit situations (Hutton & Varughese 2016). The USA, for example, requires an estimated US$1 trillion in WSS investment over the next 20 years (Tiemann 2017, 9).

The spending deficits are enormous, with over 75 per cent of countries surveyed by UN-Water reporting insufficient funding to implement WSS plans and strategies (GLAAS 2022, xiii). Less than 15 per cent of these countries have sufficient financing to implement their national SDG targets, suggesting a "need for a radical increase in global financing of water and sanitation investments" (Pickbourn et al. 2022, 1–2), in the range of "2–4 times larger than current practice" (Alaerts 2019, 821). Cost estimates vary widely based on the types of technologies employed—with ongoing debates about 'appropriate' forms of equipment (Swyngedouw 2004)—but even the most modest proposals will require enormous amounts of financing.

Where might this money come from? In this introductory chapter, we briefly examine a wide range of possible sources—public and private—highlighting key trends over the past 30 years. We emphasize the hugely disappointing experience with private finance. Despite decades of rhetorical support from multilateral institutions such as the World Bank and the OECD, private finance has been almost non-existent in the water sector in the Global South, with no amount of de-risking seemingly able to move the needle.

But public funding has failed in many ways as well. Although governments at various levels continue to pay for the lion's share of WSS investments, the spending gaps are enormous and growing, with new public investment vehicles such as sovereign wealth funds and public pension funds having made little difference in this regard despite their vast pools of resources.

However, there is one set of public financial institutions that has been largely ignored in the debate about financing WSS: public banks. Broadly defined in this book as financial institutions majority owned by the state or another public entity, public banks have been involved in financing WSS for decades (Marois 2021; McDonald et al. 2021; Fonseca et al. 2021; Marois & McDonald 2023). There has also been a resurgence of interest in public banks, and a growth in their size, as more and more governments see their potential in tackling some of the world's biggest challenges (Clifton et al. 2021; Mertens et al. 2021; Marodon 2022; Güngen 2023; Case-Ruchala 2024). Public banks have begun to assert their own influence in these financing debates, most notably with the creation of the Finance in Common (FiC) network in 2020, which sees itself as "the global movement for all public development banks," managing more than US$23 trillion in assets and US$2.5 trillion in annual investments (FiC 2023).

It is not our intent in this book to argue that public banks will resolve the water and sanitation financing crisis. Not all of SDG 6 funding needs can or should be subject to repayable sources of financing—public or otherwise. This serves to underscore the fact that resolving the global WSS crisis will require massive amounts of additional injections of capital from all levels of government.

Nor are there any guarantees that public banks will lend to public water services, let alone in ways that are affordable, sustainable, equitable and transparent. Public banks, like all public institutions, are diverse and complicated entities, with no predetermined trajectory or purpose. Public banks are neither inherently good nor bad, with significant differences within and across jurisdictions; public banks are only ever as good as societies command them to be (Marois 2021). This suggests that making any simple assertion of an *inherent* purpose to play a meaningful pro-public role in financing WSS is misleading. What public banks do, why and for whom is contested within and across jurisdictions. In short, there are no simple answers when it comes to the possible role of public banks in financing WSS. This suggests greater scope for more case study research and empirical knowledge in the area.

Nevertheless, public banks offer a unique and potentially transformative vehicle for addressing short- and long-term financial challenges in WSS in the Global South. While identifying cautionary elements, our aim in this book is to focus on promising examples, highlighting the strengths (and weaknesses) of different models via detailed case studies, and suggesting ways in which these public banking institutions might be improved.

In doing so, we hope to contribute to a growing body of systematic empirical research on public banks, much of which has been rather patchy to date (Xu et al. 2021, 270). We build on previous case study research examining the links between public banks and public water in Europe (Marois & McDonald 2023) using the insights gained from countries in the Global South to expand on our theoretical and practical understandings of how public banks can finance WSS.

Given the dearth of research on the topic, we did not set out to test a particular set of hypotheses. With so little known about public bank involvement in the water sector in Asia, Africa, the Middle East and Latin America—and with such diverse political, economic and institutional norms within and across these regions—it was neither possible nor desirable to anticipate outcomes. Our goal was simply to collect reliable, comparative data and insights that would allow us to describe what is happening on the ground and assess its implications for future public bank involvement in WSS.

The results of the research are as mixed as the countries and institutions investigated, but the studies point to one common outcome: there is enormous potential (and considerable appetite) for progressive forms of public bank financing of public water services. Although the examples range from the simple and inspiring to the complex and problematic, the studies illustrate that public banks can make a significant contribution to the sustainability

and viability of public water systems in the Global South, with considerable scope for expansion and improvement. There are problematic aspects in each case studied, and not all positive lessons can be reproduced elsewhere. But given that public banks "are here to stay" (Ndikumana et al. 2021, 7) and are likely to play an increasingly important role in WSS financing around the world, a better understanding of public banks' potential is critically important.

We begin this Introduction with a review of the different financing sources that have historically been employed in WSS in the Global South. Moving from the local to the global, we assess a range of public and private options to illustrate where funding for WSS has (and has not) come from in the past. This review is followed by a discussion of what constitutes a public bank and where we situate ourselves theoretically in this debate. The chapter concludes with a description of the research methods employed and a summary of key findings.

Sources of finance for water and sanitation in the Global South

Water and sanitation is a diverse sector with multiple agencies working across different jurisdictions, making a comparison of financing models across countries difficult (Joseph et al. 2020). Nevertheless, most funding comes from a handful of sources, particularly in the Global South. The following sections explore the most significant of these.

Water operators and cost recovery

For most water and sanitation operators "households are the largest source of funding" (GLAAS 2022, xiii), typically through "tariff payments by users and public finance derived from taxation" (Bartram et al. 2018, 3; see also GLAAS 2017). But these cost recovery efforts are seldom sufficient. For most water operators tariffs do not even cover operating and maintenance (O&M) costs, and there are no known examples anywhere in the world where tariffs cover all capital expenditures (GLAAS 2022, xiii).

This funding shortfall is endemic in low-income countries and rural areas, with only 15 per cent of such water utilities matching operational expenditures or generating a cash surplus via cost recovery (World Bank & UNICEF 2017, 14). A survey of 30 utilities in Africa found that only 36 per cent met their full O&M costs and only 9 per cent met O&M costs plus a portion of their capital costs (UNICEF 2019, 25). These revenue shortfalls are particularly acute in sanitation, where the challenges of applying and collecting fees is more problematic, resulting in deep infrastructure spending shortfalls and a greater reliance on higher tiers of government spending (Hall & Lobina 2008; Daudey 2018).

Efforts to boost cost recovery in the Global South have met with little success over the past few decades, despite considerable efforts by international

financial institutions. The realities of poverty have meant that low-income households struggle to pay for basic levels of water and sanitation, with tariff structures in many parts of the world disproportionally burdening the poor (Rusca & Schwartz 2018). At the same time, the collection of fees is often complicated by clientelist relationships, the politicization of water supply, and powerful clients (including other government agencies and institutions) being unwilling to pay.

Even if revenues could be increased (in a progressive way), it is foolhardy to rely on full cost recovery in a single sector, with knock-on effects from WSS affecting other key areas such as health, education and energy, potentially undermining the viability of these services in an effort to finance water and sanitation. A reliance on cost recovery also exposes water operators to the vulnerabilities of economic cycles and exceptional events, underscored by the impact of COVID-19, which contributed to a liquidity crisis for many public water operators due to falling revenues and increased costs, highlighting the need for a broad-based financing model (McDonald et al. 2020; Marois 2024).

The widespread use of corporatized forms of water utilities exacerbates these cost recovery tensions. Governments around the world have increasingly turned to the use of financially ringfenced public corporations to deliver WSS, contributing to the creation of commercialized public sector cultures and ideologies, with public utilities being run increasingly on market-oriented operating principles (Brownlee et al. 2018; Andrews et al. 2022). Not all corporatizations have been carried out with commercialization in mind (McDonald 2016), but by their very nature corporatized agencies are compartmentalized silos, making it difficult to coordinate management and finance across departments, potentially undermining synergistic planning, resource use and economies of scale (Furlong 2015; Libey et al. 2020).

Local governments

Most local governments also lack the necessary resources to fully fund WSS, particularly in the Global South. The vast majority of towns and cities in Asia, Africa and Latin America have low (or no) municipal tax base upon which to draw, while downloading of responsibilities without adequate transfer of revenues, and rapid urbanization over the past few decades, have made it even more difficult to finance municipal infrastructural challenges on their own.

Options for raising external finance are also constrained, limited by already existing debt loads, weak (or no) credit ratings, and a lack of capacity to manage the funds necessary to address WSS spending. Municipal bonds—which offer a potentially affordable and accessible market-based financing source for WSS (AMWA & NACWA 2016)—are notably lacking and/or inappropriate in most countries in the Global South. They tend to be restricted by laws that impede issuance at local levels, by perceived risk on the

part of investors, by a lack of economies of scale, and by political problems associated with pooling risks and costs between municipalities (Bagchi & Kundu 2003; Pearce-Oroz 2006). There is potential for municipal bonds to play a role in financing WSS, but it will take time to develop these bond markets. This means bonds are unlikely to assist smaller and rural municipalities for the foreseeable future, and affordability could be a real concern (Peterson 2002; Mantso & Blaauw 2009; Nallathiga 2015; Singh & Dhanda 2021). Market-based bond financing also runs the risk of financializing WSS funding (that is, making WSS a profit-seeking investment vehicle), a topic we return to below.

National governments

For many water operators in the Global South, funding for WSS comes from national governments, due in part to the highly centralized and politicized nature of water services (Herrera & Post 2014; Carlitz 2017). But once again public monies are insufficient.

In some cases, it is a lack of political will. Water and sanitation is relatively easy to ignore when it comes to low-income households with little collective bargaining power, particularly when infrastructure is buried underground and lacking the eye-grabbing attention of other infrastructure investments such as roads, airports and electricity. Corruption and rent-seeking are also concerns, with WSS spending often used to garner political support or punish political opponents, further entrenching political power with central governments (Roll 2014; Colon & Guérin-Schneider 2015).

Even if the political will does exist—with many national governments claiming to prioritize water and sanitation in their official development plans—few countries have the resources required to meet their SDG 6 targets. Combined with the structural features of a global economy that have left many Asian and Latin America countries—and most African countries—heavily indebted and unable to generate sustainable economic growth, the likelihood of dramatic increases in national-level spending on WSS is extremely low (Ayadi & Ayadi 2008, Ndung'u et al. 2021).

This is not to absolve national governments of the moral, economic, health and environmental necessities of investing more money in WSS. Public spending on WSS represents only 1.2 per cent of national budgets globally (compared to 5 per cent in energy), and even these meagre budgets often go underspent, with an annual "budget execution rate" of only 72 per cent on average (60 per cent in the case of Tanzania in recent years) (Joseph et al. 2024, xviii, xxi; Kwezi 2021). Public spending on WSS also tends to benefit wealthier households and urban areas (Bakker et al. 2008).

It is therefore unrealistic to expect the majority of national governments in the Global South to cover the costs of meeting SDG 6 on their own. A significant portion of WSS funding will need to come from other sources, such as grants, aid and concessional finance from international donors.

Multilateral development banks

For many low- and middle-income countries, multilateral development banks (MDBs), such as the World Bank, the Asian Development Bank and the African Development Bank, are critical players in financing WSS. They accounted for about 15 per cent of total investments in the sector, providing over US$15 billion for water and sanitation infrastructure investments, between 2010 and 2020 (Heidler et al. 2023, 2). And because of their simultaneous role as "knowledge banks," MDBs also act as information brokers and gatekeepers, shaping the institutional and financial nature of water supply and sanitation (Kramarz & Momani 2013; Engen & Prizzon 2018).

Despite this oversized role for donors and multilateral banks, WSS forms only a small portion of official development assistance (ODA), with less than 5 per cent of ODA allocated to the sector over the 2016–20 period on average (UNESCO 2023, 164; Joseph et al. 2024, xix). Even these low figures are shrinking. ODA commitments to WSS declined by about 20 per cent over the 2012–15 period (WHO & UNICEF 2019), and a further 12 per cent from 2015 to 2021 (United Nations 2023, xi), while the gap between ODA commitments and actual disbursements to the WSS sector grew from US$100 million in 2016 to over US$2.6 billion in 2019 (Pickbourn et al. 2022). These gaps are geographically uneven as well. In Sub-Saharan Africa—the region most desperately in need of WSS investments—the proportion of aid to the sector dropped from 32 per cent to 23 per cent, while in Central and Southern Asia it increased from 12 per cent to 20 per cent (GLAAS 2022, xiii).

Private sector

Since the early 1990s, there have been widespread calls, notably from the World Bank and the OECD, for greater private sector finance investments in water and sanitation infrastructure (Briscoe & Garn 1995; Goksu et al. 2017; OECD 2019; Joseph et al. 2024). This pro-private preference is now hegemonic amongst many development agencies as well as mainstream think tanks and NGOs. Despite the much-vaunted "new" way of thinking proposed by the high-level Global Commission on the Economics of Water, the report simply resuscitates tired notions of more public–private partnerships to resolve the water crisis (GCEW 2023). Even the World Wildlife Fund insists that "the only way to achieve the required level of investment in the water sector is by significantly leveraging the private sector" (WWF et al. 2018, 8).

But after three decades of pushing for private investment in WSS, it has not materialized outside of a handful of countries (notably France, UK and Germany), and there is no evidence that private finance in WSS has increased since the 1990s (Reis et al. 2024). On average, "private-sector finance for water has remained minor" (Alaerts 2019, 8). This is particularly true in the Global South where private sector financing of WSS accounts for only 7

per cent of the total; in Sub-Saharan Africa the figure is less than 1 per cent (Leigland et al. 2016, 4).

The World Bank's own research confirms these conclusions, noting that globally, private sector spending in WSS accounts for a mere 1.7 per cent of investments (Joseph et al. 2024, xvii) and a tiny portion of total private sector infrastructure financing (Kolker et al. 2016, 3; cf. Wu et al. 2016). The United Nations Inter-Agency Task Force on Financing for Development (the body tasked with addressing the financing needs of the 2030 SDGs) notes, moreover, that private sector investment appears to be decreasing and is "well below the peak reached in 2012" (United Nations IATF 2019, 61). The World Bank draws the sobering conclusion that for most public water operators, "private finance is almost non-existent" (Kolker et al. 2016, 1).

Why has the expected level of private finance failed to materialize? The reasons are various and speak to the structural barriers to increased private sector investment in water services. Much of the aversion stems from risk-return considerations around profitability. Early expectations of large profits and trillions of dollars of potential revenues quickly evaporated in all but the wealthiest countries or in locations where guaranteed rates of return had been negotiated (Bakker 2013). Today, low levels of cost recovery and the political challenges of collecting payments from low-income households have meant that many private water companies have scaled back activities in risky locations, changed tactics to focus on more value-added niche markets and services (such as desalination), or simply withdrawn altogether from money-losing contracts (Bauby 2014). From the perspective of private investors, this makes sense. Investors' remit is not to maximize public goods for the community, but to maintain and increase private returns for their shareholders (cf. Lazonick & Shin 2020).

Political backlash against water privatization may also help to explain why private water companies and investors have reduced their financial exposure in the sector. Widespread and often violent protests have served to erode expected returns (and sully the reputations) of many private water companies (Barlow & Clarke 2017). The UK has suffered recurrent summers of discontent recently as uncontrolled sewage flows into the seas and rivers, making them unseemly and unswimmable, with widespread calls for nationalization (Gibbs et al. 2024).

The growing trend towards remunicipalizing water services (that is, making them public after a period of private sector delivery) has created additional concerns in the private water market, particularly after high-profile cities such as Paris made their water services public once again (with French multinationals Veolia and Suez losing contracts in their own backyards) (Turri 2022). Private water firms have been relatively silent on the matter, but there are signs that they are increasingly worried about what remunicipalization means for their future (McDonald 2019; Umler & Gerlak 2019).

With a growing political backlash and an unfavourable risk-return outlook, it is little wonder that private water companies are unwilling to invest

more in a sector with shrinking opportunities for recovering costs and with political threats to their very existence. These realities speak to the "serious structural constraints" of relying on private capital to fund WSS needs (Leigland et al. 2016, 2). Most private investors see "water as a financial risk" and for that reason have not invested in the sector (Jägerskog et al. 2016). As the UN (2023, xii) bluntly commented in its *Synthesis Report on Water and Sanitation*, the water sector is "unattractive for investment."

Having recognized this reality, international organizations such as the World Bank have been promoting policies of blended finance: "the strategic use of public taxes, development grants and concessional loans to mobilize private capital flows" (World Bank & UNICEF 2017, vii). Blended finance is now the centrepiece of the World Bank's "billions to trillions" SDG agenda and its related "Maximizing Finance for Development" strategy. Although the emphasis has been on emerging and frontier markets where private investments are lowest, public incentives for private finance can be found in virtually every part of the world.

The UN Inter-Agency Task Force on Financing for Development writes that, "by shifting some of the risk or cost of a project from the private to the public sector, blended finance can enhance risk-return profiles for private creditors or investors." The aims are to "leverage additional funds for the sector and reduce borrowing costs compared to a fully commercial arrangement" (United Nations IATF 2019, 86). In the water sector, it is argued that blended finance will "help overcome affordability and/or political constraints to borrowing …[and] can create new relationships and opportunities between the water and financial sectors, which can promote the long-term goal of increasing commercial financing" (World Bank & UNICEF 2017, vii). As UNESCO (2023, 166) insists, blended finance "can help transform 'nearly bankable' projects into viable projects."

There is nothing particularly original about this blending model, although there are new actors and new financing vehicles such as web-based "fintech" as well as expanded social mandates such as green financing. There is also an increased emphasis on microlending, particularly in low-income countries (Ikeda & Liffiton 2019; World Bank & UNICEF 2017).

Novelty aside, evidence suggests that blended finance is having little impact on WSS, particularly in the places it aims to target most, namely poor countries and localities. To date, blended finance in developing economies has not been widely used at scale in the water sector. A few isolated experiences have been supported by international donors, but these have mostly been in middle-income countries and have so far failed to be replicated at scale (Leigland et al. 2016, 4). Very few of these often generously subsidized efforts have met with success:

> Despite mechanisms that promised to leverage private financing at the national or regional level, or within sub-sectors (e.g. sanitation), there is not one internationally recognized financing instrument that has facilitated

> significant, sustainable private financing into the WSS sector in the last decade.
>
> (Kolker 2022, n.p.)

As Bernards (2024) has observed, private finance is generally not interested in blended finance.

The blended finance that does exist is concentrated in highly profitable sectors such as financial services and energy, flowing largely to a small cluster of emerging economies such as Turkey, Nigeria, India, Brazil and China. Even then only 2 per cent of this amount is allocated to WSS (IFC 2017). Data from the Inter-Agency Task Force on Financing for Development reinforces these claims, demonstrating that flows to middle-income countries are nearly ten times those to lower-income and least-developed countries, while only 7 per cent of blended finance in water is aligned with SDG 6 (United Nations IATF 2019, 87–88).

As Summers and Singh (2024) note (one of whom is a former World Bank chief economist): blended finance has "not raised capital [or] substantially changed financing practices." In fact,

> 2023 was a disaster in terms of support for the developing world. … [R]ising interest rates and bond and loan repayments meant that nearly $200 billion flowed out of developing countries to private creditors in 2023, completely dwarfing the increased financing from the international financial institutions. 'Billions to trillions'…has become 'millions in, billions out.'

As a result, the vast majority of WSS funding continues to come from public coffers. The public sector "dominates spending on water," providing over 90 per cent of infrastructure investment (Joseph et al. 2024, xvii; see also Hall 2015). According to the High-Level Panel on Water (convened by the World Water Council and the OECD), "private money can rarely fully substitute for public finance in major water infrastructure—it can only be a junior partner in most cases, and even then will need comforts of various kinds" (WWC & OECD 2015, 58).

The majority of multilateral policy-making related to financing WSS nonetheless continues to focus on the private sector. The World Bank, for example, continues to insist that it is essential to mobilize financing from private sources (Joseph et al. 2024). The UN (2023, xii) also continues to maintain that "new investments [in WSS] must be attracted by better enabling environments," while the Global Commission on the Economics of Water insists on "crowding in" private companies, banks and institutional investors (GCEW 2023, 8).

This emphasis on private financial solutions is also reflected in the academic literature. A comprehensive survey of research on the topic found that over 75 per cent of publications written between 1989 and 2015 focused

on private sector financing for WSS, while only 5 per cent explored public investment (Kumari & Sharma 2017).

This ideological push for private investment appears to have become something of a self-fulling prophecy by undermining public spending. As Heidler et al. (2023, 6) note in their review of 60 years of MDB involvement in the water and sanitation sector, calls for greater private finance investments have "delegitimize[ed] the role of public finance," arguing that "if this discourse has had any effect at all it has been to reduce public investment in water supply and sanitation."

Public banks to the rescue?

There is one potential source of WSS finance that has been largely ignored in the literature to date: public banks. Our focus is largely on public banks that operate at a national level (as opposed to multilateral public banks such as the World Bank or African Development Bank). National public banks can be local, regional and even international in scope (Marois 2021; OMFIF 2017). There are public banks that have explicit mandates to finance water services, with some having done so for decades. The Dutch Nederlandse Waterschapsbank NV (NWB), for example, was formed in 1954 with the sole mandate of lending to the country's public water authorities (Schwartz & Marois 2022). The German Kreditanstalt für Wiederaufbau (KfW) is another example. Founded in 1948 as part of the Marshall Plan for reconstructing post war Europe, KfW is Germany's third-largest banking institution, and water and sanitation is a major part of its lending portfolio at home and abroad (Marois 2017; Mertens 2021).

Many public banks in the Global South also have mandates and commitments to finance water and sanitation (as we shall see in this book) and have been important actors in advancing their country's SDG 6 ambitions. Public banks in the Global South have long been on the radars of major international development agencies, and many have joined the aforementioned FiC Summit, which represents more than US$23 trillion in public bank assets (FiC 2023).

We emphasize, once again, that public banks are not a panacea for financing WSS in the Global South. While they have substantial resources, individual public banking capacity varies significantly within and across countries. Neither should it be expected that public banks cover the massive financial needs of the SDG 6 agenda on their own, or that WSS operators should be expected to take on massive debt loads to fund the improvements required. National governments and aid agencies must assist with these spending needs in ways that do not burden water operators with unsustainable debt or public banks with the sole responsibility for holding this responsibility.

That said, public banks can make a significant difference given their financial capacity, ability to leverage funding at low rates, knowledge and expertise, and potential mandates to advance progressive social, economic

and environmental goals. Public banks can also build synergies with other public services and institutions via public–public collaborations that go beyond finance to foster an inclusive pro-public ecosystem (Marois & McDonald 2022; Marois et al. 2024).

We describe some of these potential outcomes in more detail below (along with some cautionary notes), but we first provide a brief historical overview of national public banks and the theoretical debates surrounding them to help familiarize readers with the topic and to better situate ourselves within these discussions.

What is a public bank?

Despite their long history and presence around the world, there remains relatively little scholarly agreement as to what constitutes a public bank. Public ownership is one facet, but there is no consensus as to what level of state ownership or control is required. There are some publicly owned banks with no political representation on their board (for example, the Dutch NWB), while others have political representation but no direct state ownership (for example, Banco Popular in Costa Rica) (Marois 2021).

We take a broad evidence-based definitional approach, describing public banks as *financial institutions that are majority owned by the state or some other public entity, or governed under public law or by public authorities, or that function according to a binding public mandate* (or any combination thereof) (Marois 2021, 11–2). We note that public banks can operate at a municipal, national and international level, with some operating at multiple scales simultaneously (OMFIF 2017; Scherrer 2017; Marois 2021; Xu et al. 2021; Clifton et al. 2021; Griffith-Jones et al. 2023).

There are different institutional forms of public banks (Marois 2021, 33–4). Public *commercial retail* banks (also known as first-tier banks) typically have branch-based networks, accept personal deposits and focus on providing daily financial services for individuals, households, small and medium enterprises, corporations and governments. Public *development* banks usually do not accept individual deposits or provide daily financial services. Instead, these development banks tend to focus on raising larger quantities of cheap capital to support big, longer-term investments, offering technical expertise and supporting government policy objectives. Public *universal* banks combine commercial and development functions, both taking deposits and offering development finance. This book mostly focuses on public development banks but includes a case of public universal banks (Costa Rica) and makes reference to public commercial banks (India).

This raises the question of public purpose and public mandates, by which we mean the nature of the goals of a public bank and how these goals are legally and operationally codified in policies that inform practices (Barrowclough & Marois 2022). Here again there is no consistent definition or understanding, let alone consensus, on whether public banks are levers

of government policy or should be catalysts of private finance or are simply tools of corrupt politicians.

There have been two dominant economic perspectives that have tended to constrain rather than enable thinking about the potential of contemporary public banks. On the one hand, conventional neoclassical economists assert that public banks inherently serve the whims of politicians, and as such are structurally prone to political abuse, thus rendering public banks less efficient than private banks in terms of generating profits and broader economic growth (La Porta et al. 2002; Marcelin & Mathur 2015). Heterodox economists, by contrast, argue that the essential purpose of public banks is to provide additionality, that is, to focus on doing what private banks cannot or will not do for economic growth and innovation. In this perspective, public banks are seen to have a fundamentally different logic than private banks and are meant to stabilize markets and help overcome market failures (Mazzucato 2015; Ribeiro de Mendonça & Deos 2017; Henderson & Smallridge 2019).

Conventional and heterodox views both adopt conceptual understandings of public banks that are "pre-social," that is, having qualities and characteristic that are not subject to historical change. The result is a literature that defines the ultimate purpose of public banks in predetermined yet polar opposite ways: one essentially negative (neoclassical) and the other positive (heterodox). This has promoted an ahistorical and static reading of public banks that is unable to account for their institutional diversity and dynamism, let alone the nature of power and political struggles over what public banks do—and why—in different place- and time-bound contexts within the framework of global capitalism.

Our approach is to chart a more realistic pathway to understanding. We begin by viewing public banks without recourse to an essential purpose, good or bad. Public banks are approached openly, to enable analysis that can work with historic diversity and operational complexity without having to graft some ultimate purpose onto all public banks as a collective. While public banks are institutions located within the public spheres of states, they can and do undertake financial intermediation and banking functions without an innate public direction or policy orientation. As such, public banks can operate according to public and/or private interests and, indeed, logics. This is because public banks exist and persist within the wider structures of class-divided, gendered and racialized global capitalism and, like all public entities, they are contested and evolving institutions that are made and remade in light of competing and often unequal power relations (Marois 2021). This constitutes a "dynamic" view of public banks—one which charts a realistic pathway between polarized neoclassical and Keynesian perspectives (Marois 2021).

While the public banking economics literature has shown little appetite to revisit its more static conceptual worldviews, there has emerged resurgent interest in and debate over what public banks can and ought to do within society (Ray et al. 2020; Mertens et al. 2021; Clifton et al. 2021; Marshall

& Rochon 2022; Griffith-Jones et al. 2023). In the USA, for example, civil society organizations and political leaders are pushing to create new public banks for the provision of more equitable and sustainable financial services in communities, notably in marginalized communities, guided by normative commitments to addressing racial reparations with Black and Brown communities (Sgouros 2022). In Europe, academics, policymakers and civil society have focused more on the potential of "greening" public banks (Marodon 2022). There is also a growing global interest in the democratization of public banks, as well as their contribution to definancialization (by which we mean a rolling back of the influence of financial motives, financial markets and for-profit financial actors and institutions in the operation of domestic and international economies) (Karwowski 2019; Block & Hockett 2022).

Despite these differences, there is a converging consensus on what public banks can do well—at least from a shared commitment to supporting economic development that is equitable, just and sustainable. While by no means applicable to all public banks, there is growing empirical evidence that they *can* function in the public interest and according to public purpose in a number of important ways: as providers of long-term and low-cost financing; as less-financialized, place-based lending institutions; as counter-cyclical and crisis-facing lenders; as funders of decarbonization and ecologically sustainable projects; as policy partners of government and community; as hubs of knowledge, expertise and development networks; and as political and economic counterweights to mainstream financial institutions (Scherrer 2017; Mikheeva 2019; Ray et al. 2020; Marois 2021; Cassell 2021; Barrowclough & Marois 2022; Griffith-Jones et al. 2023 Marois et al. 2023). This book contributes to evidencing the promising practices of public banks.

A short history of public banking

The foundations of today's public banking institutions emerged hundreds of years ago in European city-states. Barcelona created the first municipal bank in 1401, the Taula de Canvi, to help balance budgets and manage city finances (Milian 2021). By the 16th and 17th centuries, public banks had emerged in Northern Europe and the American colonies (Roberds & Velde 2014). By the start of World War II, hundreds of public banks existed worldwide, from Argentina to Canada to Norway to Turkey. In most cases, public banks provided affordable financing and development expertise. But the diverse histories of public banks in different societies also remind us that public banks are not inherently "good," with many having been complicit in colonialism, slave-trading, war-making, anti-worker campaigns and the dispossession of Indigenous peoples' lands by White farmers (McNally 2020; Marois 2021). There remain ongoing problematic practices and pitfalls among public banks that continue to demand that scholars and civil society remain vigilant in holding them to account and making them better (Antonowicz-Cyglicka et al. 2020; CEE Bankwatch Network 2021).

The era following World War II witnessed a massive expansion in public banks due to their ability to be crisis-facing financial institutions (cf. Case-Ruchala 2024). Postwar reconstruction gave rise to the German KfW, for example. Countries like Turkey created new banks to support industrial development, small businesses and municipal infrastructure (Marois & Güngen 2016). National liberation struggles from Cuba to India saw newly independent governments nationalize private and colonial banks within their territories and create new ones (Marois 2021). In Europe, a new range of regional banks emerged, including the Council of Europe Development Bank (1956, as the Resettlement Fund), the European Investment Bank (1958) and the Nordic Investment Bank (1975).

Global transitions to neoliberal strategies of development since the 1980s brought with them economic and ideological pressures to privatize existing public banks (von Mettenheim & Del Tedesco Lins 2008), while multilateral development institutions militated against public bank expansion (World Bank 2001). Perhaps as a result, the study of public banks nearly evaporated. The scholarship that did take place was dominated by conventional economistic views advocating privatization (La Porta et al. 2002; Barth et al. 2008).

Recent developments have renewed interest. The 2008–09 global financial crises not only brought the financial system to the edge of collapse but also threw communities and working-class families around the world into economic despair. The 2015 Paris Agreement on climate action has underscored the failure of private finance to meaningfully confront climate change. The outbreak of the COVID-19 pandemic witnessed private lenders withdrawing support when it was most needed.

Scholarship has since documented progressive alternatives provided by public banks in response to these crises (Marois 2012; Brown 2013; Scherrer 2017; UNCTAD 2019; McDonald et al. 2020; Marois 2021; Griffith-Jones et al. 2023). It is widely agreed that public banks are experiencing a "burgeoning renaissance worldwide" (Xu et al. 2021, 271; cf. Mertens et al. 2021; Clifton et al. 2021). Not only have the numbers and combined assets of public banks been on the rise, "but their roles and prominence in the development agenda has also been boosted" (Bilal 2021, 6). This is perhaps nowhere more visible than in relation to climate, the SDGs and the global ecological crisis (Marodon 2022).

Nevertheless, there remains a sticky assertion that development transitions necessarily require *more* private finance because of perceived public bank incapacity (Wang 2016; Newell 2021). This claim has stuck not only due to conventional preferences for market-based development but also because of a severe underestimation of global public banking numbers and financial capacity. The main culprit here is the World Bank, whose reports have historically failed to capture the true extent of public banking capacity for years: a 2013 report found only US$2 trillion in public banking assets while a 2018 survey found a mere US$940 billion (World Bank 2013; de Luna-Martínez

et al. 2018). For its part, the United Nations Inter-Agency Task Force on Financing for Development states that "national development banks" have less than $5 trillion in assets; hence the perceived need to mobilize private finance to reach the anticipated US$90 trillion in sustainable infrastructure investments needed to achieve the SDGs (United Nations IATF 2019). Only in 2022 did the IATF Report update its data, identifying the "large footprint" of some 527 public development banks with assets totalling US$13 trillion—data based on research undertaken by FiC researchers (Xu et al. 2021). This more recent accounting of the world's public development banks is a welcome corrective. Yet, the preferred focus on public development banks excludes other types of public banks, again leading to an underestimation of the actual capacity of all public banks globally.

Based on BankFocus (2024) data, we estimate that there are more than 900 public banks (development, commercial and universal) with combined assets of US$57 trillion. Adding in the world's public multilateral banks and central banks, the total assets of these 1028 public financial institutions exceeds US$86 trillion—an amount 50 per cent greater than the 2023 GDPs of the USA, China, Germany, Japan and India combined (see also Marois 2021, 55). Seen in this light, the "necessity" of private finance fades substantively, suggesting that there is an urgent need to better understand the full scope of the public financial institution ecosystem. There is enormous scope to align and mobilize total public banking resources towards sustainable and equitable transitions.

The focus of this book is on public banks in the Global South, with case studies in Africa, the Middle East, Asia and Latin America. While there is significant public banking capacity in all these regions, numbers and assets vary considerably, with larger countries often home to the largest institutions. According to BankFocus (2024) data, Africa has 104 national and subnational public banks and financial institutions that hold US$673.5 billion in assets. The Middle East has 61 institutions with US$1.42 trillion in assets. Latin America has 127 institutions with US$1.17 trillion in assets. Asia is hands down the largest public banking region, with 315 institutions that hold some US$38.8 trillion in assets. The top 11 Chinese banks alone have over US$24 trillion in combined assets.

It should come as little surprise that so-called developing countries and emerging markets in the Global South have hundreds of public banks with trillions of dollars in combined assets. As they emerged as sovereign states, most Global South countries created financial systems that were bank-based (as opposed to the more market-based system characteristic of the USA or the UK). Bank-based financial systems are important because the deposit-taking institutions (the commercial and universal banks) absorb and hold scarce savings within the country, and then mobilize this money as investment capital within the country's borders, in what we call domestic resource mobilization. Deposit-taking banks would work with development banks to find

ways of financing large infrastructure projects (like water, energy and transportation) and key economic sectors (like agriculture, industry and exports). Development banks would often work with foreign governments and development agencies to also secure foreign currency loans to purchase imports. Indeed, public banks were often the dominant financiers of development in the Global South (Marois 2012) and in many countries continue to play a vital role in financing essential infrastructure.

Research methods

As outlined above, our perspective on public banks is a "dynamic" one, seeing them as neither inherently good nor bad but rather as historically contested social, political and economic institutions shaped by forces that go beyond their ownership status. We did not set out to prove one perspective of public banks over another. Our aim has been to cast a wide inquisitive net to see how and where public banks operate in the water and sanitation sector in Asia, Africa, the Middle East and Latin America and what (potentially positive) lessons there are to be learned from these experiences.

As with our previous research on public banks and public water in Europe (Marois & McDonald 2022), we developed standardized, semi-structured questionnaires that could lead to multiple types of responses. We used these questionnaires to interview senior officials at public banks and public water operators in each of the case studies. The survey instruments were workshopped in advance by members of the research team to ensure a consistent comparative reference point, while also allowing for flexibility where local context demanded. Thus, case studies were guided by a common research framework but sufficiently flexible for the disparate realities of public banking and public water institutions in the Global South.

Our choice of case studies was driven by two factors. First, we aimed for geographic and institutional diversity, both in terms of public banks and public water operators. In doing so, we identified locations where public banks have been active in lending to the water sector in relatively successful ways as well as locations where relations between public banks and public water operators have been either non-existent or fraught.

The second consideration in case study selection was the availability of suitable researchers, both in terms of familiarity with the country and institutions in question as well as their capacity to operate across the formidable disciplinary and methodological gap that exists between academics that focus on public water and those who research public banks. In some cases, it was possible to bring together researchers from both sectors to collaborate, while other cases were completed by authors who became quick studies of the sector they were less familiar with. In all instances, peer review alongside expert editorial oversight helped to reduce but not eliminate some of the incongruities between the final outputs.

Cautionary notes

Our research identifies some cautionary tales. It would be remarkable if there were none, and it is vitally important that pro-public forces confront these challenges head-on.

The first of these cautionary tales is that progressive developments should never be taken for granted. As dynamic institutions produced in class-divided, gendered and racialized global capitalism, public banks are constantly being made and remade in ways that are impossible to predict. As the chapter on Brazil demonstrates, positive advances can be quickly reversed—ideologically, institutionally and legally. After decades of supportive public bank engagement in the WSS sector, Caixa and BNDES were transformed into pro-privatization institutions during the tenure of Jair Bolsonaro from 2019 to 2023. The re-election of the Workers Party appears to have reversed that trajectory somewhat, but institutional and ideological inertia can take years to alter, demonstrated by the fact that public banks in Brazil are still underwriting some of the largest privatizations of water and sanitation in the country's history, despite widespread public opposition (see the chapter on Brazil in this volume). Relatedly, we continue to see pressure by public banks (at least in narrative) for cost recovery in public water, even when this is far beyond the realm of the possible, such as the case of KfW in Palestine.

There are trade-offs with regard to degrees of state engagement and oversight. Most public banks have some form of governing autonomy from the level of government they are associated with. Such arm's-length arrangements provide a degree of independence that allows bank officials and workers to manage day-to-day operations without undue political interference. But forms of independence can create uncertainty around the role the state plays in acting as a financial backstop. Sovereign guarantees generally improve the creditworthiness of public financial institutions, which in turn lowers the costs of lending and provides access to larger pools of capital. A lack of clarity on this front can limit the options available to public banks and drive up the costs of infrastructure projects. The Dutch NWB is limited in this regard (Schwartz & Marois 2022), and banks that are relatively new to the WSS sector can learn from examples such as the Banco Popular in Costa Rica (see chapter in this volume). At the same time, a lack of coordination with governments can undermine the long-term planning and state support needed to develop, maintain and upgrade large-scale WSS infrastructure. In this regard, national development plans in the Philippines and Vietnam have helped to enable public banks in the water sector.

There are also trade-offs between efficiency and scrutiny. Due diligence is central to any lending process, but overly bureaucratic processes can cause delays and even push water operators to private lenders, as demonstrated in the cases of Uganda and Tanzania, Vietnam and Argentina in this volume. Striking the right balance between efficacy and inquiry is never easy and will

change over time as knowledge and relationship building expands, making it important to constantly reassess processes and procedures.

If domestic public banks (must) finance themselves on international capital markets, foreign exchange fluctuations are another concern, particularly in the Global South where currencies are more susceptible to variability due to liberalized financial markets, commodity price instabilities and other factors that are often out of a country's direct control. One way to address this could be to have multilateral financial institutions offer currency protection to local public banks, as illustrated by the issuance of a 10-year green revenue bond valued at TZS 53.12 billion (US$20.8 million) in early 2024 to support the expansion of infrastructure at the Tanga Urban Water Supply and Sanitation Authority in Tanzania, backed by the United Nations Capital Development Fund (UNCDF). Acting as a third-party guarantor, UNCDF's support allowed the water authority to tap into local capital markets, raising funds in local currency and reducing risk and volatility (UNCDF 2024). But domestic capital markets are sometimes thin, and interest rates often high in the Global South, limiting the potential for raising finance in local currencies in certain cases. There may also be concerns with the kinds of conditionalities imposed by collaborating multilateral financial institutions. India overcame this funding hurdle by fostering a large consortium of domestic public banks to finance a regional water project. Yet, where private finance plays a significant role in the capitalization of public banks, the scope for progressive lending will be circumscribed by the discipline of global financial markets.

Most importantly, there is a paradox at the heart of public banking that raises the biggest concern of all: increased debt. The whole point of public bank lending is to amortize the costs of major infrastructure spending over periods of time that go beyond the budgetary cycles of governments. But given the scale and urgency of WSS financing needs, no government (let alone a single water operator) can borrow themselves out of the financial holes they are in. Even near-zero interest rates can create repayment schedules that overwhelm public authorities and governments (which can rise dramatically with changed global economic conditions). This is particularly true in countries most in need of WSS spending because they tend to already be heavily indebted. But wealthy countries in the Global North face a similar conundrum, with few politicians willing to take on the levels of debt necessary to address the true extent of WSS needs (Marois & McDonald 2022).

Pressure on public banks to commercialize their operations is also omnipresent. Market-oriented regulatory changes have tended to shrink the spaces in which they can legitimately operate, while narrow performance assessments heap pressure on public bank managers to (inadvertently) compare themselves to their for-profit counterparts (Scherrer 2017; Oberholzer 2023). Public banks are increasingly being tasked with finding ways to de-risk private sector investments while pursuing public purpose impacts, the contradictions of which typically lead to cost increases and poorer quality public infrastructure (Marois 2021; Mertens et al. 2021; Eurodad 2022). At the same time,

otherwise effective public bank collaborations can be undermined by private corporations trying to extract excessive profits in the construction of public WSS infrastructure, as in the case of India in this volume. Heavier capitalization by higher tiers of government, cross-subsidization from more profitable activities, and collaboration amongst public banks (including deposit-taking commercial ones) can help to eliminate these marketization pressures.

Ultimately, though, public banks can only be part of the solution. There is no alternative to massive injections of public funding in WSS by governments and, in the Global South, international aid and development agencies (Pickbourn et al. 2022). These resources must also be allocated in less colonial and more democratic, transparent and equity-oriented ways than it has in the past. This is a tall order, but if done in ways that seek to expand the financial landscape through closer collaboration with national public banks, public water operators and water users, the potential for multilateral public banks to play a catalytic role in expanding and improving progressive public WSS is magnified considerably.

Promising findings

Positive findings from the case studies can be grouped into seven categories, summarized here. The first and most important lesson is that national public banks can provide large amounts of relatively cheap capital that is "patient." Our cases show long-term time horizons that match the physical, economic and environmental needs of water and sanitation infrastructure, much of which lasts for decades. This is opposed to the shorter-term profit-motivated lending that drives private finance (EPSC 2017). Public banks are typically able to provide lending on terms that private banks and investors are seldom able or willing to compete with. This is a finding that is consistent with the wider literature on the advantages of public bank lending for public infrastructure (Bilal 2021; Marois 2021; Marois et al. 2023; Mertens et al. 2021). Although the levels of capitalization of some of the public banks in this book are lower compared to those we investigated in the Global North (Marois & McDonald 2023), there is considerable potential (and need) to expand public bank capitalization through capital injections from national governments. As we shall see below, public–public collaborations with other public financial institutions can help to expand their ability to finance WSS.

Second, national public banks have localized expertise on the social, political and ecological aspects of water and sanitation that multilateral lenders often lack. Despite the self-proclaimed "knowledge bank" moniker touted by multilateral institutions such as the World Bank, their approach to lending is generic, market-oriented and often neocolonial. As Bazbauers and Engel (2021, 270) note, most multilateral banks "basically follow the organizational blueprint laid down by the World Bank, with variations emerging due to differences in capital, shareholders, capabilities, and mandates." Deepening the sectoral knowledge of national public banks—especially

through more direct engagement with public water operators—is therefore critically important (as highlighted in the chapter on the Philippines). Support from multilateral banks can assist in this regard but must not seek to replicate a one-size-fits-all approach to training. The better-resourced multilateral banks must take culturally and politically appropriate capacity building seriously rather than treating local public water and public bank officials as subordinates in a global hierarchy of finance emanating from Europe and North America (as highlighted in the chapter on Uganda and Tanzania).

A third advantage of public banks is their potential to definancialize lending by rolling back the influence of financial motives, financial markets and for-profit financial actors and institutions, while foregrounding local interests (Karwowski 2019; Marois 2021; Block & Hockett 2022). Broadly defined as the growing power of financial actors in everyday activities, with a shift in the locus of profitmaking from the "real" to the "financial" economy, financialization has come to characterize private sector involvement in core services and infrastructure through complex (and often opaque) vehicles such as private equity funds and the securitization of revenue flows (Ahlers & Merme 2016; Loftus et al. 2019; Reis et al. 2024). The public banks studied here have largely resisted this trend, avoiding financialized lending vehicles such as blended finance in public infrastructure while promoting equity and sustainability measures that go well beyond narrow financial indicators. Costa Rica's Banco Popular is an exemplar in this regard, notably with its focus on gender and ecology, as is India's NABARD in the convening of a large public banking consortium.

A fourth positive lesson is the potential for public banks to participate in and advance public–public partnerships (PUPs), defined as institutional arrangements between public institutions operating in different sectors or jurisdictions which aim to promote shared public service goals through synergistic engagement such as co-financing, knowledge sharing and capacity building. PUPs are popular within the water sector (Ferrero et al. 2024), and there are signs that they are emerging between public banks and public water utilities and beyond. The chapters on Costa Rica and Argentina, for example, describe arrangements between national water operators, community-based entities and public banks. Driven in part by the urgency of COVID-19, these arrangements appear to have opened new forms of engagement. In Uganda and Tanzania, local public banks are actively expanding their relationships with water operators and have expressed an interest in escalating the co-lending they do with multilateral banks operating in the region (with the proviso that they have more say in decision making). By definition, though, our research into public banks and public water excavated these already-existing partnerships, which in some case stretch back decades but have been given renewed vigour in light of SDG 6.

A fifth lesson is the importance of guarantees from national governments. Loans from public banks such as KfW are guaranteed by local governments. However, the advantage of local public banks is that they can lend in the

domestic currency, avoiding currency mismatches and not burdening the capital account. In principle, money issued by domestic public banks can multiply levels of demand, especially if investment plans do not rely on foreign exchange (cf. Oberholzer 2023).

In Costa Rica, for example, Banco Popular can lend at cheaper rates because it is widely understood that the bank has an implicit sovereign backstop, despite its unusual governance structure (Marois 2021). Guarantees from multilateral institutions could help in this regard, improving the credit ratings of local public banks in the Global South as well as assisting with their capitalization (Marois & Volz 2024). Domestic public banks thus have a unique potential to provide finance for priority sectors such as WSS (Oberholzer 2023).

Sixth, our case studies show that domestic public banks can issue smaller-scale credits, which is a notable difference to big multilaterals like the World Bank or African Development Bank, which are usually limited to financing large-scale infrastructure projects (Reis 2022). Significant success can often be better achieved through small-scale WSS solutions. Here, domestic public banks can have a key role to play, as shown by the case of Vietnam and Philippines in different ways. So too can smaller-scale multilateral banks, such as the innovative work of FONPLATA in financing Argentina's Water & Work and Sewage & Work programmes run by the Buenos Aires municipal water utility for extending water and sewage networks to low-income neighbourhoods. Local public banks and smaller regional multilaterals can have a complementary role to larger MDBs' focus on large-scale WSS infrastructure, financing the "last mile" problem while also achieving social impacts through generating income for poor households.

Lastly, the research strongly suggests that public banks can persist in ways that are less prone to political and electoral cycles (although never immune from them), given their institutional structures and sectoral expertise, providing the potential for lending strategies and institution building that can extend beyond political timelines and personalities. Long-term infrastructure requires long-term planning. Public bank and public water officials in well run and governed institutions can negotiate terms that are suited to the infrastructural needs of a country.

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2 The hard work of progressive public lending

FONPLATA and financing the Sustainable Development Goals in Buenos Aires

Melina Tobías and Devin Case-Ruchala

In 2015, all 191 United Nations Member States signed onto the 17 United Nations Sustainable Development Goals (SDGs), which outline climate-related socio-economic measures to be achieved by 2030. SDG 6 calls for the universalization of affordable, safe and adequate water and sanitation services (WSS), both as a matter of climate policy and to fulfil the UN's declaration of water as a human right. Meeting these goals will require significant financing. One potential source is regional public development banks, which have played an important role in financing WSS in Latin America for decades (Fonseca et al. 2021).

In this chapter, we analyze an innovative loan programme between a regional public development bank, the Río de la Plata Basin Financial Development Fund (FONPLATA), and the Argentinian water operator, Agua y Saneamientos Argentinos S.A. (AySA). FONPLATA was founded in 1971 and is collectively owned and governed by the countries that border the Río de la Plata basin (Argentina, Bolivia, Brazil, Paraguay and Uruguay). AySA is a public company servicing the Buenos Aires Metropolitan Area (BAMA) in Argentina that was returned to national ownership in 2006. In 2019, FONPLATA approved a loan to finance the Water + Work and Sewage + Work (W/S+W) public works programmes that not only bring WSS to low-income households but create employment in these communities by hiring local residents who are members of cooperatives to do the construction and installation work. The FONPLATA loan is innovative because it takes a results-based approach that makes disbursements conditional on the achievement of particular targets: a specified number of water and sewage connections, the creation of jobs and achieving gender equity in employment. In this sense, unlike traditional loans, which are typically disbursed based on the completion of predetermined activities or the submission of expense reports, a results-based approach focuses on actual results. This model of lending is distinctive because it ensures that funds are only released when tangible, measurable improvements are realized, aligning financial incentives

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with project outcomes. The FONPLATA case study is also important because it has paved the way for similar forms of results-based lending for another WSS loan financed by the World Bank.

One principal question guided our analysis: what conditions led FONPLATA to provide this particular form of financing to expand access to WSS in Buenos Aires, and how were the terms of the loan set? We argue that the public water provider and the public bank had mutual interests. After the return of the water provider to public control in 2006, the Argentine government was looking for a way to expand WSS in vulnerable areas and to increase opportunities for public employment through its W/S+W programmes. In AySA's first years of operation, these programmes were financed by the company's own resources and direct transfers from the national government. A few years ago, however, AySA began to seek new sources of financing through multilateral credit organizations. The opportunity came when FONPLATA offered a loan to finance these programmes. For its part, FONPLATA saw this loan as an opportunity to further carve out a niche in the financial ecosystem: specifically, the offer of mid-sized SDG-aligned loans to member states. While it was not FONPLATA's first loan in Argentina, it was their first results-based loan in the WSS sector.

The case study features an example of effective public–public collaboration between a public bank and a public water operator (see Marois & McDonald 2022; Fonseca et al. 2021). This is the first case study of the relationship between FONPLATA and AySA of which we are aware. As such, this chapter helps to fill the gap in the literature on how to finance the SDGs in the WSS sector in pro-public ways—a literature that remains dominated by studies of public–private partnerships and private forms of financing (McDonald et al. 2021). In addition, the chapter contributes to the literature on how to incentivize and measure the performance of water operators. The FONPLATA–AySA loan features co-created performance indicators that promote non-commercialized forms of water delivery and equity (McDonald & Ruiters 2012; Marois & McDonald 2022), based on what Marois (2022a) has dubbed "metrics that matter."

The first section outlines the development of AySA and its relationship with national government, its changing interests and priorities with respect to the expansion of WSS, and the challenges therein. The second section describes public banks in Argentina and the evolution of FONPLATA as a niche lender, which is a result of its own organizational evolution and changing demands of its member nations and international competitors. The third section describes FONPLATA's loan to AySA, including why and how the results-based approach based upon socio-economic indicators was developed. The fourth section examines the specific operations of the W/S+W programmes and describes the on-the-ground impact of the loan. Throughout our analysis, we rely on a qualitative methodology using primary source individual and group interviews with WSS sector officials and public development bank employees as well as secondary sources (see Appendix for list of interviews).

The fifth section describes AySA's efforts to increase the number of household connections. The conclusion highlights the main contributions of the case.

Water and sanitation in the Buenos Aires Metropolitan Area

The creation of the state-owned company, AySA, took place in the complex social, political and economic context of Argentina's macroeconomic crisis in 2001. The 2001 crisis entailed the end of the peso–dollar currency peg in place since 1991 and the "pesification" of public service fees, which resulted in the immediate conversion of dollars into pesos and subsequent depreciation of this revenue. These events sparked an accelerated process of de-privatization of WSS in the country (Azpiazu et al. 2008). Provincial companies assumed the operational control of most water operators in Argentina. One exception was AySA, which was re-nationalized when the national government became its main shareholder, holding 90 per cent of its shares.

The contract signed between AySA and the national government in 2006 defined the "concession goals" and the "concession area," that is, the powers conceded to AySA to carry out WSS operations for a certain period of time and within a legally defined area. This contract replaced the concession contract of the preceding private company, Aguas Argentinas, which was in charge of the services for the period 1993–2006. AySA's initial concession area covered 17 out of 24 municipalities within the BAMA, an area that includes and surrounds the Autonomous City of Buenos Aires (the nation's capital) in two rings (see Figure 2.1).[1] In total, the BAMA has nearly 14 million inhabitants: 3 million live in the city and 11 million live in the remaining districts. In total, BAMA's population represents more than 30 per cent of the country's population packed into a space representing less than 1 per cent of the national territory.

This multilevel arrangement of Argentina's WSS has its origins in the 20th century when WSS were provided by the national company, National Sanitary Works (Obras Sanitarias de la Nación, OSN), which was in operation from 1912 to 1980. OSN had jurisdiction in urban centres throughout the country. After 1980, OSN faced significant financial troubles and ultimately reduced its concession area to part of the BAMA. The rest of the services were transferred to the provinces, including the province of Buenos Aires. As part of the implementation of neoliberal policies in the 1990s, the services of the metropolitan area were privatized. The concession area of OSN was maintained in the concession contract of the private company, Aguas Argentinas, which operated from 1993 until its cancelation in 2006.

Since its inception, AySA has counted on the financial support of the national government, which has helped it keep tariffs low. Tariffs had increased significantly under the private company Aguas Argentinas (Azpiazu & Castro 2012). After the return of WSS to public control, the government—then under control of the Kirchner administrations (2003–15)—froze AySA's tariffs. This move was meant to bolster the real wages of the population, as

Figure 2.1 Buenos Aires Metropolitan Area.

Source: Authors' elaboration.

the government considered service fees to be an inflation control measure, that is, an element of monetary policy. In 2015, a neoliberal-oriented administration took office under President Mauricio Macri (Morresi & Vicente 2019). Tariffs were again adjusted towards cost recovery, and the government cut its subsidies to AySA. Tariffs went from covering 40 per cent of its

operating costs in 2015 to 90 per cent by 2019. In the context of growing inflation, the Peronist-allied administration that came to office in 2019 froze tariffs until 2022, compensating AySA with transfers.

AySA's average monthly billing for water and sanitation is lower than most of the water operators in Argentina (ADERASA 2021). Only about 25 per cent of AySA's users pay fees based on usage. The majority of residential households within the concession area do not have metering, which means that tariffs are based on a formula that takes into account the surface area and location of the property rather than individual consumption (ADERASA 2021). According to the 2010 census, within the concession area, AySA's network coverage reached 76 per cent of households for drinking water and 57 per cent for sewage (INDEC 2010). Service coverage, however, is uneven. Residents in the Autonomous City of Buenos Aires enjoy nearly 100 per cent coverage, while service coverage for water and sanitation in more remote municipalities does not exceed 20 per cent. For example, only 15 per cent of households in Ezeiza in the south have access to drinking water and 18 per cent to sewage. Barely 17 per cent of households in José C. Paz in the north-west (incorporated in 2017) have access drinking water and only 6 per cent to sewerage (INDEC 2010).

In order to address existing service deficits within their concession area, AySA decided to continue and expand the Water and Work (W+W) programme. This programme was created in 2004 with the dual objective of reducing health risks in low-income areas and offering local sources of employment. It was started as part of a social programme at the time called Unemployed Heads of Households Plan (Plan Jefas y Jefes de Hogares Desocupados), successor of the Work Plan (Plan Trabajar). More than just for delivering services, the W+W programme was conceived as a social protection programme that aimed to promote social inclusion through the creation of "decent and genuine work," a policy orientation that emerged in the context of the massive social mobilization in the wake of the 2001 crisis (Kasparian 2020).

The W+W programme aimed to extend service access in the most vulnerable neighbourhoods through the construction of secondary networks by employing local residents who formed worker cooperatives. Financial resources for the programme came from the AySA's own funds as well as the Sub-Secretariat of Water Resources, through the National Entity of Sanitation Water Works (Ente Nacional de Obras Hídricas de Saneamiento), which covered the cost of organizing and training the cooperatives as well as wages (Lentini 2007). After the termination of the contract with the privatized company in 2006, AySA assumed the responsibility for the W+W programme, expanding the model to all the municipalities in the concession area and adding sanitation services, that is, adding the S+W component.

In 2016, AySA began expanding services beyond the original concession area, incorporating nine new peri-urban municipalities. AySA is now responsible for the entire metropolitan area with the exception of the Berazategui district.

This expansion posed technical and socio-economic challenges for the water operator. Physically, its service area nearly doubled in size. Moreover, these new districts have high rates of poverty. Just under half of the 3 million people added to the concession area live in informal settlements (Salvia 2020). The population in these areas has grown rapidly due to influx of new families moving to more peripheral areas and the densification of the inner-city slums (Cravino 2018; Tobías & Fernández 2019). At the time of expansion, it was estimated that only 38 per cent of the population in these newly incorporated areas had access to the piped drinking water network, and 27 per cent to sanitation services (AySA 2018a).

The ambitious expansion of the service area has meant significant extra costs and the need for further financing. The Argentine government decided to seek external sources through multilateral credit institutions. As explained in the following section, FONPLATA emerged as a key lender for AySA's W/S+W programme for two reasons: the domestic public banking context and FONPLATA's own organizational evolution that made it an ideal lender given the way that it targets the SDGs.

Public banks in Argentina

Argentina has a relatively robust domestic public bank sector with a long historical legacy, with 14 public banks currently in operation (excluding the central bank). Public banks include the Banco de la Nación (a large national commercial bank established in 1891), the Bank for Foreign Investment and Trade (Banco de Crédito Industrial, BICE) (an export–import and development bank established in 1993) and several sub-national commercial public banks operating at the provincial or municipal level (see Table 2.1). The overall level of government ownership of assets in the banking sector grew in the past two decades from 30 per cent in 2000 (Barth et al. 2013) to 44 per cent in 2016, which ranks it among the highest levels of government bank ownership in Latin America, after Uruguay (52 per cent), Costa Rica (49 per cent) and Brazil (47 per cent) (World Bank 2022).

Until recently, national and subnational public banks in Argentina did not provide financing for the WSS sector. The domestic public banking system is not well positioned to provide long-term infrastructure financing. Domestic commercial banks remain more focused on short-term loans and meeting the needs of households and small- to medium-sized enterprises (Buenos Aires Times 2021).

Nonetheless, thanks to the SDGs, domestic public banks have begun to show more interest in the WSS in the past few years. In 2019, Banco Nación, Banco Provincia, Banco Ciudad and BICE along with multiple private banks signed onto a protocol initiated by the Inter-American Development Bank (IDB) that outlines strategies to better incorporate sustainable financing in line with the UN SDGs, including SDG 6 (Banco Nación 2019). In 2022, Banco

Table 2.1 Public banks in Argentina

Public Bank Type	*Public Bank Names (year established)*
Municipal	Banco de la Ciudad de Buenos Aires (1888) Banco Municipal de Rosario (1896)
Provincial	Banco de la Provincia de Buenos Aires (1822) Banco de la Provincia de Córdoba (1873) Banco de Corrientes (1950) Banco de la Pampa (1959) Banco Provincia del Neuquén (1964) Banco Provincia de Tierra del Fuego (1983) Banco Rioja (1994) Nuevo Banco del Chaco (1994) Banco de Formosa (1995) Banco del Chubut (1996)
National	Banco de la Nación Argentina (1891) (Commercial bank) Banco de Inversión y Comercio Exterior (1992) (Development Bank) Banco Central de la República Argentina (1935) (Financial System Lead Bank)

Source: Authors' own data according to World Bank Global Financial Development Database released September 2022.

Nación created the ConectarT programme, which allocated US$41.5 million for residential loans of up to US$3300 to fund in-home connections to the water network. Still, this programme reflects the bank's role as primarily a consumer lender. Beyond this project, the role of domestic public banks in funding WSS in Argentina has remained relatively low.

Historically, the Argentine government has relied on loans from international bilateral and multilateral development banks to finance its development activities and has provided direct financing to public companies to subsidize their operations. For example, since AySA was established in 2006, transfers from the national government have typically composed around 50 per cent of AySA's financing, representing over US$5 billion of US$7.6 billion in total financing. As summarized in Figure 2.2, the rest has come from multilateral development banks. Total still-active loans issued since 2008 amount to US$1.7 billion from IDB, US$283 million from the Development Bank of Latin America and the Caribbean (CAF), US$235 million from the World Bank and US$80 million from the European Investment Bank (AySA 2020, 31–3). Financing for smaller projects, including the US$30 million loan from FONPLATA for the W/S+W programme, makes up less than 1 per cent of the total funding portfolio (AySA 2020, 9).

The national government remains responsible for these loans, meaning that it is responsible for paying the instalments and interest on the loans. These costs are not borne by the water operator or its users.

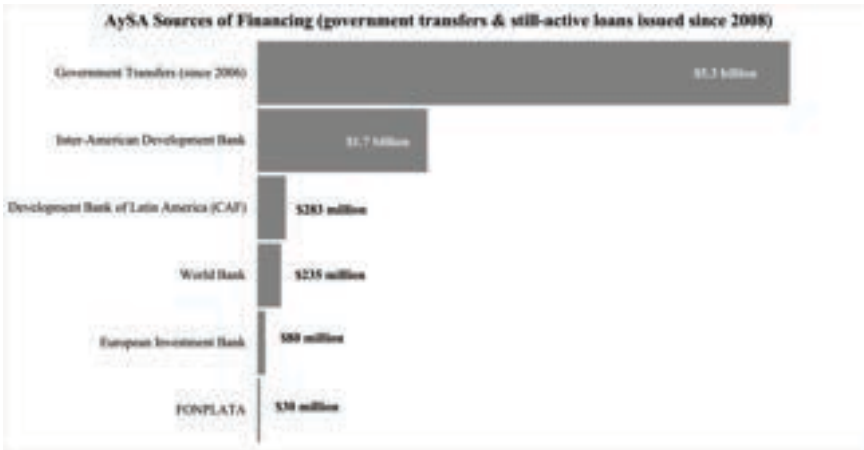

Figure 2.2 AySA funding (total loans and transfers), 2008–20.

Source: AySA (2020).

Río de la Plata Basin Financial Development Fund (FONPLATA)

The origin of FONPLATA dates back to the Act of Santa Cruz de la Sierra signed in 1968, which initiated the process of integration and coordination to identify the needs of the La Plata Basin's area of influence. A year later, in 1969, the First Extraordinary Meeting of the Foreign Ministers of Argentina, Bolivia, Brazil, Paraguay and Uruguay was held, and the Treaty of the La Plata Basin was signed with the objective of joining efforts to promote economic development in the sub-region. Within this framework, the Financial Fund for the Development of the La Plata Basin, FONPLATA, was created in 1971. In 1977, it officially started its operations, establishing its headquarters in Sucre, Bolivia (FONPLATA website).[2]

In the initial decades of its operations, FONPLATA focused its lending on large infrastructure projects (interview 1). As described in Figure 2.3, physical infrastructure such as transportation and housing infrastructure comprises the vast majority of its loan portfolio, and the percentage of this part of the loan portfolio has increased in the past decade. However, in terms of amounts of financing (but not as overall percentage), activity in the productive and socio-economic development has also increased. From 2014 to 2022, annual investment activity in these two sectors doubled from $211 million to $422 million, with consistent increases occurring year over year. In 2022, this investment in productive and socio-economic development can be further broken down into lending to health and education (8 per cent), financial services (5 per cent), WSS (5 per cent) and environment

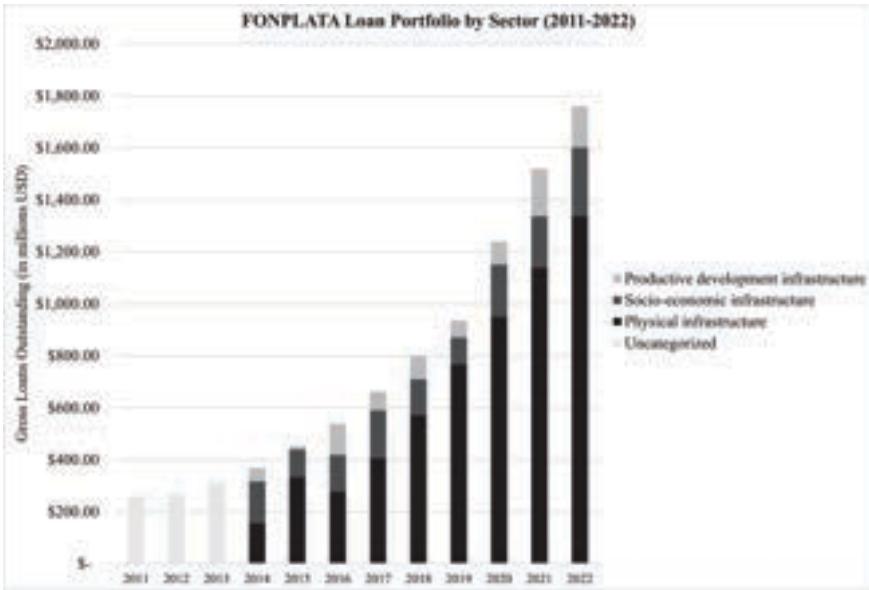

Figure 2.3 FONPLATA loan portfolio by sector, 2011–22.

Source: FONPLATA's 2015 and 2021 Annual Reports.

(2 per cent), among others (see Figure 2.4). Over this same time period, the average size of loans in these sectors fluctuated between US$25 million and US$42 million.

FONPLATA's steady focus on socio-economic lending in recent years has been facilitated by internal institutional reforms, a response to changes in the domestic political–economic demands of its member countries and the broader global context of multilateral development banks and international financial institutions. FONPLATA created the Executive President position in 2012, which gave the bank clearer leadership (interview 1). Since then, its overall loan portfolio grew in size (between 15 and 20 per cent) year over year, aided by prudential management, successful project development and a US$75 million credit from CAF.[3] In 2016, FONPLATA received its first international credit ratings: A2 by Moody's and A- by Standard & Poor's (FONPLATA website). These internal institutional changes and growing confidence of the member countries generated more loan capacity, which allowed FONPLATA to provide more financing towards these other socio-economic sectors in a sort of "virtuous circle" (interview 1).

FONPLATA has also changed its orientation as member governments have sought to incorporate the SDGs into domestic policy (interview 1). FONPLATA works continuously with the bank's member countries to identify financing needs and priorities. The specific way the domestic financing

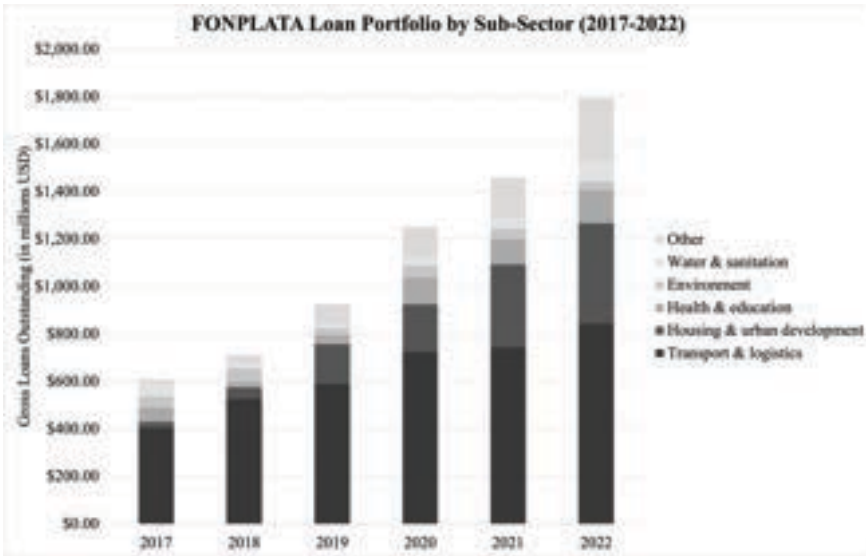

Figure 2.4 FONPLATA loan portfolio by sub-sector, 2017–22.

Source: FONPLATA Annual Reports from 2014 to 2021.

needs of each country affect FONPLATA's lending varies by country as it works with different government actors in each country (for example, in Brazil, it works with municipalities, in Argentina, it works with provincial and national governments). As one informant put it:

> The demands come from the [member] countries; therefore, the bank's priorities come from the [member] countries. The bank works daily with the actors in each country to find out what their demands are, but it prioritizes each country's investments. Once that investment is prioritized, the bank analyzes it and then implements it. (Interview 3)

Finally, FONPLATA's lending activity is also influenced by commitments it makes as part of multilateral initiatives and from other lenders. In 2021, FONPLATA signed a joint declaration committing to finance SDG 6 as part of the Water Finance Coalition within Finance in Common, a global network of public development banks (Finance in Common 2021). A representative with FONPLATA noted that the bank hopes to gain reputational benefits by emulating other regional or multinational banks in supporting sustainable development measures, as well as avoid being accused of greenwashing (interview 1). Additional external pressures have come from the (mostly European) development banks that invest in FONPLATA, which have further encouraged it to categorize their loans in terms of the SDGs. From the

perspective of FONPLATA managers, the W/S+W loan to AySA corresponds well with this new orientation since it aims to achieve goals related to water and sanitation (SDG 6) as well as gender equality (SDG 5) and decent work (SDG 8) (interview 1).

One FONPLATA representative further pointed out that the loan not only helps fulfil their goal to incorporate the SDGs into its lending, but it helps them carve out a specialist niche in the financial ecosystem:

> Basically, we feel like sellers, and as sellers we have a lot of products that are instrumental to our business…. If we were a seller of just one project, [countries] would say 'we already have that product, we don't need more.' To have distinct projects lets us have more [loan] approvals… and so we're pushing forward this portfolio [of results-based disbursements] not just with AySA, but in general. (Interview 3)

Merging of interests: results-based lending

In Argentina, the national government solicits demands for financing from the different provinces, ministries and public companies, including AySA. The office of the Secretary of Strategic Affairs (SSA) prioritizes the demands and decides which lender to approach depending on the amount and terms of the financing needed (interviews 3, 4). Since FONPLATA only offers relatively small loans not exceeding US$40 million, the SSA identified that it would be a suitable lender to approach to finance AySA's W/S+W programmes (interview 6). Other multilateral development banks and international financial institutions involved in the water and sanitation sector, such as the World Bank, CAF and IDB offer loans starting at much larger amounts.

Originally, AySA and FONPLATA proposed a type of typical works-based contractual agreement that would involve disbursement of funds upon receipt of "certificates of works completion." These certificates are commonly used in contracts governing large infrastructure projects, such as building a bridge (interview 6). Once the work is completed, the contractor issues a certificate. As the negotiation between AySA and FONPLATA progressed, however, it became apparent that such an approach would not work given the complexity involved with the number and nature of the different contractors (small cooperatives) as well as the socio-economic goals of the project which extend beyond bricks and mortar—i.e., job creation.

AySA's W/S+W programmes involve multiple actors with diverse competencies involved at different stages in the execution (see Figure 2.5). These programmes require coordination between three different sets of actors: the water operator (AySA), which designs the project and provides the main financing and technical supervision for the projects; the neighbourhood cooperatives, which provide the labour for constructing the networks; and the municipalities, which are in charge of providing some material inputs and carrying out technical management. Other government agencies that provide

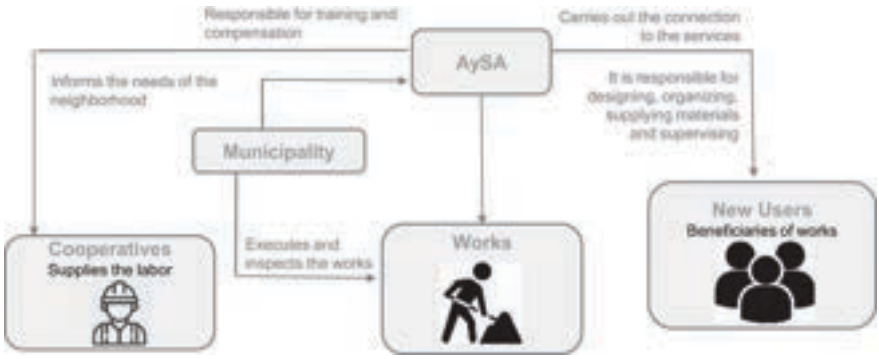

Figure 2.5 Actors involved in the W/S+W programmes.

Source: Adapted from AySA (2020).

technical and legal assistance are involved as well. Since each entity has its own rules for operating and systems for reporting, a number of administrative challenges had to be overcome in the setting the terms of the loan.

FONPLATA offered to change the modality for loan disbursements to reflect the socio-economic goals of the project. This capacity for change on the part of FONPLATA expresses what Marois (2022b) defines as part of the dynamic theory of public banks, recognizing the need to rethink public banks as changing and contested entities within the public spheres of the states. As a representative with AySA put it:

> We started the negotiation as a traditional loan for works, and in the middle of the negotiation the issue of the need to hire worker cooperatives arose. It would be difficult for the cooperatives to pass the bank's institutional evaluation, so they offered the possibility of changing course.
>
> (Interview 6)

Luckily, it was not FONPLATA's first experience negotiating the terms of a results-based loan. It was previously involved in a project that involved numerous worker cooperatives in Bolivia. Drawing from this experience, FONPLATA proposed a similar arrangement where the executing agency (in this case, AySA) would make agreements with municipalities, which in turn would be put in charge of the contracts with the cooperatives.

The partnership is based on a clear division of responsibilities. AySA is responsible for overseeing the local procurements needed to execute the W/S+W programmes, while FONPLATA focuses controlling and measuring the project results. FONPLATA agreed not to interfere with the procurement processes involving the municipalities and the worker cooperatives, although normally contractors would be subject to their evaluation procedures.

Table 2.2 Targets, amounts and expected timing for each tranche of disbursement

		PROJECT MONTH (ESTIMATED)				
Indicator measurement	–	*5*	12	18	24	36
Disbursements[a]	–	7	14	20	26	36
INDICATOR	*BASELINE*	*TRANCHE OF DISBURSEMENT*				
		1	*2*	*3*	*4*	*5*
		INTERMEDIATE TARGET VALUE				*TARGET VALUE*
Executed sewerage connections	**0**	2500	11,500	18,000	26,000	41,287
Available sewerage connections	**0**	0	4000	13,000	19,000	41,287
Executed connections to water mains	**0**	1500	8500	14,000	20,000	31,319
Actual connections to water pipes	**0**	0	3000	10,000	16,000	31,319
Employment generation (50% women[b])	**0**	600	920	1820	1820	1820
AMOUNT JUSTIFICATION / DISBURSEMENT	-	**20%**	**20%**	**20%**	**20%**	**20%**

Source: FONPLATA (2020b) Loan Contract ARG-47/2020. Appendix 1.

Notes:

[a] Up to 60 days may elapse between the measurement and the execution of the respective disbursement, as the time required for the issuance and distribution of the measurement report, as well as for the administrative processing of the disbursement.

[b] 50% will be required only for the formation of new cooperatives.

A representative from FONPLATA stressed that their intention was to try to facilitate the continuity of AySA's W/S+W programmes rather than to impose a set of new requirements: "We embarked together to give continuity to something that [AySA] was already doing and that it was doing very well" (interview 3).

Negotiations took several months, in part due to the complexity of the deal but also delays related to the onset of the COVID-19 pandemic in March 2020. As another FONPLATA representative involved in the negotiations recalls, one of the most difficult aspects of the negotiations was deciding what to include in the results matrix (Tables 2.2 and 2.3). The US$30 million loan was to be distributed in five equal disbursements over a term of 36 months. These disbursements are tied to targets for water connections, sewer connections and jobs. Given the fact that AySA was already working with a number of cooperatives in some of the municipalities, only newly formed

Table 2.3 Programme results matrix (units)

INDICATOR	*BASELINE*	*GOAL*	*VERIFICATION MEANS*
Increase available sewerage connections	0	41,287	Measurement
Increase effective connections to the water network	0	31,319	Institution
Employment generation	0	1820	Independent

Source: FONPLATA (2020b) Loan Contract. ARG-47/2020 Appendix 1.

cooperatives are expected to meet the gender equality target for hiring (50 per cent of workers are to be women) (interview 1).

The FONPLATA loan: improving access to WSS, creating jobs

The FONPLATA loan provides financing to the department within AySA responsible for the execution of the W/S+W programmes, the Community Development Department (Dirección de Desarrollo de la Comunidad, or CDD). In addition to the US$30 million loan, AySA has contributed another US$10 million of its own resources for a total of US$40 million allocated to further develop these programmes. The CDD is relatively small (90 out of 8000 employees at AySA), but it has grown substantially in recent years in terms of its visibility and budget (interview 6). The CDD is responsible for the operational part of the W/S+W programmes while the Economic and Financial Department handles the administrative management of the loan.

The loan ultimately benefits 16 of the 26 districts located mainly in the southern and western areas of the company's current concession area. These municipalities include: Almirante Brown, Avellaneda, Esteban Echeverría, Escobar, Ezeiza, Florencio Varela, La Matanza, Lomas de Zamora, Merlo Morón, Pilar, Quilmes, San Martín, San Miguel, Tigre and Tres de Febrero. The specific neighbourhoods targeted through these programmes were identified in the last company's Improvement, Operation, Expansion and Maintenance Plan (IOEMP 2019–23). This plan is updated every five years and defines AySA's expansion policy according to technical feasibility criteria determined by proximity of the network to the area served and the availability of a main water supply.

These municipalities hire the local worker cooperatives for the execution of the secondary networks. The cooperatives are formed by neighbours who are beneficiaries of social plans such as Argentina Works (Argentina Trabaja). These cooperatives must be composed of unemployed or informal employment residents of the beneficiary communities. An AySA representative within the CDD described this process in more detail:

> AySA contributes through the technical feasibility, the project, the social-territorial approach work, the works inspection, the line materials, that is, the materials that are typical of the network.... Under this agreement, the municipality finances the cooperative's labour, civil works materials, simple materials (sand, cement) and all the cooperative's equipment. We do not assume that the cooperative, which is part of the informal labour sector, has the equipment necessary to carry out these works, so everything needed to carry out this work is financed. If it is the first time a cooperative is doing this work, training and other miscellaneous expenses necessary for the execution of the work are paid for.
>
> (Interview 6)

This phase of the W/S+W programme aims to expand 187 secondary networks, 103 for sewers and 84 for water, in densely populated neighbourhoods. The aim is to create more than 31,000 new drinking water connections and 41,000 new sewage connections. Overall, the project is expected to benefit more than 380,000 inhabitants and generate more than 1800 direct jobs within these communities.

By virtue of implementing the W/S+W programmes, the programmes primarily benefit vulnerable neighbourhoods (especially slums and settlements) where poverty, indigence, unemployment and the COVID-19 pandemic-related WSS access concerns have grown in recent years. Thus, the stated primary goal of the loan is "to contribute to improve the quality of life of the inhabitants of vulnerable populations through access to drinking water and sanitation services, promoting socio-economic development and favouring environmental care" (FONPLATA 2020a).

Reaching the "last mile" in water supply and sanitation

Despite the expansion of the secondary networks, the fact that an area has service coverage does not mean that individual households connect to the network, a problem known as the "last mile" (Tobías & Catenazzi 2022). Intra-domiciliary connections continue to be the responsibility of the household. To expand access to safe water supply, in 2020, some of the W+W plans began to include the installation of a water tap inside the lot but outside the house. But there is no equivalent to a household connection for sanitation services. Households without connections to the formal sanitation network continue to use unsafe methods for sewage, including pit latrines or open defecation, which contribute to environmental contamination and create public health problems.

Building on the experience with FONPLATA and the results-based loan, the national government decided to seek additional external financing to support household connections to water and sewage in the areas where secondary networks were expanded. In 2021, the World Bank approved a US$300 million loan for the Water Supply and Sanitation with a Focus on

Vulnerable Areas Program, with a grant of US$49 million for payment for results (World Bank, n.d.), for a total of US$349 million. The programme is structured around three key results areas. First, the programme aims to expand water supply and sanitation services with a focus on vulnerable areas in selected municipalities of peri-urban Buenos Aires. This includes the intra-household connections managed by the Community Development Department for a total of US$30 million from the total amount. Second, it aims to improve the commercial and operational efficiency of AySA through the design and implementation of an efficiency improvement action plan. Third, it aims to increase AySA's capacity to respond to water supply and sanitation emergency needs, such as COVID-19.

With these two loans from FONPLATA and the World Bank, AySA was able to more fully address the problem of low rates of WSS connections. In fact, before the World Bank loan came out, progress had already been made in this area, particularly in water, thanks to the installation of household taps (interview 6). Between 2020 and 2022, the W/S+W programmes had achieved the 1820 jobs agreed to the results matrix and had made progress in the implementation of 30,000 drinking water connections and 41,000 sewage connections. It is important to note that although both loans (FONPLATA and World Bank) are aimed at advancing the objectives of the CDD in terms of expanding real water and sanitation coverage for the inhabitants of vulnerable neighbourhoods, both programmes have different areas of intervention (neighbourhoods) and different goals. In the case of the World Bank's performance-based loan, the priority is to increase the number of connections in neighbourhoods that already have secondary networks; that is, to solve the gap between existing service and connection. This second loan aims to fill service gaps in areas where the secondary network was installed thanks to the FONPLATA loan, but many households have not yet connected. On the other hand, in the FONPLATA loan, the focus is on advancing with works and extending networks through the work in the W/S+W programmes. Thus, it is possible to note two different indicators for each of the loans: one is connections executed (which is the one used by the FONPLATA loan) and refers to works carried out; the other is connections in service, which is the one targeted by the World Bank with the intra-household connection work.

Despite the progress achieved through the W/S+W programmes, these programmes alone will not achieve universal service provision in AySA's concession area until there is a further expansion of the core network. In order to meet the technical criteria established by the FONPLATA loan, the neighbourhood must be within the proximity of the existing core network, which remains limited to date. As a result, only the neighbourhoods closest to existing water and sewage networks have been included in the current expansion plans. To reach more distant and peripheral areas, AySA must increase the capacity of the core network by expanding existing water treatment plants and by laying down more master pipes to transfer water

from the plant to new localities. This expansion will require large-scale investment.

The COVID-19 sanitary emergency and social and political pressure have led to the prioritization of improving access in neighbourhoods that do not yet meet the established technical criteria, which remain outside the scope of the FONPLATA loan. In some of these neighbourhoods, AySA is drilling wells to extract underground water sources and, in some cases, mixing it with surface water, despite the fact that the water quality is compromised mainly by nitrates and nitrites.

AySA has planned some expansion the capacity of the core network as part of its 2019–23 Improvement, Operation, Expansion and Maintenance Plan. It also continues to seek financing from international lenders, including from private sources. For example, in 2018, AySA was successful in obtaining a bond from private international investors amounting to $500 million and with a five-year term (OECD 2019; AySA 2018b).

Conclusion

Our analysis of the FONPLATA loan to AySA for the implementation of the W/S+W programmes yields three key lessons for discussion on public banks and public water. First, FONPLATA's results-based loan for W/S+W programmes allows the bank to be flexible enough to adapt to the needs and characteristics of territorial policies—in this case, the goals of the Argentine government in the WSS sector—which, in addition to service expansion objectives, includes social goals such as employment generation. The results-based model is what allowed the bank to overcome bureaucratic and administrative barriers that in another context would have made loan execution unfeasible. This is mainly because in traditional international loans, the lenders need work certificates from various locations where projects will be executed to finance the works. Obtaining this documentation is complex due to the nature of the W/S+W programmes, involving multiple actors and contractual situations. In the case of this project, AySA supervises the works, and the municipalities are responsible for hiring the cooperatives. In this context, the choice of the performance-based lending modality makes it possible to avoid these administrative steps and focus specifically on compliance and disbursement indicators. In turn, the definition of results-based lending served as a precedent for other multilateral lending agencies such as between the World Bank and AySA to enable this type of loan modality within their loan portfolios.

Second, the collaboration between FONPLATA and AySA to develop a loan that could finance a multifaceted programme that emphasizes cooperative workforce development and gender equity alongside WSS expansion serves as an effective model of public–public collaboration and social–public partnerships. In this sense, AySA's loan with FONPLATA was a key precedent for other lending agencies—such as the World Bank—to include this type

of results-based lending in the W/S+W programme. Moreover, the multifaceted nature of the programme advances multiple socio-economic outcomes that go beyond economic efficiency, incorporating meaningful social impacts within the communities served. This allowed FONPLATA to link the loan to multiple SDGs while the project itself accords with numerous "metrics that matter" that are worthy of emulation in other projects that aim to universalize WSS (Marois et al. 2023, 21; Marois 2022a).

Third, details matter. While multilateral banks typically prioritize funding extensive infrastructure projects aimed at enhancing the technical capacity of water and sanitation systems—such as water treatment plants, effluent treatment plants or large main sewers—smaller yet crucial undertakings vital for the efficient functioning of the system, such as connections or secondary networks, often depend on the financial capabilities of service providers at best, or the users themselves. Consequently, this scenario frequently results in significant investments not translating into a commensurate expansion of household network coverage. The resulted-based lending collaboration between FONPLATA and AySA serves as an illustrative example of how public financing can serve as a valuable, dynamic and compelling tool in mitigating disparities in the system's last mile.

Ultimately, through both the nature of the public–public and social–public partnerships and the focus on impact, the FONPLATA loan offers a water financing model that is a departure from typical lending arrangements with large multilateral lenders such as the World Bank and IMF. The case further highlights the potential for regional public banks to serve as market leaders while also more closely reflecting the national interests, which are themselves informed by local need. To the extent that multilateral lenders continue to follow suit, this results-based loan could help recentre the value of impact-oriented public–public partnerships as an approach to water financing and meeting SDG 6.

However, it is important to highlight some potential challenges associated with the results-based lending approach that emerge from the case analyzed, and that are necessary to consider in view of new possibilities for public financing. One major concern is the need to align the coherence of the results frameworks and integrate the disbursement-linked indicators with programme action plans (Gelb & Hashmi 2014). This alignment is crucial to ensure a clearer connection with developmental results and the long-term objectives of the supported government programmes. Besides, while results-based programmes encourage the achievement of ambitious goals, which can lead to a greater developmental impact, the stringent conditionality of disbursements can introduce significant financial uncertainty for implementing agencies. This uncertainty can test their capacity, particularly in contexts of political instability, economic fluctuations or environmental challenges. Additionally, the administrative burden associated with monitoring, reporting and verifying results can be considerable, potentially diverting resources from the actual delivery of services.

Notes

1 A provincial company, Aguas Bonaerenses S.A., covers most of the rest of the province.
2 FONPLATA. www.fonplata.org/es/institucional/nuestra-historia
3 Fonplata – CAF otorga línea de crédito a FONPLATA por USD. 75 millones, lo que permitirá el fortalecimiento institucional www.fonplata.org/es/noticias/09-12-2014/caf-otorga-linea-de-credito-fonplata-por-usd-75-millones-lo-que-permitira-el-fortalecimiento-institucional

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Appendix: Interviews (ordered by the date of interview)

Interview	*Person*	*Role*	*Date*
1	(Name withheld)	Chief of Staff, Responsible for Projects in Argentina and Specialist in monitoring and evaluation, FONPLATA (regional representative)	July 7, 2022
2	(Name withheld)	Urban Infrastructure, Water and Sanitation Projects Directorate, Development Bank of Latin America and the Caribbean (CAF)	July 8, 2022
3	(Name withheld)	Specialist in monitoring and evaluation, FONPLATA	July 25, 2022

Interview	*Person*	*Role*	*Date*
4	(Name withheld)	National Director of Financing with International Organizations, Strategic Affairs Secretariat (National Jurisdiction)	July 28, 2022
5	(Name withheld)	Expert of the Qualitative Department of Drinking Water plant, AySA	July 29, 2022
6	(Name withheld)	Director of the Community Development Department, AySA	August 4, 2022
7	(Name withheld)	Expert of the Economy Department, AySA	August 24, 2022
8	(Name withheld)	Expert of Banco Provincia	September 8, 2022
9	(Name withheld)	Water expert and ex-representative of regulatory agency	February 2, 2023

3 NABARD and the pro-public financing of water in India

Pranjal Deekshit

There is growing interest in revisiting the role of public banks in public water provisioning (Crespi Reghizzi et al. 2022; Marois & McDonald 2022). This growing interest can be attributed to the partial retreat of neoliberal water provisioning strategies across the world and the risk-aversive behaviour of private and market-based financial institutions in financing water supply infrastructure (Head 2006; Alaerts 2019). In developing countries, market-oriented financial reforms since the 1990s have not been successful in attracting private investors to build or extend infrastructural facilities for providing public water services in ways that are socially equitable or affordable. In the context of uncertainties of climate change, emerging water scarcity, and barriers to the Sustainable Development Goals (SDGs), the massive needs for effective and inclusive infrastructural financing require an alternative. According to a World Health Organization assessment in 2022, nearly 3.5 billion people lack safely managed sanitation services, and 2.2 billion people do not have access to potable water across the globe (UNICEF & WHO 2023). SDG 6 on Clean Water and Sanitation requires a substantial amount of funding that the private sector will not be able—or willing—to meet. Public banks are seen as a stronger and more viable option to meet investment requirements (McDonald et al. 2021; Marois & McDonald 2023).

This article presents the case of India's National Bank for Agriculture and Rural Development (NABARD)—a public development bank (PDB) that has been financing public water supply infrastructure for more than two decades in India. Contrary to conventional debates that emphasize financial prudence through cost recovery, the case of NABARD shows a unique way of respecting the social needs of a developing country like India. The article argues that NABARD is an important example of a public bank playing a crucial role in extending pro-public public water services in ways that align with SDG 6. The article also illustrates the potential for public–public collaborations (PPCs) as viable alternatives to public–private partnerships (PPPs).

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The paper begins with an overview of public banks and their role in financing public water infrastructure. The second section provides an overview of water infrastructure financing in India. The third section describes the emergence of NABARD as a financer for water infrastructure, elaborating on the drivers and key policy changes that directed NABARD to enter the sector. This includes a financial profile of NABARD and the share of water infrastructure in overall lending. The fourth section describes the key features of the Mission *Bhagiratha,* comparing NABARD with other banks and consortia. The final section reflects on public bank collaboration in water provisioning. While Mission *Bhagiratha* has not been without challenges, the experience of NABARD funding public water and sanitation infrastructure provides important lessons for those seeking pro-public financing options.

The article is based on extensive secondary research as well as primary data collection. The author also conducted 15 interviews with NABARD officials in Mumbai and Hyderabad, officials in the Department of Drinking Water Supply of the Telangana government and various academics and policy researchers. This information was supplemented with an extensive literature review to cover academic material as well as formal and informal documents, including websites of public departments and NABARD, government orders, annual reports, data shared by department of Mission *Bhagiratha* and newspaper articles. The article has also benefitted from two earlier rounds of exploratory field work by the author on Mission *Bhagiratha*, first in May 2019 and the second in December 2021.

Public development banks and public water finance

Public banks are financial institutions that are majority-owned by the state or another public entity or are governed under public law or by public authorities and function according to a binding public mandate (or some combination of these characteristics) (Marois 2021). PDBs are a specific type of public bank that often focus on infrastructure and large-scale projects, playing a major role in development finance globally for decades (Marois 2024). In the context of climate change, the potential role of PDBs has undergone a renaissance (Griffith-Jones et al. 2023). PDBs are seen as critical in promoting resilience, both environmental and economic (Bilal 2021).

Public infrastructure projects at the municipal and regional scales have historically been beneficiaries of PDB financing (Marois 2021). Juuti et al. (2022) highlight the simple but effective contribution of public banks in Nordic countries. Schwartz and Marois (2022) describe the role that the Dutch "WaterBank" has historically played in financing water infrastructures. Public banks have also played an important role in financing public water operators in the context of the re-municipalization of water services, which appears to be a growing trend reversing decades of privatization (Butzbach & Spronk 2022).

PDBs are not inherently better at financing public water than private banks, but public banks do have real potential to operate differently by being policy-driven rather than profit-driven institutions (Clifton et al. 2021; Mertens et al. 2021; Marois 2024). In the economics literature, however, the potential of public banks has not always been properly accounted for. Mainstream economists have systematically argued that public banks are inherently less efficient than private banks (La Porta et al. 2002; Barth et al. 2008; Marcelin & Mathur 2015). More heterodox economists tend to assign contrasting but inherently positive characteristics to publicly owned banks (Andrianova et al. 2012; Marshall & Rochon 2019). In both approaches, public ownership tends to signify specific, if contrasting, economic qualities inherent to being public (Marois 2022). By contrast, political economy approaches are instead adopting a "dynamic" interpretation of public banks (Marois 2022; McBride 2022; McArthur 2024; Mikheeva 2024). In a dynamic approach, there is nothing inherently better or worse about being publicly owned. What is more important is to understand the socio-economic and historical forces shaping how public banks function, why and in whose benefit. This allows for more context-specific and time-bounded explanations of public bank effectiveness.

Water infrastructure financing in India: an overview

In the post-independence era, the Indian government adopted a "welfare state" model, prioritizing social policy objectives across different economic sectors (Cullet & Gupta 2009). This approach shaped post-independence pro-public policies and institutional structures in the drinking water sector, which focused on three interrelated objectives: equal access, affordability and public control over water provisioning (Muralidhar 2006; Government of India [GOI] 1952).

The phrase "equal access" means that there would be no discrimination in access to water, and every citizen would get water for drinking and domestic purposes. The objective of equal access in adequate quantity and with appropriate quality was reflected in government five-year plans (GOI 1970; GOI 1985). The "affordability" objective emphasizes that access to water should not be denied due to the lack of purchasing power. The "public control" objective, which defined the "public" as the people or their representatives, was seen as instrumental to ensure that the other goals related to the availability of adequate and safe drinking water for all sections of the population in a reliable and sustainable manner would be achieved (Cullet 2012).

The financing of water supply infrastructure in India was dominated by substantial grants by the central government in the initial post-independence period of the 1950s. The main sources of finance included capital and maintenance grants as well as soft loans from the central fund to the state governments and the Urban Local Bodies. Financing was provided to meet the dual objectives of increasing coverage of water systems to connect urban households to water taps and keeping tariffs low (GOI 1952). However, due

to the growing needs of a rapidly increasing urban and rural population, competition over budgetary allocation increased, and funds were spread too thinly across contending water projects in various cities. Financing fell far short of requirements.

Water sector policies started changing gradually after 1975 (GOI 1985). State governments established special institutions, such as the Water Supply and Sewerage Boards (WSSBs), which were empowered to raise funds for building water infrastructure (GOI 1985). The central government leveraged funds for the sector from major publicly owned financial institutions, such as the Life Insurance Corporation of India and the Housing and Urban Development Corporation. These funds, channelled through WSSBs and Public Health Engineering Departments, were used by Urban Local Bodies to finance the expansion of urban water infrastructure (Chatterjee 2003).

Despite these efforts, the situation of water supply was not very encouraging in the 1980s. Urbanization in India was rapidly increasing. This put tremendous pressure on both the existing water resources and the infrastructure that was providing water to the cities. The coverage of the potentially served urban population in India was continuously fluctuating due to the constant increase in population. Although by the year 1974, 83 per cent of the urban population was covered by the urban water supply systems, the number dropped to 78 per cent by the end of 1981 (GOI 1985). (The government uses "coverage" as a term to assess the potential of infrastructure to serve certain number of people, but it does not necessarily mean access to water supply.)

Two causal factors emerged as an explanation for this situation: one, the inadequate allocation of financial resources by the government; and two, the fast-paced and significant increase in demand for water in urban areas due to increasing urbanization. The Urban Local Bodies, Public Health Engineering Departments and WSSBs did not have adequate funds for maintenance and upkeep of the water systems that were built with funds from the Life Insurance Corporation of India and the Housing and Urban Development Corporation of India (Bagchi & Chattopadhyay 2004). As a result, in the span of a few years, most of these systems were in a state of abject disrepair, raising serious concerns over the sustainability of these systems. Further, unable to overcome these difficulties, the Urban Local Bodies could not pay back loans to WSSBs and Public Health Engineering Departments, who, in turn, defaulted on the loans (Comptroller and Auditor General of India 2012).

These loan defaults put serious question marks on the financial health and creditworthiness of the Urban Local Bodies, WSSBs and Public Health Engineering Departments. This would have severely restricted future possibilities of improvement. Although some urban consumers have found innovative ways to deal with this situation (such as self-provisioning or private provisioning), the most severely affected victims of this situation have been the poor, who have remained deprived access to affordable water. Data published by the planning commission in the 10th Five-Year Plan (2002–07)

states that only 70 per cent of urban households were connected to the networks (GOI 2002, 634).

These problems generated demand for reforms in the water sector, with a particular focus on financing the efficient functioning of water supply and sanitation (WSS) systems. Despite the dominant model of state-funded WSS systems, the argument for financially self-sufficient WSS systems was not new. Ten years following independence, the Indian government proposed loan-based financing to Urban Local Bodies to construct WSS systems capable of recovering the investments through revenues (that is, a cost-recovery model). At the end of the 6th Five-Year Plan (1980–85) the government concluded that:

> The poor quality of maintenance results mainly from the unwillingness of the local bodies to levy water rates and the inability of the State Governments to provide adequate non-plan grants for maintenance purposes. Urban water supply and sewerage schemes are highly capital intensive and there is a strong case for [cost] recovery from the beneficiaries, at least the interest and operation and maintenance charges to start with.
>
> (GOI 1980, paragraph 23.57)

Realizing on one hand the limitations in prioritizing adequate grant-in-aid for all urban areas for urban water systems and constraints arising out of Urban Local Bodies' unwillingness to recover the capital costs, the Government of India floated the idea of establishing an Urban Infrastructure Financing Corporation to meet the investment needs of the urban water systems of growing Indian cities at the end of the 7th Five-Year Plan (1985–90). But it never came to fruition. Instead, the government charged the Life Insurance Corporation of India (a public insurance company) and the Housing Development Corporation of India (a Government of India undertaking for public housing programmes) with the responsibility of financing the construction of urban water systems. However, the increasing number of non-performing assets (NPAs) of these two public financers hampered their ability to provide sufficient financing.

The drafting and declaration of the first National Water Policy in 1987 enabled further reforms in the water sector. The National Water Policy mentioned the prioritized allocation of water for drinking purposes from the multipurpose water projects (that is, dams) but it also re-emphasized that water rates should not only convey the scarcity value of water but also cover the portion of fixed costs and annual operation and maintenance charges (GOI 1987). These developments prepared the ground for urban water reforms that were accelerated by India's decision to globalize and liberalize its economy in 1991.

In the 1990s, India began to adopt market-oriented neoliberal economic reforms and initiated their gradual rollout (Ahluwalia 2002). India's neoliberal transformation subsequently engulfed the infrastructural sector,

including WSS. Situated within the larger framework of neoliberal state and development strategies, the role of the state shifted from that of being "a provider of services" to "arbiter" and "facilitator" (Rufin et al. 2003). This shift can be traced through three changes: disinvestment policies and a shrinking public sector; adjusting sectoral policies for economic efficiency and market responsiveness; and simplifying the bureaucratic and legal constraints to encourage foreign direct and private investment (Grindle & Thomas 1989; Pradella & Marois 2015).

A direct reflection of neoliberal market-oriented economic reforms in the water sector was the search for private financing through the promotion of PPPs. However, knowing that the majority of the rural population in India would still largely depend on non-cash exchanges, PPPs were aimed towards the urban water sector. The Indian government, through elaborate institutional restructuring programmes, incentive policies and seed funding, attempted to promote PPPs across India. However, of the 1350 PPPs identified by the Indian government during last two-and-a-half decades, the urban water supply and sewerage projects count for only 53, or a mere 3.9 per cent (Deekshit & Wagle 2019). Out of these 53 projects, only a dozen or so were potentially viable and only one actually attracted any private funding at all. Eventually, all of the PPP water projects were withdrawn by the public and private bodies involved, either mutually, or through litigations, or due to resistance, both political and social (Deekshit 2019).

While PPPs collapsed, multilateral aid increased for the financing of water infrastructure in India. India has been the largest recipient of water-related official development aid (ODA), receiving approximately USD 275 million from 1990s to 2002 (Pacific Institute 2014), and a further USD 4.6 billion from 2002 to 2018 (OECD 2022). International financial institutions and development finance institutions such as the World Bank, the Asian Development Bank and the Japanese International Cooperation Agency had provided loans to Indian state-level governments for building and improving the water supply infrastructure across the country. Most of these loans are guaranteed by the central government and controlled by the Financial Restructuring and Budget Management Act of the respective subnational state government. The FRBM Act regulates the current and revenue account deficits of the state governments. The Act is part of wide-scale reforms meant to ensure financial austerity and it has put limits on the scale and volume of borrowings by the state governments in India.

India's NABARD and rural water finance

Despite the Indian government opening the doors for private investors and multilateral financers in the water sector, it also affirmed the role of public banks in national development finance. Following Independence in 1947, the Indian government nationalized 14 major private banks in India in 1969. Prior to this wave of nationalizations, the Indian government

had established the Industrial Finance Corporation of India in 1948, the Industrial Credit and Investment Corporation of India (ICICI) in 1955 and the Industrial Development Bank of India in 1964. Subsequently, the Indian government established additional specialized banks, such as a system of Regional Rural Banks to support rural development in 1975 (GOI n.d.) and the Small Industries Development Bank in 1990 to focus on micro-, small-, and medium-sized enterprises. Many state-level governments followed this pattern and began to open their own public banks. It is in this context that the Indian government established the NABARD in 1982 with a special agricultural and rural development mandate.

Marois (2021, 163–5) features NABARD as a public bank that has helped to definancialize development finance by adopting financial practices that slow and direct flows of finance towards the rural regions in India. The bank raises capital from domestic sources (thus eliminating foreign exchange rate risks) through domestic bonds, deposits from commercial banks and seed capital from government. It then lends money to governments primarily for rural agriculture and infrastructure projects in ways that hold capital in rural spaces in India.

Moreover, NABARD works as an inspection agency for cooperative and regional rural banks and plays a major role in building and disseminating development sector knowledge—of both developmental activities in rural areas as well as development financing in general. In addition to its role as a public financial institution, NABARD is also a public knowledge institution. These diverse institutional and policy functions reflect the unique characteristics of NABARD that qualitatively distance it from private, profit-maximizing "financialized" banking institutions, thus enabling it to potentially function in pro-public ways (see Table 3.1).

The Government of India directed NABARD to create a special instrument for lending in the WSS sector as a response to the United Nations declaration of the Water and Sanitation decade in the 1990s. While ODA financing kept increasing, flows could be unpredictable. NABARD launched the Rural Infrastructure Development Fund (RIDF) in 1995–6 (NABARD, n.d.-a) realizing that the rural economies would be slower to develop and require longer-term infrastructural financing. The RIDF targeted rural infrastructural projects that were already started by subnational state governments but were incomplete due to shortfalls in funding. The RIDF was seeded with approximately USD 570 million for lending in irrigation, soil conservation, watershed management and other forms of rural infrastructure. In the last 28 years, NABARD has cumulatively sanctioned the phenomenal amount of USD 60.48 billion under the RIDF through 28 tranches, of which USD 48 billion was disbursed by the end of March 2023.[1]

The RIDF has three categories of priority lending in rural infrastructure: agriculture and related sectors (such as irrigation or cold-storages, dairy projects, etc.); social sector, which includes the drinking water and sanitation projects undertaken by subnational (state) governments; and

Table 3.1 NABARD financials for 2019–23

	2023	*2022*	*2021*	*2020*	*2019*
	USD = 82.21 INR	*USD = 75.80 INR*	*USD = 73.50 INR*	*USD = 75.39 INR*	*USD = 69.17 INR*
Total assets (USD billions)	97.5	100.0	89.5	70.6	70.5
Return on Average Assets (ROAA) (%)	0.71	0.74	0.73	0.76	0.75
Total Income (USD millions)	651.9	670.4	587.7	511.9	486.4
Credit ratings (by CRISIL – A Standard and Poor's company)	Long-term rating: AAA (Stable) Short-term rating: A1+				
Number of employees	3205 (in 2023)				
Year of incorporation	1982				
Initial purpose of incorporation	Providing institutional credit to boost rural economy				
Current Mission/Mandate	Promote sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations, technology and institutional development for securing prosperity				
Type of Public Bank	Development Bank				
Ownership	Government of India				

Source: Fitch-Solutions, NABARD website, and CRISIL website.

rural connectivity sectors. The three sectors have differential proportions for lending. Agriculture, being the core focus of the bank, can receive loans of up to 95 per cent of eligible costs. Social sector projects including drinking water and sanitation are eligible for 85 per cent of the project costs. Projects in the rural connectivity category, which includes projects such as roads and bridges, receive up to 80 per cent of the costs. These criteria for northeastern states and hilly states in India are relaxed by 5 per cent under each of the categories. RIDF creates a substantial channel for financing water infrastructure in two ways: direct funding to the water and sanitation infrastructure and funding for water storage reservoirs for agricultural purposes, which indirectly serve as drinking water sources in situations of scarcity. By March 2016, NABARD had funded USD 3.07 billion worth of projects to various state governments in India for drinking water purposes (NABARD 2013, 2016).

NABARD has another significant lending arm, the NABARD Infrastructure Development Assistance (NIDA) initiative, which was created in 2011 to provide additional financing for rural infrastructure projects (see Figure 3.1). The distinctive feature of NIDA, as compared to RIDF, is the flexibility and customization of the terms and conditions of the loans as per the requirements of the borrowers, their risk profiles, and the nature of the projects. Loan

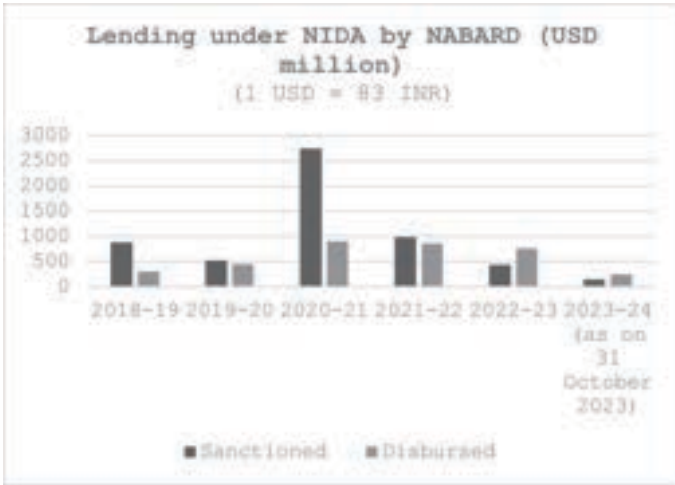

Figure 3.1 Loans disbursed under NIDA by NABARD.

Source: Compiled by author from NABARD Annual Reports from 2018 to 2024.

periods can be up to 25 years, including a moratorium of 2–4 years. Notably, interest rates for loans under NIDA are variable in nature, and it operates with two different interest policies. First, NIDA offers loans with floating interest rates that could change on an annual basis, which means higher risks (of gains or losses) for the borrower. Second, if the borrower wishes, NIDA can offer loans at fixed interest rates, which would be determined after a thorough risk assessment of the projects. Between 2010 and 2023, cumulative sanctioned and disbursed loans under NIDA stood at USD 9.61 billion and USD 5.21 billion, respectively. During COVID-19, the commitment of NABARD under NIDA was substantial, with a sanctioned amount of USD 3.1 billion (NABARD n.d.-b) against the background of pandemic-related economic instability and risks (see also McDonald et al. 2020). In terms of drinking water and sanitation projects, NIDA has financed projects worth USD 670.88 million to 2020–21.

By combining the amounts NABARD disbursed under RIDF (until 2015) with those under NIDA by 2021 for drinking water systems alone, NABARD provided USD 4.8 billion in water financing, which slightly surpasses the total USD 4.6 billion received via ODA. This highlights the important role that public banks play in public water provisioning (see Figure 3.2). Furthermore, under the RIDF, NABARD plays a significant role in supporting rural sanitation. To enhance efforts for the universalization of sanitation, in 2014, the government of India launched a village sanitation and toilet construction scheme called the Clean India Campaign (Swachh

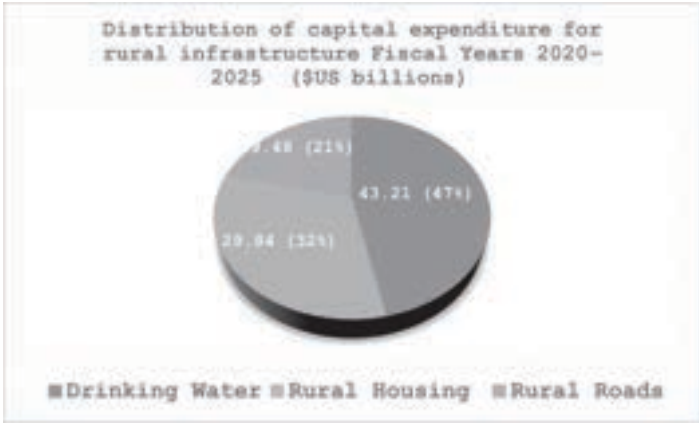

Figure 3.2 Distribution of capital expenditure for rural infrastructure Fiscal Years 2020–25.

Source: Reproduced and converted from NABARD Annual Report 2022–23.

Bharat Mission). NABARD sanctioned USD 2.04 billion for this campaign, of which USD 489.8 million was raised through "Government of India fully serviced bonds" in 2018–19 and 2019–20. This was in collaboration with a special purpose vehicle (SPV) established by the Government of India called the National Centre for Drinking Water, Sanitation & Quality (NABARD 2020, 81; 92). Further, to support the Open Defecation Free India mission, NABARD launched a pan-India sanitation literacy campaign, leveraging its reach in rural areas through its partner agencies.

NABARD not only directly lends to water and sanitation projects. It also on-lends to other banks to support their activities. In October 2020, NABARD introduced a special refinancing facility for other financial institutions including public and private banks, regional rural banks, small finance banks, Non-Banking Financial Companies and Micro-Finance Institutions against these financial institutions' water, sanitation and hygiene portfolios.[2] In 2021, NABARD issued USD 10.88 million to this facility. This facility is expected to most notably benefit Non-Banking Financial Companies and Micro-Finance Institutions (Bandyopadhyay 2021).

NABARD loans are secured through various steps. There are initial risk assessments of the projects and regular checks and balances such as progress monitoring of the funded projects through the "project monitoring committee". NABARD implements a policy of performance-based disbursement. After releasing an initial 20 per cent of the sanctioned loan, the next tranche of the loan is released after the initial money is spent. NABARD issues a repayment schedule and expects state-level governments to make budgetary provisions to ensure compliance to the repayment schedule. The most critical

aspect of this setup is that NABARD is legally empowered to request the Reserve Bank of India (India's central bank and regulatory authority for all banking services) to divert any lapsed repayments by state government back to NABARD. As the handbook on RIDF published by NABARD mentions:

> If any installment of repayment of the principal or payment of interest remains unpaid on the due date, NABARD may issue notice to the State Government calling for payment of the same and if still it is not paid within the period of 15 days after receipt of such notice, NABARD shall be entitled to issue a requisition to the Reserve Bank of India/Principal Banker to the State Government as the case may be for recovering the sums in default. This shall, however, be without prejudice to any other legal remedies available to NABARD.
>
> (NABARD 2021, 21)

This unique authority given to NABARD empowers it to maintain a low ratio of NPAs, between 0.27 and 0.32 per cent despite the fact that its business is conducted in many of the slowest-growing rural sectors of the Indian economy. This feature supports the strength and long-term sustainability of NABARD as a public financial institution, as well as its ability to lend to rural entities having higher risks. However, further research needs to explore whether the inability of state-level governments to default on NABARD loans may cause fiscal difficulties. That said, based on this arrangement, NABARD appears to be prepared to finance considerable amounts for drinking water projects in the near future. The projected requirements of capital expenditure for 2020–25 for drinking water is USD 48.97 billion.

As a powerful national-scale PDB, NABARD has been playing a strong role in India's development space. In recent years, its footprint in the water and sanitation sector has increased tremendously. NABARD not only funds the construction of piped water supply systems and development of water treatment plants but also supports the installation of hand pumps and bore wells. The bank has diversified from its core banking role in activities such as project planning and assistance, capacity building and training for sustainable water management, grant-in-aid support for innovations and pilot projects. Thus, NABARD's role in public drinking water infrastructure is comprehensive and multifaceted, encompassing funding, technical assistance, capacity building and policy advocacy. By addressing the critical issue of safe drinking water, NABARD helps to improve public health, enhance quality of life and support sustainable development in rural India.

Mission *Bhagiratha*: NABARD's support for drinking water in Telangana

Mission *Bhagiratha* is a drinking water scheme implemented between 2014 and 2019 by the newly formed subnational state of Telangana (established

in 2014). Mission *Bhagiratha* is one of the largest loans given by NABARD for drinking water, and in turn, one of the largest-scale projects of piped tap water, linking more than 4000 villages within a state-wide grid system.

Mission *Bhagiratha* has an ambitious goal to provide universal access to drinking water, which needs to be understood in the context of the politics of separation of the state of Telangana from the erstwhile state of Andhra Pradesh. Six decades after India's Independence, the region of Telangana had to cross tremendous hurdles to achieve statehood. The now 10-year-old state is the result of a strong student movement, political demands and lobbying and a national-scale struggle. Regional identity, caste politics and cultural distinctiveness were among the key reasons for the political struggle that ended in a successful decision in favour of Telangana.

The famous political slogan of the Telangana movement, "the *Neelu* (Water), *Nidhilu* (Funds), and *Niyamakalu* (Jobs)," provided a powerful narrative and appeal to the people of Telangana. The erstwhile state of Andhra Pradesh has a large belt of coastal region in which two major rivers of India drain, the river Godavari and river Krishna. Due to the historical development of irrigation in the delta regions of the Krishna and Godavari rivers, the coastal communities in this region have been economically better off, and hence socially and politically better off. The political dominance of the coastal communities, however, was perceived as discriminatory by the people that have been living in the drought-ridden plateau of Telangana. This gave rise to the struggle for independence built around the three key messages: coastal communities are taking away our water; coastal communities are taking away our public funds; there is a lack of jobs. Against this background, Telangana state was formed—and water provisioning emerged as a major indicator of the performance of the political party that came into power, the Telangana Rashtra Samiti (Ram 2007; Vaddiraju 2017; Vaageeshan & Chitrapu 2021).

While the political ramifications of the water struggles were intense, equally strong were the aspirations of development through irrigated agriculture and the improvement of quality of life through basic amenities. In response, the chief minister of Telangana declared three mega projects in water: Mission *Bhagiratha*, the *Kaleswaram* irrigation project and the *Kakatiya Mission* for rejuvenating water tanks (by desilting and increasing storage capacity). The latter two were focused on irrigation facilities, while the Mission *Bhagiratha* focused on creating drinking water infrastructure in order to supply potable water.

Mission *Bhagiratha* is a grand project for expanding access to drinking water supply aimed at covering every household in the entire state of Telangana. By sourcing water from two perennial rivers, Krishna and Godavari, the *Mission Bhagiratha* claims to be able to provide drinking water to 23,890 habitations for a population of 20.57 million people across the state. In addition, the piped water supply has connected 22,882 rural schools and 27,310 *Anganwadies* (pre-schools and elementary schools) in

rural areas. In terms of the scale and reach of the project, Mission *Bhagiratha* is one of the most ambitious rural development projects, and it requires major funding. This was an important challenge for the government of a newly formed state with few resources. Only the capital city of Hyderabad boasts any substantial industries and urban population for revenue generation. In this context, Telangana's political leadership decided to go for debt-based financing for development. NABARD played a substantial role.

It is important to recognize that while the financing of the *Bhagiratha* Mission emerges as a positive example of public banks financing public water in a developing country, ground-level implementation has been controversial for two reasons. First, despite the fact that the finances were almost entirely public (except from the private ICICI bank), the institutional mechanisms chosen to facilitate financial disbursal and to implement the scheme were friendly to private commercial firms. In particular, the engineering companies that were given the mandate to maintain the infrastructural components built by them for a period of five years after they were commissioned profited from this arrangement by charging high fees. Second, the scheme did not deliver on its promise to bring water to every household. Several newspapers have reported that the taps are running dry in the villages (Srinivas 2024), forcing villagers to buy drinking water from local vendors (Satheesh 2019). Critical water resource experts from the state label this scheme an example of megalomaniac ideas and a waste of money, but also highlight that the state is not delivering the promise of potable water (Menon 2018).

Nevertheless, the critiques do not undermine NABARD's commitment to financing public water infrastructure. NABARD loans have facilitated some important and positive changes in the institutional structure in Telangana government. As a preliminary step towards financial prudence, the implementation of the Mission *Bhagiratha* entailed reforms aiming at institutional ringfencing. The Telangana state government established a SPV called Telangana Drinking Water Supply Corporation Limited (TDWSCL) to mobilize the finance needed for the drinking water programme. The loans were routed through the TDWSCL, including those from NABARD and the other banks.

The TDWSCL raised a large amount of finance for Mission *Bhagiratha*, amounting to USD 3.34 billion from 19 different banks, out of which 18 are public banks (see Table 3.2).[3] Only the ICICI is a private bank. NABARD alone contributed USD 548 million, which is approximately one fifth of the total finance sought for Mission *Bhagiratha*. While NABARD contributes substantially to water infrastructure, its commitment encouraged the other public sector banks to come forward and support the cause of public water provisioning.

Since NABARD lent money from both of its loan instruments, the loan terms are different for the chunks of loans under RIDF and NIDA. As discussed, RIDF has a standard terms of reference in which the NABARD disburses money on a "reimbursement" basis, that is, after spending the initial grant.

Table 3.2 **Contributions of different public banks in financing Mission Bhagiratha**

Sr. No.	*Financial Institution*	*Interest Rate (p.a.)*	*Loan component Approved (in USD million)*	*Amount released*
			1 USD = 83.31 Rupees	
1	NABARD Phase 1	Loans	183.24	183.24
2	NABARD Phase 2	under	127.71	126.26
3	NABARD Phase 3	NIDA	72.96	73.22
4	NABARD Phase 4	from	29.02	29.87
5	NABARD Phase 4 (round 2)	9.5% to	60.60	58.66
6	NABARD Phase 5	10%	74.88	64.02
7	UCO Bank	8.95%	39.25	36.01
8	Bank of Baroda Consortium 1 [Members: Bank of Baroda, Indian Bank, Indian Overseas Bank, Union Bank of India]	9.2% and 10%	74.88	64.02
9	Bank of Baroda consortium – 2		232.87	186.59
10	Bank of Baroda – Phase 1		25.52	25.52
11	Bank of Baroda – Phase 2		75.86	63.73
12	Bank of Baroda – Phase 3		27.37	24.01
13	HUDCO Phase 1	10.15%	48.88	46.81
14	HUDCO Phase 2		300.08	300.08
15	Consortium led by Andhra Bank (Tranche) 1 [Andhra Bank, Allahabad Bank, Indian Bank, Syndicate Bank, Bank of Baroda, Punjab and Sind Bank, Bank of Maharashtra, and Oriental Bank of Commerce]	10%	270.08	265.87
16	Andhra Bank Consortium (Tranche) 2		675.19	463.05
17	Corporation Bank – Term loan-2	9.95% &	181.25	142.84
18	Corporation Bank – Term loan-1	10%	146.92	116.16
19	Canara Bank – 1 (9.20%)	9.2% &	146.92	116.16
20	Canara Bank – 2	10%	291.44	256.87
21	Bank of India – 1	Not Known	44.05	36.01
22	Bank of India – 2		217.98	188.85
23	Consortium led by Punjab National Bank [Punjab National Bank, Indian Bank, Union Bank of India]	9% & 10%	66.41	59.41
24	Punjab & Sindh Bank (8.95%)	10%	297.20	273.18
25	ICICI Bank [Private Bank]	Not Known	79.51	68.42
	Total 3832.31			**3341.54**

Source: Compiled by author based on data provided by Department of Mission Bhagiratha, Government of Telangana.

RIDF loans have a standard policy of repaying in equal annual instalments within a period of seven years, which is extendable for up to two years. While interest rates under RIDF could not be known, the NIDA loans (which are of higher risks) have been given at 9.5 and 10 per cent per annum (in different phases). As mentioned, all NABARD loans are government secured, which means NABARD has the right to access central governments grant-in-aid to recover the loan. Thus, the risk in financing for NABARD is nil.

NABARD's loans under NIDA expect a quarterly settlement with 2 per cent penalty interest in case of lapses of repayment with a payback period of 7–9 years. Interestingly, most other public banks have lent money with interest rates ranging between 9.05 and 10 per cent, while the Housing and Urban Development Corporation of India charged the highest of 10.15 per cent interest rates with similar repayment terms ranging from 8 to 10 years.

Thanks to this financing, the drinking water department of the Telangana government was able to build the state-wide pipe grid supplied by over 150 water treatment plants. The pipe-grid was designed to supply water to the villages, while the intra-village distribution was handed over to the Gram-Panchayats, that is, the local governing bodies in the villages. The government officially declared that the scheme was completed in 2020 (ETV Bharat 2020).

Thus, Mission *Bhagiratha* emerges as an important case of public banks financing public water infrastructure in which NABARD played a key role. The case, set within the context of long-term support for public water by public banks, demonstrates the commitment of India's public banks such as NABARD (as well as commercial public banks) to support public drinking water projects. While there are debates over engineering designs, operational challenges, seasonality and the politicization of the projects, these critical issues do not overshadow the need for predictable and accessible financing to fulfil the capital needs to build water supply infrastructure. The case of Mission *Bhagiratha* is a noteworthy example of a stable and long-term financing option for drinking water projects, which are often capital-intensive and require significant upfront investments.

It is true that the financing made by public banks, especially the NABARD, is directly secured via official guarantees and is quite contrary to the market-based logic of financial prudence through cost recovery. For a developing country like India, characterized by high levels of social inequality and poverty, cost recovery in the provision of water services is a distant dream. In order to build drinking water infrastructure, instead of looking to make projects "bankable" by increasing user fees, policymakers should aim to distribute the risk of investment amongst a larger number of partners and dedicate financing from state budgets. In this regard, NABARD deserves special mention for its pro-public loans that help to promote substantial social objectives.

Moreover, the loans have facilitated the establishment of specialized institutions such as SPVs, which have encouraged financial prudence in

terms of independent accounting of loans and their repayment. This step can be seen as a beginning of financial reform, not necessarily in a sense of the corporatization of the public institutions, but in a way where prudent accounting practices, declaration of funds, linked functions to the funds and allocation of funds to targeted (drinking water) objectives are better coordinated. Such initiatives may have the potential to serve social objectives while reminding state governments that financial discipline may also be needed for social development (as not everything can be achieved through grant-in-aid). Further research on this topic is needed.

Conclusion

Because public banks are located within the public spheres of states, they have the potential to be less influenced by market fluctuations and profit imperatives. This can enable public banks to provide consistent funding over extended periods, which can help support the completion and maintenance of essential water infrastructure. The story of India's public banks, and NABARD in particular, alongside the case of Mission *Bhagiratha* demonstrates this point. Furthermore, the Mission highlights the potential for tapping public bank–public bank collaborations to support large-scale public infrastructure (that is, public policy-driven collaboration between PDBs, like NABARD and public commercial banks). Such collaborations can effectively support other public sector services.

This PPC showcases the often-untapped possibilities of viable public alternatives to market-based PPP arguments, in which private, profit-seeking investments are advocated and then guaranteed by public resources and revenues. Rather than a pro-private strategy, PPC offers pro-public ones. At the same time, public banks disbursements of loans in domestic currencies protect the public service providers from the risks of currency devaluation or upward revisions of currency exchange rates in the international markets. This offers substantive benefits over foreign currency loans.

More broadly, domestic PDBs such as NABARD can align their financing with national development policies and strategies. PDBs often have a deeper understanding of local conditions, needs and priorities. PDB localized knowledge allows for more tailored and context-specific financing solutions for water projects, ensuring that they are more effective and relevant to the community's needs. In the case of Mission *Bhagiratha*, Telangana was a newly formed state devoid of substantial resources and represented an arid region requiring substantial investments. Easy access to credit was key to providing a push to development, undoubtedly with a risk of overborrowing and the burden of repaying. However, PDB and public commercial bank understanding of local developmental needs and policy alignment ensured that the water project is integrated into broader policy plans for economic growth, social development and environmental sustainability.

Notes

1 As explained further below, the sanctioned or approved figures are different than the figures of money disbursed because NABARD implements a policy of performance-based disbursement. An instal\ment is released only after a tranche of money has been spent. The term "sanctioning" is interchangeably used with "approving" because loans are subject to conditions; hence, the term "sanction" denotes both the conditional approval and authorization of a loan.
2 NABARD does this through "women+water alliance" in which a range of non-government institutions such as USAID, Gap Inc., Care, International Center for Research on Women, WaterAid and Water.org are included.
3 Out of the 18 public sector banks listed in the table, 6 banks (Andhra Bank, Indian Bank, Corporation Bank, Syndicate Bank, Oriental Bank of Commerce and Allahabad Bank) have now been merged with one of the remaining 12 banks in recent times. However, the loans were negotiated while they were all existing independently between 2015 and 2019.

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4 Making water "public bankable" in Uganda and Tanzania

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This chapter examines the potential for state-owned public banks to play a positive role in the equitable and sustainable expansion and improvement of public water and sanitation services (WSS) in Uganda and Tanzania. Both countries have relatively strong and successful public water operators, stemming in part from failed experiments with privatization followed by sustained efforts to rebuild public water systems.

But lack of finance remains a major barrier to improved WSS in both countries, with national governments struggling to meet the increased spending required to achieve the Sustainable Development Goals (SDGs) for water and sanitation. Multilateral and bilateral funding agencies continue to be the largest financiers of WSS in Uganda and Tanzania, yet they too appear unable to meet the full financing needs of the sector. Official development assistance (ODA) in the region has been slowly declining, and there are concerns with an over-reliance on donor agencies that can impose problematic conditionalities on water utility operators.

Private finance has done little to close this financing gap. Despite repeated calls from powerful multilateral actors, and efforts to de-risk the water sector for private investors, private capital plays a tiny part in the funding of WSS in Uganda and Tanzania, and this is unlikely to change soon.

Could state-owned public banks help with this financing gap? We argue in this chapter that it is a real possibility. Drawing on international examples, we illustrate how Uganda and Tanzania could commit themselves to working towards a model of national public banks that provide long-term patient finance with low interest rates, helping to advance universal WSS coverage while building local financial expertise with a public purpose that goes beyond short-term political and electoral cycles.

This shift will not happen overnight, and there are no guarantees that positive synergies between public banks and public water agencies can be created. Public banks in Uganda and Tanzania are relatively new to the WSS sector and are relatively small financial institutions with limited capital for which

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there is much demand from other sectors. Building a larger investment base and training staff with necessary expertise and political autonomy to engage effectively in the water sector will be a medium- to long-term undertaking, with many obstacles en route. And, as with any public institution, public banks are prone to state capture and other forms of abuse. There are also important caveats related to the impact of debt financing on affordability for end users, as well as deeper philosophical questions related to the potential for financing to intensify the commodification process by entrenching neoliberal forms of exchange value that can override water's broader public use.

As such, we do not argue that state-owned public banks are a panacea for WSS financing in Uganda and Tanzania. Even the wealthiest of countries continue to rely on central governments for increased WSS spending, and donor funding will remain an important component of water financing in the region (UN Water 2021; Pickbourn et al. 2022). National public banks should therefore be seen as one piece of a complex financial puzzle—albeit a piece that has been largely ignored in the literature and policy making on WSS finance to date (McDonald et al. 2021; Marois & McDonald 2022).

Importantly, there appears to be a real appetite for building public bank capacity in the WSS sector in Uganda and Tanzania—both from public banks and from public water operators—although there are no formal plans in place to scale up these activities. We hope this chapter can contribute to promoting such discussions.

We begin the chapter with a brief historical review of public WSS in the two countries. Our focus is on the two largest public water operators—the National Water and Sewerage Corporation (NWSC) in Uganda and the Dar es Salaam Water and Sewerage Corporation (Dawasco) in Tanzania—in part because they are highly influential in their respective WSS sectors and in part because of the inherent tensions within these utilities arising from their need to balance the competing commitments of equitable service provision with that of being "financially viable." These tensions lie at the heart of the WSS financing question, highlighting the need for additional finance as well as the potential pitfalls of increased public debt. A review of existing sources of finance demonstrates just how urgent the need for new and expanded sources of WSS funding is.

We conclude with a critical discussion of the potential for national public banks to play a larger role in the water sector, focusing on the Uganda Development Bank (UDB), the Housing Finance Bank (HFB) in Uganda and the TIB Development Bank (TIB) in Tanzania. We then explore the potential for these national public banks to partner with multilateral and bilateral financial institutions to build capacity in the sector and raise additional capital. Public–public partnerships (PUPs) of this kind have been popular amongst water operators for many years (Beck 2019) but have not been attempted between public banks (Marois et al. 2023). Having a better sense of the benefits and pitfalls of such partnerships is a necessary precondition to attempting them in practice. The fact that Uganda and Tanzania are amongst

only a handful of countries in Sub-Saharan Africa where national public banks are engaged in the water sector makes this exploration even more useful.

Methodologically, the research consisted of a combination of primary and secondary literature reviews (for example: bank reports, government reports, water operator reports, academic and NGO articles) as well as information collected from senior officials in various organizations engaged in financing water services in the region, including UDB, HFB, NWSC, TIB, Dawasco (and two smaller water operators in Tanzania) as well as six multilateral banks and bilateral donors providing WSS financing in the region. Information was gathered via a combination of in-person interviews, online meetings and written responses to prepared questionnaires between late 2022 and early 2023 (collectively referred to as "author interviews"). For purposes of confidentiality, we have kept the names and positions of interviewees and some of the organizations anonymous.

Brief background on water operators

Similar to other parts of Sub-Saharan Africa, Uganda and Tanzania's experience with "modern" (i.e., piped and reticulated) WSS have been plagued from the outset by colonial neglect and racialized forms of exclusion. Fears of contagion by European settlers led to highly segregated urbanization, while racism resulted in unequal service delivery, with the vast majority of Africans (and other racialized groups) receiving little if anything in the way of formal WSS (Nilson 2006; Hungerford & Smiley 2016; Njoh 2016).

The post-colonial era saw the expansion of WSS to some neglected areas, but this growth tended to have an urban bias and trailed behind investments in other infrastructure. Political machinations, rent-seeking and corruption played a part in the slow and uneven pace of WSS delivery, setting the stage for neoliberal-era attacks on public water services. In the context of structural adjustment in the 1990s, the World Bank and a host of other multilateral and bilateral banks and donors began to push for private sector participation in WSS throughout the Global South, enforced in part by conditionalities on loans (Bayliss 2003, 2008; Bayliss & Fine 2008; Bakker 2013; Estrin & Pelletier 2015).

Uganda is illustrative of these privatization pressures. By the mid-1990s, the National Water and Sewerage Corporation was considered a "basket case": too heavily reliant on international donors and financially unviable (Bukenya 2020, 2). By the end of the decade, the NWSC was on the verge of bankruptcy (Muhairwe 2009). To "salvage" the corporation, donors recommended major institutional reforms that "centred on promoting market-based practices, such as private sector participation in urban water service delivery" (Bukenya 2020, 11; see also World Bank 1998).

To test the theory, NWSC was split into two parts: one section of the utility focused on the capital city, Kampala, and was run by a private

for-profit water company on a contract basis; the remaining NWSC towns continued to be operated by public sector employees (Muhairwe 2009). The initial Kampala contract was awarded to a German firm from 1998 to 2001. Following its "unsatisfactory performance," a French company, ONDEO Services, was contracted from 2002 to 2004, but its record was also problematic (Bukenya 2020, 11). Meanwhile, the publicly run portion of NWSC outperformed the private companies on a wide range of indicators, convincing the Ugandan government to jettison the privatization experiment and reunite the two sections of NWSC (Muhairwe 2011; Heymans et al. 2016).

The newly revitalized NWSC was given semi-autonomous standing as a corporatized utility and was mandated to adopt a commercial orientation, "introducing private sector management principles and practices, including efficiency orientation, competition, performance management and entrepreneurialism" (Mbuvi & Schwartz 2013, 380). NWSC headquarters became the contract management unit responsible for asset holding and performance monitoring while management teams in towns "acted like private operators responsible for management, operation and maintenance services" (Bukenya 2020, 13; see also Banerjee & Morella 2011).

The early years of this corporatization saw NWSC focus on revenue collections, cost-cutting measures and outsourcing, bringing together "the political elite, key technocrats and donors into a rare coalition that enabled a six-year programme of harmonised and uninterrupted support for NWSC" (Bukenya 2020, 2). This transformation was seen by many to be a success story, with NWSC outperforming its peers in the region on indicators such as non-revenue water and cost management coverage, achieving "remarkable turnarounds" in a context characterized by "low national income, rapid urbanisation, as well as weak governance involving high public sector corruption and authoritarian tendencies" (Bukenya 2020, 2, 5).

But improvements began to slow in the late 2000s and have been uneven since, with concerns that a skewed focus on costs and profitability has motivated too much of the decision making. According to one government official, NWSC "only cares about preserving its autonomy and financial viability" (as quoted in Bukenya 2020, 23). Even the expansion of NWSC to smaller towns and rural areas appears to be shaped by financial criteria, with the "NWSC mainly adhering to the logic of first connecting those areas that were deemed most profitable" (Tutusaus & Schwartz 2020, 258; see also Kitonsa & Schwartz 2012). Herein lies what Tutusaus and Schwartz (2020, 248) refer to as "organized hypocrisy," with the NWSC needing to "show adherence to a commercial public utility model in order to access resources from donors and the national government," while at the same time providing water in places where full cost recovery is impossible due to low household incomes.

This conflicting mandate is reflected in the uneven state of WSS in contemporary Uganda. Although the share of the national population with access to basic water services increased from 24 to 39 per cent between 2000 and

2015—with NWSC increasing water coverage in urban centres under its jurisdiction from 40 to 80 per cent—there are significant disparities between rural and urban areas and across income groups, with many low-income families unable to afford the level of services they require (Alabaster & Krůčková 2015; Tsimpo & Wodon 2018; Mugisha 2019; Bukenya 2020). Progress on sanitation has been particularly weak, with almost a quarter of the country's rural population, and close to 10 per cent of its urban population, still forced to practice open defecation, while access to handwashing facilities has "largely stagnated over the past 5 years" (Government of Uganda 2022, 146).

Tanzania's water and sanitation story is very similar. Although access to WSS was expanded considerably in the early post-colonial era (notably in rural areas with the creation of *ujamaa* villages), by the mid-1990s, most public water services were seen to be on the brink of collapse by aid agencies, resulting in a push for privatization (Pigeon 2012; Smiley 2013). In response, the Tanzanian government revised its National Water Policy, effectively codifying private sector involvement in WSS. The focus was on the largest city, Dar es Salaam, where a highly secretive process saw a consortium of German, British, Asian and local firms awarded a lease contract in 2003 to manage water and sanitation. But performance was so poor—particularly in low-income areas—that the contract was terminated after a mere 21 months, with police arresting the company's executives and expelling them from the country (Allen et al. 2006; Bayliss 2008; Pigeon 2012).

As with Uganda, failed privatization led to a return to public management, also with a corporatized model. National government created a state-owned enterprise (Dawasco) which entered into a lease agreement with the public asset holding agency, the Dar es Salaam Water and Sewerage Authority (Dawasa), later expanded to include agreements with water authorities in other urban and rural areas in Tanzania. A PUP was then established with Uganda's NWSC to assist in capacity building, which included the participation of local community organizations and NGOs (Dill 2010; Pigeon 2012).

Significant improvements were made at Dawasco within the first few years: financial stability improved, information systems were upgraded, household connections expanded, staff training was more effective, infrastructure investments increased and more progressive tariffs were introduced, including targeting non-payment from high-income users. Staff morale improved, as did public support for the company (Mugisha 2011; Triche 2012). As Pigeon (2012, 53) notes, it is a "remarkable achievement that…-Dawasco was able to rise from the ashes [of failed privatization] and reverse the performance trend to increase coverage and revenue," demonstrating once again that public water services can be better than private ones.

But as with the NWSC—and perhaps because of its close mentoring role—concerns have been raised over the emphasis that Dawasco places on financial viability. Critics argue that Dawasco senior executives have been fixated on comparing themselves to the private sector, prioritizing financial efficiency

and profitability over reliability, quality, safety and affordability (Pigeon 2012, 46). There are also concerns that overly centralized decision making provides little space for citizens to express their opinions (Mdee & Mushi 2021). And although the government appears committed to a public WSS model—including the creation of a National Water Fund and a Rural Water Authority with mandates to provide water supply to marginalized areas—the recently enacted Water Supply and Sanitation Act once again re-opens the possibility of private sector participation (Government of Tanzania 2019).

In the end, the results of Tanzania's WSS restructuring have been mixed and tension laden. There have been some important gains, but SDG targets for water and sanitation are being missed by a wide margin, particularly in rural areas, low-income urban neighbourhoods and in sanitation. Only 61 per cent of households have access to a basic water supply, 32 per cent have access to basic sanitation, and 48 per cent have access to basic hygiene (World Bank 2022). More than 30,000 Tanzanians die annually due to poor or non-existent sewerage services in the country, many people struggle to pay their water bills, and water inequities remain deeply gendered (Brown 2010; Masanyiwa et al. 2017; Smiley 2017; Mwesongo & Mwakipesile 2023).

Paying for WSS

Addressing these water and sanitation shortfalls in Uganda and Tanzania will require significant investment. Money alone will not solve the problems, of course—reforms to governance and administration will also be important—but without a substantial increase in WSS spending, both countries will continue to face dire social, economic, health and environmental consequences related to water and sanitation.

How much money is required? Government estimates in Uganda put the costs of meeting their SDG targets of universal access to safely managed water and sanitation by 2030 at US$935 million a year—three times the current level of investment in the sector (Pickbourn et al. 2022, 2). In Tanzania, the third phase of the Water Sector Development Program (intended to address all its water resource management and WSS needs over the 2022–26 period) has an ambitious spending target of US$6.5 billion, four times higher than the first two phases of the programme combined, and several multiples more than the government's historical spending in the sector (World Bank 2022).

But even these estimates do not account for the full costs of water and sanitation needs. Repairing old (and buried) infrastructure is often not included in estimates, and there is the added challenge of rapid urbanization and informalization, which can make water operators feel as if they are running just to stand still. The demands of climate change and the costs of new technologies compound these expenditures. Addressing these needs will far exceed country budgets.

Where will this money come from? The following sections explore different possible sources of existing and prospective finance and their potential to

improve and expand Uganda and Tanzania's public water and sanitation systems.

National governments

Decisions on the financing of water services are highly centralized throughout Sub-Saharan Africa, and Uganda and Tanzania are no different in this regard (UNICEF 2019). This centralization is partly political (Bukenya 2020) but also because most local governments and their local water operators do not have the fiscal capacity to generate sufficient funds through taxation or tariffs. In other words, the burden and responsibility of state funding for WSS in Uganda and Tanzania falls on national authorities.

Yet in both countries, national government spending on WSS is well below what is required to meet the SDGs and is unlikely to increase significantly anytime soon. In Uganda, national spending has increased slightly in real terms over the last decade, but it "remains low in comparison to needs" (Mutono et al. 2019, 111). Funding to WSS as a share of the national budget also lags other sectors, averaging a mere 2.9 per cent between 2015 and 2018 (Pickbourn et al. 2022, 2). According to Uganda's minister of water and environment, the national government's budget allocation "is far below the projected funding to achieve the [sector's] outcomes and implement the interventions as outlined in the [National Development Plan]" (Government of Uganda 2022, 3). The Tanzanian government's budget for WSS also falls far short of what is required, at about 1.7 per cent of expenditures, although this is not unusual amongst countries in the Global South (Joseph et al. 2020; World Bank 2022).

Do these budget gaps represent a lack of WSS prioritization on the part of the Ugandan and Tanzanian governments? Yes and no. On paper, water and sanitation feature prominently in both country's development plans, and their public water operators have benefitted from long-standing financial and political support from their national governments (Alabaster & Krůčková 2015; Tsimpo & Wodon 2018). It is also true that the Ugandan and Tanzanian governments face enormous fiscal demands from a broad range of sectors, including health, education, electricity and housing (to name but a few). Combined with the structural features of a global economy that have left most African nations heavily indebted and trapped in trading relationships that do little to generate sustainable economic growth, particularly in the wake of COVID-19, the options for increased national spending on WSS are highly circumscribed, even if the political will exists (Ayadi & Ayadi 2008; Ndung'u et al. 2021).

This observation is not to absolve the governments of Uganda or Tanzania of the urgent moral, economic, health and environmental necessity of investing more money in WSS. The fact that 40 per cent of Tanzania's WSS budget has gone unspent in recent years is indefensible (Kwezi 2021). Nor is it to deny the ongoing reality of rent-seeking, corruption and politicization

of water services that continue to hamper effective service delivery in both countries. But Uganda and Tanzania cannot pull a financial rabbit out of their hats. It is unrealistic to expect these governments to cover the full costs of their water and sanitation crises on their own. A major portion of WSS funding will need to come from other sources.

Multilateral and bilateral funders

The biggest financiers of WSS in the region have long been multilateral development banks and bilateral donors through a combination of grants and concessional loans. In fact, the region received the largest share of ODA disbursements for the water sector of any region in the world in 2019 (UN Water 2021). In Uganda, approximately 30 per cent of total financing in the WSS sector comes from donors (Pickbourn et al. 2022, 2), while for capital expenditures this can be as high as 75 per cent (author interviews). Similar figures apply to Tanzania (Kwezi 2021; World Bank 2022).

There is a long list of multilateral and bilateral agencies involved in the water sector in the two countries, including the World Bank, the African Development Bank, the European Investment Bank, Agence Française de Développement (AFD), KfW Development Bank, India Exim Bank, Kuwait Fund, Arab Bank for Economic Development in Africa, Islamic Development Bank, Netherlands Development Bank and the Japan International Cooperation Agency. Some have been involved in WSS funding in the region for decades and are very knowledgeable about the sector. Some are relatively new.

However, the outsized influence of these agencies raises a number of troubling questions about long-term financing of WSS in Uganda and Tanzania. The first is the unpredictability of donor financing. Only a small portion of ODA goes to the water and sanitation sector (UN Water 2021), and there has been a "steady decline of disbursements" to WSS in the region over the past two decades (Pickbourn et al. 2022, 2), consistent with an overall drop in WSS-related aid in Sub-Saharan Africa from 32 to 22 per cent of ODA between 2017 and 2020 (GLAAS 2022). Water officials in Uganda and Tanzania interviewed for this research all noted their worries with this downward trend.

Another concern relates to what some water managers in Uganda and Tanzania see as restrictive and counterproductive conditionalities attached to funding from the multilateral and bilateral agencies. According to one senior water official:

> We have no problem with the financial due diligence and reporting required, and understand the need for checks and balances, but there are too many conditions related to operational decisions—such as choice of contractors—which end up making loans quite expensive. We could do things much more efficiently if we had more control over the funding.

Some WSS officials have taken these criticisms a step further, arguing that international financial institutions can undermine local autonomy and capacity building through the creation of paternalistic forms of dependency. As a senior Dawasco official noted in a previous study, loans allow these agencies to "get the country under their thumb and force Tanzanians to develop as they are told to." Another executive remarked: "If you want to get rid of them, you have to pay them their money back! But in the meantime, they own you." Yet another complained about wasting time in meetings where his only role was to sip coffee and nod here and there as proof that "the local stakeholders have participated in the project" (quoted in Pigeon 2012, 52–3).

Yet it is impossible to imagine sufficient financing for WSS in the region without multilateral and bilateral funders, at least for the foreseeable future. Many WSSs would collapse, and there would be no hope of achieving the SDG goals. There is therefore a continuing case to be made for an obligation on the part of high-income countries to continue their support to WSS in the Global South through grants and concessional finance (Bexell & Jönsson 2017).

But at the same time, business as usual is not an option. Donor funding levels must increase if the SDGs are to be met, while lending and grant conditionalities will need to be more flexible to promote capacity building and create more equitable relationships with local actors. There are valid concerns on the part of donor agencies around the need for improved political transparency in Uganda and Tanzania, and there are ongoing problems with rent-seeking and corruption in the WSS sector, but as Pigeon (2012, 55) concluded more than a decade ago in the case of Dar es Salaam, "if political sovereignty is a condition for sustainability, then the limited choices imposed by donor conditionality must be seen as one of the biggest obstacles to solving [the city's] water woes in the long run."

On a more promising note, the issuance of a 10-year water infrastructure green revenue bond valued at TZS 53.12 billion (US$20.8 million) in early 2024 to support the expansion of infrastructure at the Tanga Urban Water Supply and Sanitation Authority was developed with the support of the United Nations Capital Development Fund (UNCDF 2024). Acting as a third-party guarantor, UNCDF's support allowed the water authority to tap into local capital markets, raising funds in local currency and reducing risk and volatility.

Water operators

Another important source of WSS finance in Uganda and Tanzania is revenue generated by water operators themselves. Since their creation as standalone corporatized water utilities, NWSC and Dawasco have been expected to recover as much of their costs as possible and to apply these to their operational expenses. Indeed, this was one of the primary motivations for creating them as ringfenced public agencies—part of a broader global shift over

the past three decades towards cost-reflective pricing models that can more easily attach individualized costs to water consumption by separating out expenses and revenues from other public services (Molinos-Senante et al. 2013; McDonald 2014; Furlong et al. 2018; Mitlin & Walnycki 2020).

But *full* cost recovery is virtually impossible for stand-alone water utilities, illustrated by the fact that few (if any) water operators in the world cover *all* of their operating and capital expenditures through tariffs. This is particularly true of sanitation services where it is difficult to attribute volumetric fees (Hall & Lobina 2008). The challenges of cost recovery are even more pronounced in low-income settings where poor households struggle to pay for essential goods and services, with less than 15 per cent of water utilities in the Global South even meeting their operational expenditures (World Bank and UNICEF 2017, 14). A survey of 30 water utilities in Africa found that only a third met their operating costs via tariffs and less than 10 per cent were able to contribute to capital expenditures (UNICEF 2019, 25).

In this regard, Uganda and Tanzania are exceptional, with many of their public water operators meeting operational costs via tariffs, and with some even raising sufficient revenues to contribute to capital costs (Government of Uganda 2022; Tutusaus & Schwartz 2020, author interviews). But tariffs alone are not enough. Only 13 per cent of capital expenditures are covered by revenues at NWSC, for example, with managers noting that "our tariffs are much, much lower than full cost recovery" (author interviews). The vast majority of capital project funding at NWSC comes from national government (13 per cent) and donors (74 per cent), with similar figures for Dawasco (author interviews).

A focus on tariffs and cost recovery has also led to criticisms that the water operators contribute to inequities (within cities and across urban–rural divides) by forcing managers to invest in areas that can generate a positive financial return (Tutusaus & Schwartz 2020; Pigeon 2012). These problems are not unique to NWSC and Dawasco (McDonald 2014; Furlong et al. 2018), but they do demonstrate the inherent tensions of relying on cost recovery as a mechanism for funding WSS in low-income settings. The fact that donor agencies continue to push for cost recovery in the water sector—partly as a condition of funding—makes the problem even more intractable.

Private finance

Donor agencies also continue to push for private finance as a solution to the funding crisis in WSS. But the evidence to support these theoretical arguments is weak. A growing number of studies have now concluded that private finance has never been a major factor in the financing of water services in the Global South: "private-sector finance for water has remained minor" (Alaerts 2019, 8). While important in a handful of high-income countries such as France and the UK, private sector financing accounts for only "seven per cent of total spending on water and sanitation" globally;

in Sub-Saharan Africa, private finance accounts for less than 1 per cent of spending in the sector (Leigland et al. 2016, 4; see also Kolker et al. 2016 and Wu et al. 2016). The United Nations Inter-Agency Task Force on Financing for Sustainable Development notes, moreover, that private sector investment appears to be decreasing and is "well below the peak reached in 2012" (IATF 2019, 61). Even the World Bank admits that for most public water operators "private finance is almost non-existent" (Kolker et al. 2016, 1).

The primary reason for this lack of interest from the private sector is risk. Early expectations of high returns in the water sector quickly evaporated in all but the wealthiest of countries or in locations where guaranteed rates of profit had been negotiated (Bakker 2010; Jägerskog et al. 2016). Most private water companies have scaled back activities in risky locations, changed tactics to focus on more value-added niche markets and services (such as desalination) or have withdrawn altogether from money-losing contracts (Bauby 2014; Lazonick & Shin 2020). Political backlash against water privatization also helps explain why private water companies and financiers have reduced their financial exposure in the sector. The "botched" (Bukenya 2020) experiences with water privatization in Uganda and Tanzania, and the unceremonious expulsions of the company's executives, has no doubt contributed to a lack of private sector interest in these countries.

In response to this challenge, many multilateral funders have been pushing for "blended finance"—the "strategic use of public taxes, development grants and concessional loans to mobilize private capital flows"—which is now the centrepiece of the World Bank's "billions to trillions" SDG agenda (World Bank and UNICEF 2017, vii; see also IATF 2019). But here too, it would seem that efforts to de-risk private investment have failed to entice private finance to the water sector. The blended finance that does exist flows to a small cluster of middle-income countries such as Turkey, Nigeria and Brazil, with much of this being concentrated in highly profitable sectors such as financial services and energy rather than water. Only 2 per cent of global blended finance mechanisms have been allocated to WSS (IFC 2017; Benn et al. 2017). As Bernards (2024) has observed, it turns out that private finance is not all that interested in "blended finance."

Nowhere is this more true than Sub-Saharan Africa where "there is no indication that the vast amounts of global private equity and institutional investments is beginning to flow into infrastructure" (Lee & Gonzalez 2022, 22). Uganda and Tanzania are no different, with private international financing of infrastructure virtually non-existent in the water sector (Schiffler 2015; Pickbourn et al. 2022). To make matters worse, there is evidence to suggest that the ongoing push from multilateral agencies to promote private financing has had the incongruous effect of reducing public investment in water supply and sanitation, presumably because governments are being told that the private sector will fill the gaps (Heidler et al. 2023, 6; Hall & Lobina 2012).

Private local banks in the region have shown some interest in lending to water operators—with NWSC and Dawasco having borrowed from local private financial institutions—but this borrowing is minor. Water managers also noted that the terms of these private loans are shorter than they would like and that local private banks do not have sufficient capital to finance large projects, suggesting little potential for growth (author interviews).

Public banks to the rescue?

Given these financing constraints, the prospects for finding sufficient money to meet the SDG goals for water and sanitation in Uganda and Tanzania would appear to be grim. There is, however, one other potential source of WSS funding that has been largely ignored in the literature to date: public banks.

Public banks are financial institutions that are owned and controlled by the state or some other public entity. They can operate at a municipal, national or even international level and can function according to differing logics and under different mandates (Marois 2021). There are public banks that are highly commercialized and neoliberal in their orientation, with explicit profit-maximizing mandates (such as in Turkey; see Yalman et al. 2019). There are others for whom profits are secondary to development and which support the provisioning of more "patient" finance—i.e., willing to wait decades for returns rather than years—such as with several Brazilian, Indian and German public banks (see Scherrer 2017). Still others have mandates that put social returns on par with financial ones, such as the Banco Popular in Costa Rica or the Council of Europe Development Bank (see Chapter 1 in this volume for a more detailed discussion of different types of public banks).

Some public banks have been involved in the water sector for more than a century (such as Kommunalbanken in Norway), while others are quite new, such as the Banque des territoires in France, created in 2018, which immediately took up the challenge of funding municipal water and sanitation (Butzbach & Spronk 2022; Juuti et al. 2022). Most lend to multiple sectors, but at least one public bank—the Water Bank in the Netherlands—was founded specifically to finance public water services and has since expanded to other service areas (Schwartz & Marois 2022).

Hence, there is no singular institutional model or lending mandate for public banks working in WSS. There are also mixed results in terms of their effectiveness (Marois & McDonald 2022). Nevertheless, a growing body of research has demonstrated important potential advantages associated with the use of state-owned public banks to finance public water and sanitation:

- Large volumes of low-cost, easy-to-access, reliable and patient capital.
- Universal forms of lending and technical support that assist all shapes and sizes of public water operators regardless of their wealth, population or location.

- Public purpose mandates that prioritize public water services, sustainability and a host of other criteria that go beyond the narrow financial metrics that dominate private financing discourses and operations.
- Knowledgeable institutions that are less prone to political and electoral cycles, providing the potential for long-term lending strategies that extend beyond political personalities.

Public banks in Uganda and Tanzania are still far from realizing these potentials, but UDB, HFB and TIB are amongst only a handful of state-owned banks engaged in the water and sanitation sector in Sub-Saharan Africa, and all have expressed a strong interest in expanding their role in the WSS sector (as did the public water operators they finance) (author interviews). And although they are all relatively small financial institutions, in global terms, these public banks provide an important opportunity to create a new source of funding and support for WSS in Uganda and Tanzania.

As shown in Table 4.1, the UDB is the largest of the three, established in 1972 to finance a wide range of industrial, mining, agricultural and service sectors, investing in projects that demonstrate "the propensity to deliver tangible socio-economic outcomes" (UDB 2021, 3). As of December 2022, UDB's total assets were valued at USh 1.44 trillion (US$383.6 million) (Kigozi 2023). The HFB, as the name suggests, focuses on personal and commercial mortgages. It began as a private bank in 1967 but was nationalized in 2007 by the Ugandan government and now offers a wide range of retail banking services as well as loans to government departments and agencies in sectors related to housing (such as water and sanitation). HDB's total assets were USh 1.1 trillion (US$293 million) as at December 2020 (HDB 2020). The TIB was also an early post-colonial creation (established in 1972), with a focus on infrastructure, industrialization, oil and gas and the services sector, with total assets of TZS 627 billion (US$265 million as at December 2021) (TIB 2021).

For all three banks, water and sanitation constitute a small portion of their current lending portfolio (approximately 5 per cent of UDB and HFB and less than 2 per cent of TIB), with funds typically flowing indirectly to water operators through national agencies (although TIB does lend directly to some water service providers via the National Water Fund and administers funds from the Dutch government to support community water schemes) (author

Table 4.1 Public banks discussed in this chapter

Name	*Year created*	*Total assets (year-end)*
Uganda Development Bank	1972	$US 384m (2022)
Housing Finance Bank (Uganda)	1967/2007	$US 293m (2020)
TIB Development Bank (Tanzania)	1972	$US 265m (2021)

interviews). The banks also admit to being not particularly knowledgeable about the WSS sector—a point confirmed by public water operators we spoke to, with one manager noting that bank familiarity with their needs are "still scanty"—but all expressed a desire to learn more given the importance of water and sanitation to their country. As one bank put it, "we wish we could do bigger projects in the sector," while another noted, "this is just the beginning!" Other sentiments included: "We are late to the party. We should have started a long time ago." This enthusiasm was reciprocated by public water operators, with one noting that "water and sanitation services are a human right, and as such public banks should take a lead in providing finance" (author interviews).

Limited capital, however, will constrain the potential for public bank involvement. As one water operator noted, "the amounts required for capital projects are usually much more than what the local [public] banks can afford to finance." Another said that national public banks are "limited by their low capital base. They usually rely on the annual capitalization by the government and as such, they are subjected to compete for the national resource basket." All three banks have seen their overall assets and lending portfolios grow over the past five years, but the potential to make a larger difference in WSS remains limited by their small capital base and demands on these funds from other sectors.

Capital is not the only challenge for these banks. Human resource constraints and competition for relevant skills with the private sector will make it difficult to expand, while developing expertise in the water and sanitation sector will take time. Sustained political commitment from public bank managers, government officials, and public water agencies will therefore be required to build the kinds of institutional knowledge and shared trust that exemplify successful public bank lending practices in the water and sanitation sector elsewhere in the world.

Public–public partnerships

One possible way to speed up these processes is for public banks in Uganda and Tanzania to create formal partnerships with national and multilateral public banks from other countries (on this point, see Marois et al. 2023). Also known as PUPs, such arrangements between public agencies are popular in the water sector, where hundreds of formal and informal arrangements between public water operators have been created within and across countries to develop technical and managerial capacity on a wide range of topics, from the implementation of new technologies to the development of upstream water management policies (Hukka & Vinnari 2007; Fiasconaro 2020). Many of these technical partnerships are North–South (often part of a Northern country's development contributions), but they are increasingly South–South as well, such as the aforementioned water operator partnership between NWSC and Dawasco.

We are not aware of any formal partnerships of this kind with public banks in Uganda and Tanzania, although there are examples of public banks co-financing water projects in the region (for example, UDB and HFB are co-financing a loan to NWSC, and TIB co-lends with multilateral and bilateral funders within the Investment Financing Facility in Tanzania) (author interviews). However, these collaborations are relatively small and appear to be limited to the relatively simple mechanics of co-lending—a common practice amongst public banks around the world (Marois 2021)—rather than more complex forms of knowledge sharing and capacity building.

Nevertheless, the potential for more robust and meaningful partnerships exists. The national public banks we interviewed were keenly interested in the possibility, as were some multilateral and bilateral agencies, two of which indicated they were "very open" to the idea. Some international institutions were more hesitant, however, expressing concerns about transparency, patronage and poor governance at the local public banks. One was outright dismissive of the idea, arguing that "the demand for this is not there" and that "water operators must become more business-like so that a private financing model can become a more significant fact."

Efforts to create public bank PUPs in Uganda and Tanzania will therefore face significant challenges, working across different social, political, economic, cultural and institutional contexts and expectations. But creating effective PUPs in the public banking sector is not impossible, demonstrated by the growing success of PUPs in the water sector. Despite significant hiccups in its initial stages, partnerships set up through the UN's Global Water Operators' Partnership Alliance have become increasingly effective and more equitable over time (Laird & Bernal 2020). Some of this learning experience could be transferred to the development of PUPs in the banking sector. In fact, multipronged partnerships involving public banks and public water operators could be a particularly fruitful approach.

Still, we must be careful what we ask for. Many of the multilateral and bilateral agencies operating in Uganda and Tanzania continue to support privatization and commercialization in the water sector, making it unclear what kind of political commitment there would be for a *pro-public* position on ownership, management and financing of WSS. There is also the question of whether these multilateral and bilateral agencies would bring colonial attitudes to the partnerships, creating unbalanced PUPs with paternalistic one-way transmissions of "knowledge" (Marois 2022). This has been a problem with some PUPs in the water sector, where unsuitable technologies, managerial practices and cultural expectations have dampened or even undermined partnership objectives (Beck 2019). Local public banks will therefore need to ensure that knowledge-sharing partnerships with multilateral and bilateral institutions are developed in ways that advance and expand their own capacity and autonomy in appropriate ways (Marois et al. 2023).

Avoiding a (financialized) debt trap

Perhaps the biggest challenge for public banks and public water operators in Uganda and Tanzania will be avoiding a debt trap. Debt itself is not necessarily the problem. Amortizing the costs of large infrastructure developments over a multiyear period can be the most cost-effective way to finance big projects. The returns on financing remain within the public sector, building public banks' lending capacity. There would also appear to be room for increased debt amongst (some) public water operators in both countries. The NWSC, for example, has a debt-to-equity ratio of just 4 per cent and an AA credit rating, with management noting that they could raise that ratio to 10 per cent if they wanted to: "we have no concerns about the debt that we hold at the moment" (author interviews).

But the NWSC also noted that, "we have to be very, very careful about our borrowing. We cannot simply raise prices to pay for loans, and central government is reluctant to borrow themselves and on-grant to us." In other words, without government guarantees, there are strict limits to how much public water operators can borrow if they are to keep tariffs affordable and equitable given their ringfenced financial model, once again highlighting the fact that public bank lending is not a panacea for Uganda and Tanzania's water sector woes.

Equally concerning is the potential for debt to be *financialized*. Here, we refer to the increasing influence that finance capital plays in the decision-making processes of water operators, either through direct investment or indirectly through abstract financial mechanisms such as bundling water revenue streams into financial products that can be bought and sold on the open market (Ahlers & Merme 2016; Loftus et al. 2019). The result of this financialization has been a profound "restructuring of social relations and cultural practices around financial imperatives" in the water sector, which can lead to decisions that benefit the interests of finance capital at the expense of equity and sustainability for end users, resulting in uneven flows of capital into areas with the highest potential returns while unattractive sectors and regions "are side-lined and starved of credit" (Williams 2021, 1875–6).

The push to make water operators "bankable" is part of this financialization trend, forcing public water utilities to attract private lenders through the creation of reliable revenue streams, a focus on the financial bottom line, the use of highly financialized performance indicators and the diffusion of financial language into the daily operations and decision making of water managers (Elvas 2010; McCoy & Schwartz 2023; Rudebeck 2022).

Can public banks in Uganda and Tanzania avoid—or at least deflect—these financialization pressures? We offer a qualified "yes." As with public banks engaged in water and sanitation lending elsewhere in the world, there is no reason that governments cannot give state-owned public banks

mandates that go beyond market-based rates of return to include broader public purpose goals and performance markers such as improved equity, access and sustainability. Publicly owned and publicly managed banks can actively work towards the *definancialization* of lending by putting narrow financial indicators into a broader context of social, health, economic and environmental goals that extend beyond a single institution (Marois 2021). In short, public banks have the potential to shield public water from financialization.

Achieving these goals will require an explicit mandate and sustained political support in the face of ongoing pressures from multilateral and bilateral agencies to create market-oriented "bankable" water services in Uganda and Tanzania. It will also require institutional and managerial shifts within the public banks and public water operators themselves. Two decades of corporatization and commercialization have had far-reaching impacts on these institutions, with all the necessary preconditions for financialization already in place at NWSC and Dawasco: ringfenced forms of accounting, benchmarking systems that reward profitability and individualized market pricing mechanisms that can erode the public's understanding of water's broader public use values. Similar forms of corporatization and commercialization have taken place at the public banks we spoke with—witnessed in part by their shift in focus over the past decade towards assisting the private sector and their insistence that lending is shaped first and foremost by "commercial viability" (author interviews).

Balancing the inherent tensions of making public investments on commercial terms will therefore not be easy. It is a challenge made more difficult by the performance metrics that dominate the world of financial institutions and the inevitable comparisons that public banks make with their private sector counterparts. Creating partnerships with multilateral and bilateral institutions that support privatization and commercialization in the water sector will make definancialization even more difficult and point to the need for new types of benchmarking that better account for public purpose objectives (McDonald 2016).

But nothing is impossible. If, as they should be, public banks are viewed as a public utility like any other state-owned entity, there is no reason that their mandates, governance and benchmarking criteria cannot be oriented towards advancing a broad set of public use values. In the same way that water operators are sites of struggle over their public purpose, public banks can also be shaped to contribute to equity and decommodification (Marois 2021). Long-term, low-cost financing designed to enhance equity, improve transparency and create a sense of public value that promotes a fuller understanding of the social, cultural and environmental values of water and sanitation has proven to be possible with public banks in other parts of the world. There is no reason that similar objectives cannot be achieved in Uganda and Tanzania if the political will (and public pressure) exists to

create the kinds of legal provisions and governance mandates required to make them happen.

Conclusions

This chapter has provided a first-of-its-kind study of the potential for public banks to play a positive role in the expansion and improvement of public WSS in Uganda and Tanzania. We have argued that there is potential for a different type of "bankability"—one that promotes broad social purpose and public policy over narrow financial gain, driven by the combined mandates of different public agencies. National governments and international donors will need to continue playing a central role in financing WSS for the foreseeable future, but building capacity within national public banks, and strengthening their relationships with and knowledge of public water operators, will be an important part of creating long-term sustainability and increased financial autonomy in the water and sanitation sector in both countries.

We do acknowledge that these possibilities will require hard work and commitment in the face of extreme poverty, inequality and rapidly shifting demographics. Highly centralized forms of decision making may assist with the initial push for such change, but a devolution of power and resources to public banks and public water operators will be necessary for skills development and autonomy, as will more transparent forms of governance within these institutions. None of this will be easy and will always be prone to capture by politicians, bureaucrats and other powerful forces that will try to benefit from rent-seeking and corruption. But the fact that national public banks have managed to play a positive role in water services in countries facing similar political and economic challenges suggests it is feasible, illustrated in part by the diversity of examples discussed in other chapters in this book, from Brazil to Costa Rica to the Philippines.

Additional research and active monitoring of progress will be an important part of this initiative. Involving national public banks from elsewhere in the region could also help to advance knowledge sharing and potentially contribute to a regional approach to public bank lending. All of this will depend on creating the institutional and intellectual space that allows (and encourages) policymakers and managers to think beyond the narrow market-based notions of success that have shaped water policy in Uganda and Tanzania over the past two decades.

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5 Public banks and public water in Colombia

The case of the Findeter development bank

Erika Meneses-Granados and Denisse Roca-Servat

This chapter focuses on the role that the Territorial Development Financial Institution (Financiera de Desarrollo Territorial S.A., Findeter), a national development bank, plays in financing the water supply and sanitation (WSS) sector in Colombia. The evolution of the public banking sector and the public services sector must be understood in the context of the diversity of geographical and hydrological, social, political, economic and cultural characteristics of the Colombian territory. These public systems have been influenced by local, national and transnational dynamics, including the prioritization of particular political and economic interests, entrenched social inequality, and a prolonged armed conflict that has played a decisive role in the growth of cities, spurring rural–urban migration (Camargo et al. 2022).

Financing WSS infrastructure requires a significant amount of investment. Most water operators cannot afford to cover the costs of their operations through tariffs and taxes, let alone those of infrastructure maintenance and expansion (Reis 2022, 831). In developing countries like Colombia, austerity measures have made it difficult for governments to provide adequate subsidies to maintain or expand services to achieve universal coverage, especially in rural areas. Climate change has further increased the need for investment due to a higher likelihood of landslides, droughts, floods and hurricanes. The United Nations has recognized that water is also a basic necessity and a human right. In the case of Colombia, access to drinking water has also been recognized as a fundamental right by the Constitutional Court (Judgments T-578 of 1992, T-418 of 2010, T-740 of 2011 and T-012 of 2019). It is therefore both undesirable and difficult to measure the benefits of providing access to quality WSS services according to financial criteria alone or the "laws of the market" (interview 6).

In this chapter, we highlight how Findeter has been recognized as "the water bank" since its inception (interview 5). As a national development bank, Findeter has been committed to providing technical assistance and financing to water operators at the municipal and departmental (that is,

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provincial or state) levels through financial intermediaries. We highlight in particular the crucial role Findeter played during the COVID-19 pandemic (as did numerous other public banks globally) (McDonald et al. 2020). Faced with the imminent financial crisis that water operators were experiencing, the government authorized Findeter to open direct credit lines under favourable conditions to mitigate the impacts of the loss of income due to the economic crisis and the effects of public health measures. Thanks to the support and financial backing of the central government, Findeter increased its commitments to public water operators.

On the other hand, many challenges in the sector remain, such as the wide gap in access to drinking water between urban and rural areas. This leads us to discuss the important role that development banks such as Findeter could play in putting the human right to water into practice by supporting community-based water management in marginalized areas, protecting water sources and addressing climate change.

Research for this chapter draws on both primary and secondary sources. Primary sources entailed semi-structured interviews conducted between September 2022 and September 2023 with various experts in the field, including officials from Findeter, water operators and community members, as well as economists and experts on finance (see Appendix A for list of interviewees). To maintain confidentiality, the identities and positions of certain interviewees have been withheld. Secondary sources include bank reports and documents related to public water services.

The chapter is divided into three sections. The first offers a brief history of public banking and public water in Colombia, focusing on the role that national development banks such as Findeter and its predecessors have played in the latter's evolution. The second section presents information about Findeter's current programmes in the WSS sector, focusing on the positive role that it played in guaranteeing access to services during the COVID-19 pandemic. We also observe that the majority of Findeter's investments for water and sanitation projects to date have been concentrated in more central, urbanized departments, while financing for projects in peripheral regions has been more limited. This uneven spatial investment pattern raises questions about the limits of debt financing for addressing issues of equity in service delivery. Finally, the chapter concludes with lessons learned and poses questions for future research.

The history of public banking and public water in Colombia

The banking and WSS sectors in Colombia have not followed a linear trajectory from public to private or vice versa. Throughout the 20th and 21st centuries, the Colombian government has oscillated between periods of centralization and decentralization as well as privatization and nationalization, which has created a blend of public and private models of ownership and service delivery in both sectors (Kalmanovitz 2015; Ocampo et al. 2018).

The Colombian banking sector

From the late 19th century to the early 20th century, Colombia made efforts to establish a banking system, which included the creation of the National Bank in 1880 and the Central Bank in 1905. However, the first public bank to successfully consolidate and endure to the present day is the Bank of the Republic (Banco de la República, BR), which was founded in 1923 (Meisel Roca 1990; Kalmanovitz 1983). Initially, the BR functioned as a semi-public entity, adopting the structure of a joint-stock company in which the government held a 50 per cent stake, while national and foreign commercial banks, along with other private entities, held the remaining portion (Kalmanovitz 2015). In line with recommendations from the commission led by American economist Edwin Walter Kimmerer, its primary objective was to serve as a modern central bank, modelled after the United States Federal Reserve, tasked with issuing currency and regulating monetary policy. Over the ensuing decades the BR, as the central bank in the country, expanded its role to encompass various spheres of the economy (Meisel Roca 1990).

The government established Colombia's first national development bank, the Industrial Development Institute (Instituto de Fomento Industrial), in 1940. The aim of the Industrial Development Institute was to promote the establishment of new enterprises, both public and private, through rediscount operations and by collaborating in the reorganization of existing companies (Ocampo et al. 2018; Ocampo & Torres 2021). Since then, national development banks such as the Industrial Development Institute have mostly acted as second-tier lending institutions. A second-tier bank, otherwise known as a rediscount financial institution, lends money to other financial institutions so that they can on-lend to their own clients.

Second-tier development banks often receive funding from the government or directly from borrowing in domestic and foreign capital markets. They differ from first-tier banks (public and private), which provide daily banking services like savings and chequing accounts, mortgages, credit cards and other services such as direct lending to clients. Smaller financial institutions can obtain loans from rediscount institutions at generally lower interest rates than they could secure elsewhere, which enables them, in turn, to lend to individuals and businesses at more competitive interest rates. The purpose of second-tier banks is to create a support system that aids in maintaining the flow of money in the economy. These banks have played an important role in the Colombian economy during both state- and market-led phases of development.

From 1951 to 1967, when the government pursued policies of import substitution industrialization (ISI), the BR acquired the functions of a development bank. The government also created various investment funds managed by the BR to support different sectors of the economy such as coffee, livestock, export promotion, industry and electricity generation (Kalmanovitz 2015; Ocampo et al. 2018; Ocampo & Torres 2021). During this period, the

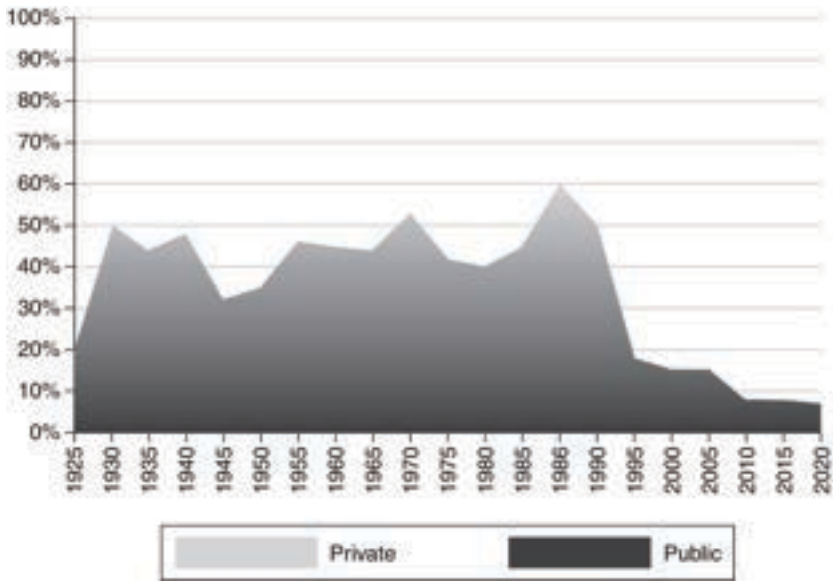

Figure 5.1 Composition of the banking system by assets between 1925 and 2020.

Source: Adapted from Ocampo & Torres (2021, 160).

involvement of the public banking sector in the country's economy began to expand, experiencing a significant increase throughout the 1970s and 1980s, as illustrated in Figure 5.1 (Kalmanovitz 2015; Ocampo & Torres 2021).

In 1968, the government established the Financial Urban Development Fund (Fondo Financiero de Desarrollo Urbano, FFDU), which was used to finance municipal projects such as purchasing land for recreational parks and water and sanitation infrastructure. The FFDU acted as a rediscount entity, financing loans administered by the BR, which were granted to municipal governments through commercial banks and financial corporations (DNP 1972; Banco de la República 1970; Domínguez Torres & Uribe Botero 2005; Hernández & Jaramillo 2017). The main intermediary institutions in the rediscounts were public banks such as the Caja Agraria and the Central Mortgage Bank (Banco Central Hipotecario, BCH) as well as private commercial banks. FFDU loans were capped at a maximum term of ten years, with a grace period of one year, and amortization was gradual and planned in uniform annual instalments. Smaller cities with a population between 30,000 and 350,000 received a lower interest rate of 14 per cent per year, and cities with 350,000 inhabitants or more were charged 15 per cent (DNP 1972). This fund was suspended only two years later in 1970, due to a lack of resources. In 1974, the management of the FFDU was transferred to the Central Mortgage Bank (Hernández & Jaramillo 2017, 235).

The gradual weakening of the state-led ISI process and the determination of governments in power from 1958 to 1979 to stimulate economic development through opening up the economy to global market forces encouraged a tentative shift in policies from the 1960s onwards. Although development in this period was state-led—for example, the BR played a central role in stabilizing the national currency—the country was already entangled in the dynamics of economic globalization. Colombia had a thriving coffee export market and had acquired considerable foreign debts to finance the construction of railways, roads and public services (Kalmanovitz 2015). In the 1970s, the government was already considering promoting the liberalization of import and export markets, which would become standard neoliberal restructuring policies across Latin America within a decade. However, this process was interrupted by the deep financial crisis that hit the region in the early 1980s known as the "lost decade" (Palacios 2004). In Colombia, the government dealt with this widespread economic crisis by liquidating various financial entities and nationalizing several private banks such as the Bank of Colombia (El Banco de Colombia), currently known as Bancolombia. As a result, and somewhat paradoxically, in the context of neoliberal structural adjustment in the 1980s, public banking grew in strength while private banking deteriorated (Ocampo 2021) (see Figure 5.1 above).

The trend towards economic liberalization resumed in the late 1980s and early 1990s. Colombia saw an unparalleled era of institutional and economic policy transformation between 1989 and 1992 as the social and political crisis reached its peak (Suarez 2021). The Colombian state's legitimacy was at stake on all fronts, so its reconstruction was entrusted to a collective, popular-based agreement: the Political Constitution of Colombia of 1991. The Constitution of 1991 and subsequent legislation transformed the public banking system as well as the way that public services were delivered, as will be discussed in further detail below. The new constitution made the BR more independent from the central government, and new regulations prohibited it from lending money to the government. Its role was narrowed to a focus on inflation targeting—a role widely associated with the deepening of neoliberal finance-led structural adjustment policies in the Global South.

In the restructuring process, the development functions of the BR were delegated to three newly established development banks: Findeter was established in 1989 with a mandate to finance local infrastructure development; Finagro was established in 1990 to finance the agricultural sector; and Bancóldex was established in 1991 to finance non-traditional Colombian exports (Ocampo & Arias 2018) (see Table 5.1). While creating new public sector financial capacity, the government simultaneously sold off many state-owned enterprises in processes that favoured foreign investors to fulfil the government's efforts to attract foreign direct investment (Kalmanovitz 2015). Furthermore, the path to privatization was paved for banks that had been nationalized during the 1980s crisis (such as Banco de Colombia). Subsequently, almost all national development banks like the Central

Table 5.1 History of Colombia's system of development banks

Entity	*Predecessor funds managed by BR*	*Sector*	*Dates*
Central Mortgage Bank		Mortgage market	1932–2001
Municipal Development Fund		Infrastructure for departments, intendancies, police stations, and municipalities	1940–50
Industrial Development Institute		Industrial development	1940–2002
Financiera Energética Nacional (FEN)/ Financiera de Desarrollo Nacional (FDN)	Electric Development Fund	Energy infrastructure	1982–2011
Territorial Development Financial Institution (Findeter)	Financial Urban Development Fund (FFDU)	Urban and regional infrastructure	1989–
Financial Fund for the Agricultural Sector (Finagro)	Agricultural Development Fund	Agriculture	1990–
Foreign Trade Bank of Colombia (Bancóldex)	Export Promotion Fund	Non-traditional exports/ business development	1991–

Source: Adapted from Ocampo & Arias (2018, 170).

Mortgage Bank were either sold or liquidated. Only the Caja Agraria, currently known as Banco Agrario, remained in public hands. Between the 1990s and the early 2000s, the majority of first-tier public commercial/retail banks, such as Banco Ganadero and Bancafé, had already succumbed to privatization (Ocampo 2021).

As Ocampo and Torres (2021) argue, the continued existence of second-tier national development banks such as Findeter helped to mitigate the negative effects of the dissolution of first-tier commercial/retail public banks in the 1990s. Overall, however, the participation of national development banks in the economy declined dramatically between the mid-1980s and the 1990s. As a percentage of the assets of financial institutions, the public development banks' share fell from 17 per cent in 2003 to 10 per cent in 2023 (see Figure 5.2). Nonetheless, Findeter's share of the total financial assets has remained fairly steady and even increased between 2005 and 2023, while other national development banks serving the export and electricity sectors have experienced relative decline (Ocampo & Torres 2021).

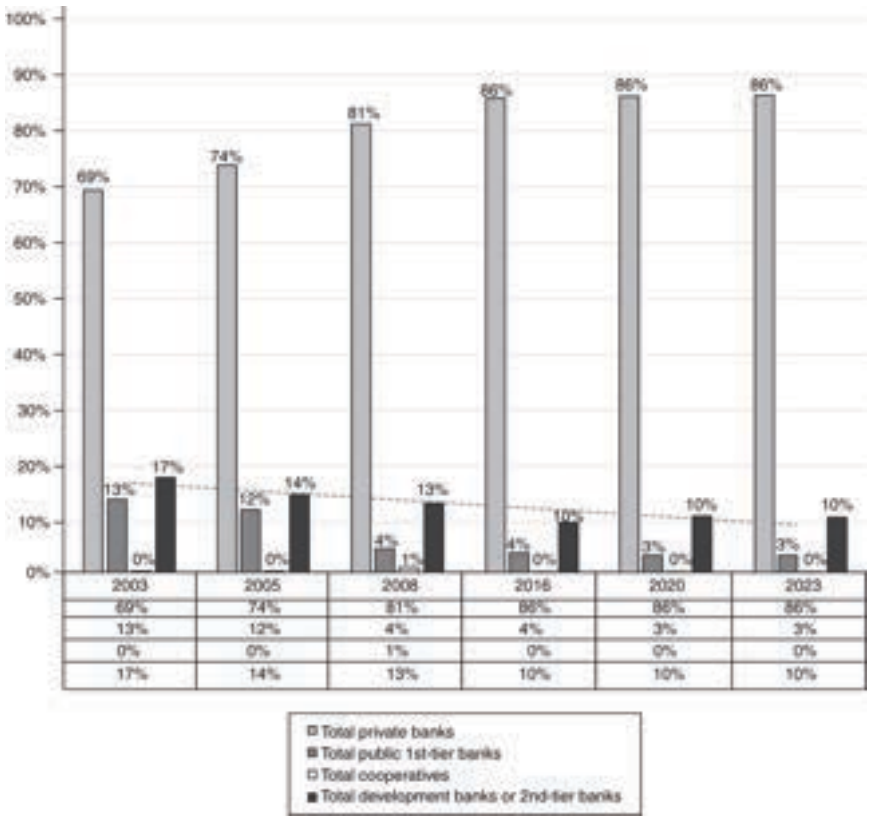

Figure 5.2 Composition of the national banking system by assets.

Source: Elaborated by the authors using data from the Superintendency of Finance of Colombia; the private sector includes both domestic and foreign institutions.

The Colombian water and sanitation sector

At the turn of the 20th century, water supply and sanitation (WSS) in Colombia were in the hands of small private companies. These private companies were unable to meet the growing demand for quality water in rapidly growing urban areas. Some local governments, in cities such as Medellín and Bogotá, made the decision to acquire WSS companies by municipalizing the services. In 1913, the national government granted municipal councils the authority to create administrative boards for public utility companies in an early move towards decentralization that transferred the responsibility for management of WSS to the local level (Arias et al. 2022).

From the 1920s onwards, a framework of public ownership began to emerge (Jaramillo 1995). Some departments of the country started constructing small

water systems in urban areas, occasionally with the support of private capital. Water-related diseases began to prevail in densely populated areas where private companies failed to invest adequately, imposed rationing and continually increased tariffs. These problems resulted in public rejection of the private model of service delivery and prompted state intervention (Jaramillo 1995; Vanegas 2004).

A significant challenge for municipalities was the lack of financing, leading many municipal governments to seek support from the national government and loans from private local banks. The private banks granted loans but demanded participation in the administrative boards of the water operators, giving them influence over decisions regarding tariffs, financial management and infrastructure expansion. In this way, the first measures related to corporatization (that is, the creation of arm's length state-owned utilities) were introduced in Colombia in the early 20th century, long before the introduction of New Public Management in other countries in the 1980s (Arias et al. 2022, 34).

Over the 20th century, the national government played a significant role in financing the expansion of WSS. For example, it established a Special Aqueducts Section within the Ministry of Public Works in 1936 and created the Municipal Development Fund (Fondo de Fomento Municipal, FFM) in 1940. The government allocated 1 per cent of national fiscal resources to the Municipal Development Fund over the next 10 years to finance WSS expansion (Domínguez Torres & Uribe Botero 2005). The decree specified that this fund would also receive income from certain taxes and profits of state-owned enterprises. Additionally, it received sums from the national budget, departments and municipalities. The allocation of resources from the fund took the population of the municipalities into account (Decree 503, 1940).

From the 1950s onwards, the administration of the WSS sector underwent many changes. In 1950, the central government created the National Institute for the Promotion and Development of Local Works (Instituto Nacional para la Promoción y Desarrollo de Obras Locales, INSFOPAL), which was linked to the Ministry of Economic Development. In 1968, INSFOPAL was transferred to the Ministry of Health. INSFOPAL continued to serve larger urban populations, and through the National Institute of Health (formerly known as the National Institute of Special Health), the Ministry set up a special health programme to serve smaller municipalities. The National Health Institute created the Rural Basic Sanitation Program (Programa de Saneamiento Básico Rural) to encourage community self-management, a programme which was in operation from 1968 to 1987. During that time, it managed to build about 2500 rural water systems, thereby improving the quality of life for at least two million people (Comisión Reguladora de Agua et al. 1997). However, with decentralization measures implemented between 1987 and 1990, the Rural Basic Sanitation Program was eliminated, and its responsibilities were transferred to departmental authorities. The result was a loss of valuable experience and knowledge of rural community water and sanitation management, which has never been entirely recuperated (Carrasco 2016). By the end of the 1980s, the central government dissolved INSFOPAL,

which only reached half of Colombia's municipalities (Hidroestudios 1991). It transferred the responsibilities for financing and managing WSS projects to the FFDU, which, as noted in the previous section, is the direct predecessor of Findeter (see Table 5.1) (Departamento Nacional de Planeación 1991).

In the 1980s, public investment was primarily directed towards the country's largest cities with only minor attention paid to intermediate cities. Rural areas were almost completely neglected. On average, investment in the WSS sector in the 1980s amounted to approximately US$150 million per year, with 11 per cent coming from central government transfers; 9 per cent from capitalized national gross savings allocated to the sector; 36 per cent from external credit; 5 per cent from territorial entity transfers; and 39 per cent from internal company-generated funds (Hidroestudios 1991). The bulk of this investment, 60 per cent, was directed towards the country's three major cities—Bogotá, Medellín and Cali—while 35 per cent was directed to intermediate cities and a measly 5 per cent to rural areas (Hidroestudios 1991). This uneven investment exacerbated regional disparities in Colombia, a nation marked by high levels of social inequality amidst a prolonged armed conflict.

In the 1990s, other entities carried out WSS projects, but again, the investment was mostly channelled to urban areas. The Constitution of 1991 involved a withdrawal of the state in the direct provision of WSS services, and further decentralization delegated the responsibility of service delivery to municipalities and regional governments. The municipalities did not have the technical or financial resources to deal with the level of need, and many turned to the private sector, which only served to further exacerbate regional gaps in service delivery (Carrasco 2016). To make a bad situation worse, between 2006 and 2014, the central government encouraged municipal

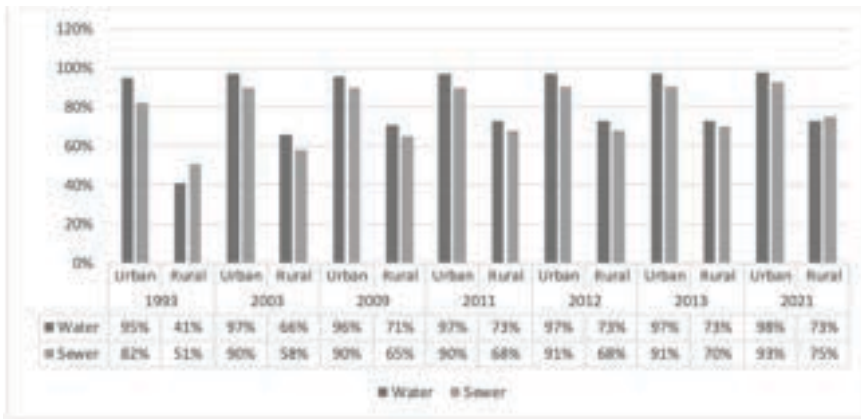

Figure 5.3 Coverage of water supply and sewerage in Colombia.

Sources: Compiled from Hidroestudio (1991); Departamento Nacional de Planeación (1991; 2013); Comisión Reguladora de Agua et al. (1997); CONPES (2005); and Republic of Colombia (2021).

administrations to allocate a significant portion of their transfers to projects in urban areas of municipalities, not rural ones. The net result of decentralization and privatization in the WSS sector in Colombia has been underinvestment in rural areas of Colombia (Comisión Reguladora de Agua et al. 1997; Carrasco 2016). Figure 5.3 presents the gaps in service coverage in urban and rural areas based upon available data.

Today, while Colombia boasts high rates of access to potable water compared with many countries in Latin America and the Caribbean, it lags significantly behind Chile and Brazil. According to the United Nations (2022), the rate of access to "safe" water in Colombia is 74 per cent at the national level, but 81 per cent in urban areas and only 40 per cent in rural areas. Focusing on the percentage of the population that has access to services obscures the problem of water quality as well as additional challenges facing the sector, such as the increase in demographic pressure in both cities and rural areas, the way that climate change is affecting water source availability, and the rising number of disputes over water in the context of unequal power relations between communities and extractive and industrial enclaves (López 2016; Budds 2018).

For the water supply and basic sanitation sector, the new Constitution of 1991, with its strong orientation towards decentralization, paved the way for Law 142 of 1994 by which the regime of domiciliary public services was established. Following neoliberal guidelines, Article 15 of this law provided municipalities with options to transform service provider companies into Industrial and Commercial State Enterprises (Empresas Industriales y Comerciales del Estado), owned by the state, departmental or municipal governments; mixed-ownership companies, with both public and private participation; or private companies. Although the corporatization of these institutions dates to the 1970s, this new law made it the norm. However, many cities resisted, and several of them, such as Medellín and Bogotá, managed to retain ownership of the companies under the supervision of local governments (Superintendence of Public Services 2021; Arias et al. 2022). Despite this, the law established strict market economy regulations.

The net result of decades of decentralization and privatization is a fragmented archipelago of WSS service provision. As of December 31, 2020, there were 2711 providers of WSS services (Superintendence of Public Services 2021). Some of these providers specialize solely in either water or sewage services, others deliver both, and some include waste management. In urban areas, 38 per cent of WSS services are delivered by anonymous societies (S.A.)—corporations with shareholders, limited liability and a board of directors, regulated by the Commercial Code and requiring at least five shareholders; 24 per cent through direct provision by the municipality; and 14 per cent are managed by other forms of industrial and commercial state enterprises. In terms of ownership, 52 per cent of water operators are state-owned, 26 per cent are private and 15 per cent are mixed public–private (Superintendence of Public Services 2021).

Community-based water management organizations, which play an important role in providing water services to marginalized populations

in Colombia, are not reflected in the statistics above (Roca-Servat et al. 2020). According to the National Network of Community Aqueducts (Red Nacional de Acueductos Comunitarios [RNAC] 2022), there are around 30,000 community-based water management organizations in Colombia. Considering that there are approximately 35,000 hamlets as well as numerous informal settlements that also access water through community efforts, there are likely thousands of others as well.

Findeter and public water

Findeter was established on November 14, 1989, by Law 57 as a public corporation, linked to the Ministry of Finance and Public Credit. Under this law, the government also transferred the Central Mortgage Bank to Findeter, along with the responsibility for creating and executing the Sectoral Adjustment Plan (Banco Central Hipotecario 1987; Cuervo 1994). Six months after Findeter's founding, the government also transferred to it the assets, liabilities and loan contracts that had previously corresponded to the FFDU (Ocampo 2015).

Findeter is governed by a general assembly of shareholders, a board of directors and fiscal oversight. The general assembly of shareholders, consisting of Findeter's owners, reveals that as of July 2023, the central government holds 92.5 per cent of Findeter shares through Grupo Bicentenario S.A.S., a public holding company it established in 2020. The remaining shares are dispersed among the 32 departments nationwide or, in the case of the Norte de Santander department, their holding company, Ifinorte (Findeter 2023; Decree 492, 2020, cited in Findeter 2022a). Despite being wholly owned by government entities, Findeter operates under private law, making it subject to the same regulations as private banks within the country (Findeter 2023).

For most of its history, Findeter has exclusively acted as a second-tier lending institution that obtains its financing from various sources, including time deposits, government financing, issuing bonds in international markets and loans from multilateral development banks (Ocampo & Torres 2021; Findeter 2023). Its primary function has been to channel these resources towards first-tier financial institutions, such as commercial banks, cooperatives and others, with the aim of offering direct loans to clients with subsidized interest rates and other benefits to support projects in key sectors such as infrastructure, energy, water, transportation, health and ecological projects undertaken by municipalities, departments and other public and private enterprises (interviews 4 and 5, September 2022; Ocampo & Torres 2021). However, during the COVID-19 pandemic, the government allowed Findeter to take on the functions of a first-tier bank enabling it to provide direct credit to public service companies (Findeter 2020; Roca-Servat et al. 2021). In the following section, we describe the role that Findeter plays as a rediscount entity, the expansion of its role to include first-tier banking functions during the COVID-19 pandemic and its efforts to address regional disparities in WSS services.

Findeter as a rediscount entity

Findeter's main activity is to channel economic resources with subsidized interest rates and other benefits to support projects in key sectors such as infrastructure, energy, water, transportation, health and ecological projects carried out by municipalities, departments and public and private enterprises. This is accomplished through intermediary financial institutions using two mechanisms (interviews 4 and 5; Ocampo and Torres 2021). The first is that a water operator can request a loan from Findeter, which channels the resources through a first-tier financial institution such as a private commercial bank or a cooperative. The second is that the water operator can apply directly to a first-tier institution, which, in turn, can request resources from the public banking system (interviews 7 and 8; Bancóldex 2023).

When negotiating the terms of these loans, including the size of the loan and the specific payment requirements, Findeter evaluates both "the financial capacity of the applicant and the analysis conducted by the first-tier bank" (interview 5). Nevertheless, Findeter employees emphasize that as a national development bank they aim to consider other aspects of a project beyond narrow financial criteria, including the project's broader context, the characteristics of the territory and the target population, as well as the issues it aims to address (interview 5). Findeter must also have a deep understanding of the financial statements and ratings of the first-tier banks through which it disburses funds. Regarding the terms of payment, Findeter has established itself as a public development bank that provides long-term funding. The repayment terms for the rediscount credits offered by Findeter vary from 10 to 20 years, with grace periods of up to 3 years.

The cost of loans depends on various factors. Findeter sets the rediscount rate that will be applied to the intermediary financial institution, considering factors such as inflation, exchange rate fluctuations, the Fixed-Term Deposit Rate (Depósito a Término Fijo), the impact of monetary policy on variable capital, and the Reference Banking Indicator (Indicador Bancario de Referencia). The Reference Banking Indicator was created in January 2008 by the private sector with the support of the BR and other financial institutions (Banco de la República 2023). These rates inform the nominal interest rate at which banks lend money. At the time of the interview with a senior official from Findeter (interview 5), the Reference Banking Indicator was 9 per cent.

The financial intermediary will add additional points and will be responsible for determining the rate that the credit user will ultimately pay. Similarly, the risk of default falls on the various intermediaries "since they are the ones who are obligated to pay Findeter, even if the ultimate beneficiary does not meet their payments" (Findeter 2023, 383). To understand how this process functions, Findeter's Commercial Manager F. Carrero Parada provided the following example:

Table 5.2 Percentage of Findeter loan disbursements by key intermediaries (first-tier banks)

2019	Davivienda: 27.6% Bancolombia: 19.6% Banco de Bogotá: 13.1% Banco de Occidente: 12.4%
2020	Bancolombia: 26.8% Davivienda: 22.3% Banco de Bogotá: 17.3% Banco Bilbao Vizcaya Argentaria Colombia S.A.: 11.5%
2021	Bancolombia: 15% Davivienda: 14% BBVA: 7.6% Banco de Bogotá: 7.4%
2022	Davivienda: 30.6% Findeter: 25.4% Banco de Bogotá: 8.4% FDN: 7.8% Scotiabank: 6.0% Bancolombia: 4.8%

Sources: Findeter's Annual Management Reports (2019; 2021; 2022b; 2023).

> When we have offset rates, we set limits for the intermediary bank so that the benefit generated by the rate is not captured by the bank but rather transferred to the end customer. […] First-tier banking always offers credit lines. For example, if you need a loan to finance a car, you get quotes from BBVA, Bancolombia, Davivienda, to see which one seems better. […] The same applies to water operators. They have learned that when they have funding from Findeter, they should inquire about the costs of first-tier bank intermediation. We tell the operator, "You already know that my funding costs IBR + 0.30, so the bank cannot charge you more than IBR + 4.30, but you can also negotiate not to be charged 4% because you are their client, because you already have business with them." From there they can negotiate and secure the best rate in the market. The choice of the intermediary bank is up to the client, and it's a free choice.
>
> (Interview 5)

According to the sustainability and management reports of the last four years, Findeter has developed strong relationships with first-tier, commercial private banks, as can be seen in Table 5.2. As of 2022, Findeter itself appears on the list as one of the main intermediaries due to changes to regulations during COVID-19 that allowed it to act as a first-tier bank. That is, Findeter was allowed to lend directly to municipalities and so on without having to go through private commercial banks.

As demonstrated in Figure 5.4, the disbursements of credit to WSS fluctuate from year to year, but in general, the amount has been trending downwards

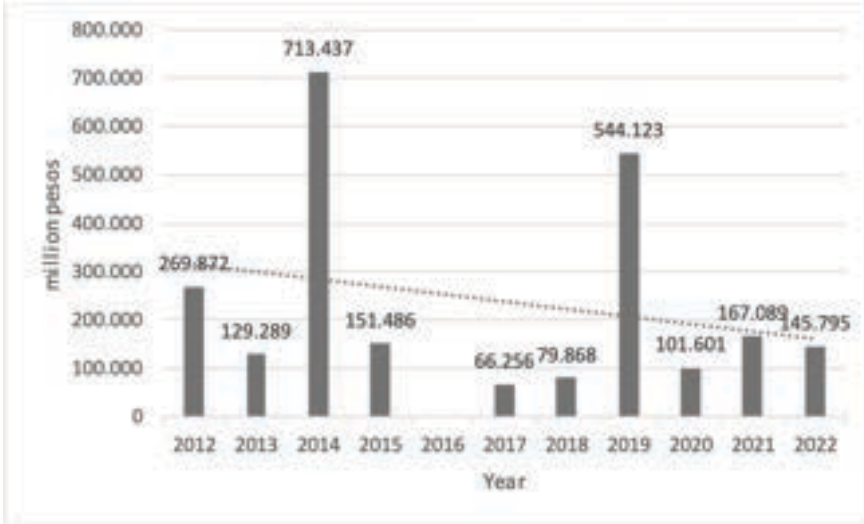

Figure 5.4 Rediscount credit disbursements of Findeter for WSS through years in COL$ million.

Source: Findeter's Annual Management Reports (2012 to 2023).

over the last decade. However, as noted further below, since 2020 Findeter has also been providing direct loans to the WSS sector that are not accounted for in Figure 5.4.

Findeter and COVID-19

In 2020, the government granted Findeter authorization to operate as a first-tier bank while continuing in its role as a second-tier development bank, which enabled it to carry out direct credit operations to finance projects and activities. Two years prior to the onset of the COVID-19 pandemic, Findeter was already assessing the feasibility of providing direct loans. Their analyses were based on the premise that, "by channeling resources through commercial banks—with the intermediation margin charged by banks—the interest rate, even if competitive, did not reach 100% as direct benefit to the territorial entities" (Findeter 2020).

The COVID-19 crisis prompted the government to expedite the implementation of this strategy. When the state of emergency was declared in March 2020, the Colombian government considered access to safe water a basic necessity to protect public health along with physical distancing. The profound inequalities in access to safe drinking water, which has been a constant feature of the country's history, became even more evident during

the COVID-19 pandemic (Roca-Servat et al. 2021). In order to mitigate the health crisis, the government introduced a series of measures to guarantee continuity of service. In June 2020, Decree 819 established that service providers were required to subsidize public services starting on July 31, 2020, without generating interest or additional costs for users in the lower strata (Findeter 2023). To achieve this, the government created new credit lines to be administered by Findeter.

This decision represents an important shift in the role that national public development banks have played in financing development in Colombia (Ocampo et al. 2021). In 2020, the government allocated a total of US$213 million to the Emergency Mitigation Fund (Fondo de Mitigación de Emergencias) through Findeter (Findeter 2020), which was aimed at economic stimulation. In addition, the government contributed US$102 million to Findeter to be disbursed in direct credit lines with the purpose of financing 626 development projects across 104 municipalities in 26 departments (Decree 468, cited in Findeter 2020).

Findeter opened a time-limited Special Direct Credit Line for Companies of Domiciliary Public Utility Services (Línea Especial de Crédito Directo para Empresas de Servicios Públicos Domiciliarios) (Decree 581) worth US$70 million (Findeter 2020). These resources could be requested until December 31, 2020, or until resources were exhausted. This line of credit comprised highly preferential loans with a 0 per cent interest rate, repayment terms of up to 36 months, and a grace period of three months (Findeter 2020; interview 10). This funding was intended to provide public utilities with "liquidity or working capital, enabling them to implement payment deferral measures instituted by the national government to mitigate the effects of the economic, social, and ecological emergency" (Findeter 2020, 109). Just over half of the 156 companies (52 per cent) that benefitted from the Special Direct Credit Line were WSS service providers (Findeter 2020).

The Bogotá Waste and Sewerage Company was one of the public water operators that received a direct loan from the Special Direct Credit Line. The US$1.2 million loan helped the public water operator maintain services in the context of the heavy financial losses it was facing. Although residential consumption during the lockdown increased, consumption in commercial and industrial sectors plummeted. Furthermore, many residential water service users were unable to pay their bills (interview 10). To address the crisis, Bogotá Water and Sewerage Company had to reconnect water services in 40,000 households that had previously been disconnected, which resulted in a loss of US$5 million in revenues (Arias et al. 2022). In total, revenue collected from March 20, 2020 (the start of the lockdown), to July 31, 2020, was 14.25 per cent lower compared to the same period in 2019 (Concejo de Bogotá 2020).

The nature of essential service providers that accessed direct credits until 2022 and the amounts received were mostly private or public–private entities, as shown in Table 5.3.

Table 5.3 Nature of public utility service providers who accessed direct credits 2020–22, COL$

Domiciliary Public Utility Service Providers (not only WSS)	*Numbers of projects approved*	*Approved transaction amount*
Public	28	98.214 million (US$24.6 million)
Private	148	232.949 million (US$58.4 million
Public–private	28	85.449 million (US$2.1 million)
Total	204	416.612 million (US$104.5 million)

Source: Transition Report from Findeter (2022b).

In terms of its overall operations, however, a review of Findeter's management and sustainability reports reveals a pro-public trend since the pandemic. In 2014, the public sector received 39 per cent of disbursements, with 61 per cent going to the private sector. By contrast, in 2021, disbursements to the public sector accounted for 51 per cent while the private sector received 49 per cent. And in 2022, there was a slight shift in this ratio in favour of the private sector, with 45 per cent allocated to entities in the public sector and 55 per cent in the private sector. It is difficult to say whether this trend will continue now that the COVID-19 crisis has subsided.

Uneven development and the limits of debt financing

Economic development is a highly uneven process marked by cycles that sometimes promote certain spaces at the expense of excluding others. The heterodox "development" view of public banks, typically advanced by Keynesian-inspired economists, argues that public banks can play a positive role in the economy when they are "able and willing to facilitate economic development in ways that private banks are unwilling or incapable of doing, particularly when it comes to longer-term investments and less profitable but no less socially significant sectors" (Marois 2022, 359), such as the WSS sector (interview 6; Ocampo & Arias 2018; Ocampo & Torres 2021; Ocampo et al. 2018). An alternative "dynamic view" suggests that while public banks function within financial markets because they are positioned within the public sphere, they can also be shielded from competitive and profit imperatives when governments enable them to do so through public policy (Marois 2022; McDonald et al. 2021; Reis 2022). In other words, public banks that are guided by a strong pro-public mandate backed by guarantees have more potential to reach communities that are not considered credit-worthy by private banks. Public banks that do not have strong pro-public mandates, by contrast, are more likely to act more like private banks and pursue profitable investments. Findeter, as a national development bank, is also subject to these tensions.

While it is assumed that Findeter's services and credits are accessible nationwide, practical access depends on the varying state presence, as Findeter is an integral part of it. This presence exhibits different practices based on the region, its proximity to the country's centre, the local context and various involved stakeholders (Muzzopapa & Villalta 2011). As the dynamic view of public banks emphasizes, Findeter—like any public development bank—is comprised of actors with specific interests who establish relationships with local elites who control resources and decision making (Marois 2021). These relationships play a role in how Findeter prioritizes projects and the location of its investment (Serge 2012).

A review of Findeter's annual reports reveals that technical and financial resources have been concentrated in regions where the country's major cities are located, such as the Capital District of Bogotá, Atlántico, Antioquia, Bolívar, Casanare, Meta, Santander and Valle de Cauca (see Table 5.4). By contrast, the most peripheral departments of Putumayo, Guainía, Vichada, Vaupés and San Andrés have not been among the top departments to receive disbursements from Findeter—at least not in the past 12 years.

Nonetheless, more recently, there have been some efforts to expand services to rural and informal areas of Colombia. In March 2017, strong rains in the Putumayo department led to the overflow of the Mocoa, Mulato and Sangoyaco rivers, resulting in over 335 casualties as entire neighbourhoods were buried in mud (W Radio 2018). Various WSS systems also faced severe challenges. Immediately following the disaster, the Findeter staff visited this

Table 5.4 Departments that received the most Findeter financing in all sectors

Years	*Departments*
2010	Capital District of Bogotá; Atlántico; Antioquia; Bolívar; Santander
2011	Capital District of Bogotá; Valle del Cauca; Atlántico; Antioquia
2012	Capital District of Bogotá; Santander; Casanare, Atlántico; Antioquia
2013	Capital District of Bogotá; Valle del Cauca; Antioquia; Santander; Atlántico
2014	Capital District of Bogotá; Santander; Atlántico; Valle del Cauca; Meta; Antioquia
2015	Antioquia; Capital District of Bogotá; Santander; Valle del Cauca; Atlántico
2016	Capital District of Bogotá; Antioquia; Valle del Cauca; Atlántico.
2017	Antioquia; Capital District of Bogotá;
2019	Antioquia; Atlántico; Capital District of Bogotá, and Valle del Cauca.
2020	Capital District of Bogotá; Antioquia; Santander; Valle del Cauca and Bolívar
2021	Capital District of Bogotá; Antioquia; Santander; Valle del Cauca; Bolívar.
2022	Capital District of Bogotá; Antioquia; Valle del Cauca; Atlántico.

Source: Constructed using data extracted from Findeter's annual reports.

remote rural area. During these interactions, Findeter, in collaboration with the Risk Management Unit (which oversees the implementation of disaster risk management for the prevention and response to disasters in the territory) presented the project to the community for improving and adapting the water supply and sewerage system in Mocoa. One social leader from the community recalls, "I remember a young man from Findeter saying, 'If you encounter any issues, please contact me directly. I'm interested in keeping track of the natural resource management of the water system.' But then they left, and the contact was lost" (interview 1). She reported that after these initial meetings, the responsibility of the project shifted to the Risk Management Unit, which, in her opinion, disregarded many of the community's recommendations:

> [T]he decisions were made in a very uncompromising manner. Initially, the feeling within the community of Mocoa was like a form of re-victimization in the face of what had happened. Because there was a torrential flood, and in one way or another, we all thought about rebuilding Mocoa in line with the dynamics of the old Amazonian way, taking into account people's opinions. However, the institutional actions brought us down from that ideal, and the reality turned out to be completely different.
>
> (Interview 1)

In 2019, Findeter reported that it had approved a credit of US$7.8 million to the municipality of Mocoa to reconstruct the water supply system, which would benefit 45,947 inhabitants (Findeter 2019). But six years after the flooding disaster, the residents of the municipality of Mocoa still lacked access to potable water. A recent report by the Office of the Attorney General (2023) found that 94 per cent of the credit for the reconstruction of this water supply system had been executed. But according to one community leader in the municipality of Mocoa, the capital of Putumayo department, "no municipality in Putumayo has access to potable water" to this day (interview 1). The National Planning Department reports that the Putumayo department received the lowest score in the entire country for failing to achieve the goals of its departmental water plan (Departamento Nacional de Planeación 2023). The Office of the Ombudsman (2023) has also expressed concern.

Given the history of uneven development in Colombia, it will take strong political will and a clear mandate if Findeter is to correct regional disparities. As a senior official with Findeter put it in an interview, "Findeter is [a government institution] … . [W]e adhere to public policies and try to help implement them, so it is necessary for us that the government defines how it wants and what it wants us to do" (interview 5). In this sense, the direction the bank takes will always be strongly influenced by the current government. This is in line with public banking practices globally, although there is

significant variation in how government influence is integrated within bank governance models (Marois 2021).

One indication that the government is moving in a pro-public direction is the openness the current government has shown to community-based water managers. The election of the government of President Gustavo Petro (2022–26), who campaigned on an anti-neoliberal platform, provides a political opportunity to reform the way that public institutions operate. The last three years in Colombia have been marked by the circumstances of COVID-19 and a shift to a left-wing government with positions distant from the elite that traditionally has governed the country. Although free market principles will not completely disappear, changes are evident. In the National Development Plan (NDP) 2022–2026 entitled "Colombia, a global power of life," territorial planning is proposed around water resources. In an unprecedented move, the NDP included proposals from the National Network of Community Aqueducts to protect and strengthen community water management (articles 272, 273 and 274 of the NDP 2022–2026). In 2023, Findeter and the Ministry of the Interior launched a specific call for lending projects for various types of social organizations, although at the time of writing the conditions and requirements were still under development (Interior Ministry 2023). Further research will be required to follow-up.

Conclusion

This chapter analyzed Findeter's activities in the WSS sector. We scrutinized the historical evolution of public banking and WSS sectors throughout the 20th and the early 21st centuries, revealing that their evolution did not follow a linear progression. It is difficult to divide economic history in Colombia into distinct periods in which development has been state- or market-led (Arias et al. 2022). Instead, changes have responded to socio-economic and political dynamics, both domestic and international. National development banks have played a significant role in the WSS sector in Colombia throughout these periods, as exemplified by Findeter and its predecessors (Ocampo et al. 2021).

We also argued that during the 2020 COVID-19 pandemic, Findeter played a central role in guaranteeing the right to access drinking water services by providing interest-free loans to water operators. An illustrative case is the loan granted to the Bogotá Water and Sewerage Company, which facilitated the reconnection of households and mitigated the drop in revenues it was experiencing. We also argued that the central government relied on national development banks such as Findeter to support public service providers and achieve important policy goals during the crisis. This is reflected in the fact that they introduced new regulations and control mechanisms to allow Findeter to issue direct credits. However, given the exceptional nature of the pandemic, the recent efforts to strengthen this type of credits, and

the unstable market dynamics that have followed, it is difficult to predict whether this trend will continue.

Moreover, it is important to recognize that national development banks were historically established as second-tier banks as a way of correcting market failures and focusing on sustainable development goals. Changing their operations as a first-tier or direct retail approach has its advantages and disadvantages. On the one hand, Findeter can now strategically identify key development projects to support, and interest rates can be kept lower for public sector clients. But Findeter can no longer draw on the lending and credit scoring expertise of financial intermediaries and must now assume the risk of non-payment directly (Weiss 2015). Under the second-tier model, the public development bank draws on the branch network, as well as the lending and credit scoring expertise of the financial intermediary.

In certain cases, such as Mocoa in the Putumayo department, there is a call for increased community participation in the planning of projects undertaken by Findeter, and regional and national entities. This demand underscores the fact that, despite global declarations, regulations and discourses about universality that are associated with the public sphere, public institutions are not monolithic. Public banks operate not only within the public sphere of nation-states but are shaped by the interactions amongst local and global powers (Marois 2022). Meanwhile, local and global powers have demonstrated a strong urban bias in Colombia despite the fact that the greatest service deficits are in rural areas. The majority of Findeter's technical and financial resources have been directed toward urban areas, emphasizing the need for a more substantial presence in peripheral regions. For example, we highlighted the fact that Findeter only began allocating resources to the Putumayo department after the 2017 flood, raising questions about whether efforts may be better spent to prevent risks rather than react to them after they happen.

In terms of future research, community water management systems in rural and peripheral areas in Colombia are fundamental players in providing services to marginalized communities, as well as promoting community autonomy and in the protection of water resources (RNAC 2022). In this context, state-backed public banks like Findeter could play a more important role in strengthening these community water services by offering loans on more flexible terms and with preferential interest rates, as modelled by the Banco Popular in Costa Rica (see chapter by Spronk et al. in this volume) and in many European countries (see Marois & McDonald 2023).

It is also important to investigate the role of development banking in water protection and conservation. Ensuring the human right to water requires more than just large infrastructure projects that expand the volume of water; there is a need to explore alternative visions. These issues have

become even more pressing in the context of climate change. Further dialogue with local communities is needed, underscoring the complexity of WSS and emphasizing the importance of community involvement, particularly in underrepresented areas, in the pursuit of equitable and sustainable water access.

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Appendix A: Interviews conducted

Interview	*Name*	*Role*	*Date*
1	Anonymous	Community leader from the municipality of Mocoa, Putumayo	September 17, 2022
2	Anonymous	Former employee of Findeter	September 4, 2023
3	Anonymous	Water and Basic Sanitation Management	September 20, 2022
4	S. Blanco	Economic Research Department of Findeter	September 20, 2022
5	F. Carrero Parada	Commercial National Management of Findeter	September 20, 2022
6	L.M. Cuervo	Economist	September 23, 2022

Interview	*Name*	*Role*	*Date*
7	M. Marín	Urban Management and Territorial Planning, Central American University (UCA)	December 20, 2022
8	D.J. Quijano Portillo	Department of Accounting and Finance, UCA	December 20, 2022
9	G. Reza	Water and Basic Sanitation Management	September 20, 2022
10	A. Rodríguez Enríquez	Treasury at the Bogotá Water and Sewerage Company	September 29, 2022

6 Public banks and public water in Vietnam

Promises and pitfalls

Thuy Truong Dang

Introduction

This chapter examines the financing relationship between the Vietnam Development Bank (VDB) and the publicly owned water operator, Ben Tre Water Supply and Sewerage Joint Stock Company (BEWACO). In the early 2000s, the Vietnamese government decentralized water supply and sanitation management, transferring responsibility to local governments and promoting community participation in an attempt to improve the efficiency of the water sector and encourage investment in water supply infrastructure and increase access to clean water. In the mid-2010s, the government began to promote public–private partnerships (PPPs) to attract private investment, announcing plans to divest from state-owned water supply companies (WSCs) by selling shares to enhance efficiency and service quality (UNEP 2018).

The withdrawal of the government from funding public water operators in Vietnam has since led to a reduction in water supply infrastructure investment, which has affected the quality and reliability of water services, especially in rural and remote areas. Private companies, which took over the operations of some public water operators, were mainly interested in making a profit and often neglected the expansion and maintenance of water supply systems in less profitable areas. Privatization exacerbated the inequality in access to clean water, with residents in urban and wealthier areas having better access to clean water than those in rural and poorer areas (UNICEF 2020, 2022).

In 2021 the Vietnam Water Supply and Sewerage Association (VWSA) noted that there was a significant investment gap in the water supply sector, particularly in rural areas (VWSA 2021). According to UNICEF (2020), only 84 per cent of the population in Vietnam has access to potable water services. This figure may seem high relative to some parts of Southeast Asia but it hides dramatic urban–rural and regional disparities. While the rate of access to safely managed water in urban areas was 97 per cent, it was only 67 per cent in rural areas and below 50 per cent in some provinces in the Central Highlands and the Mekong Delta. The unintended and undesirable outcomes of water privatization was probably one of the reasons for the 2021 Prime

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Minister Decision No. 26/2021/QĐ-TTg, which prescribed that the state henceforth must hold over 50 per cent ownership of newly equitized public water operators. This decision effectively halted any further progress in privatization, reducing sell-offs by over 50 per cent. The 2021 Decision, however, applied exclusively to newly equitized companies and did not require the buyback of shares previously sold.

The advantages and disadvantages of water sector privatization have been discussed extensively in the literature (Katko 2016; Bakker 2005, 2007; Budds & McGranahan 2003; Swyngedouw 2005), raising the question as to how the water and sanitation sector should be delivered (McDonald 2018). So has the challenge of financing water provisioning been raised, although it has yet received comparatively less attention (Fonseca et al. 2021; McDonald et al. 2021). In Vietnam, the finance gap stands as the central challenge in ensuring Vietnam maintains a sustainable and equitable public water sector, requiring substantial investment to meet Sustainable Development Goal 6 (SDG 6), Clean Water and Sanitation for all (Pories et al. 2019). The sector requires new sources of long-term, appropriate financing at low interest rates to support its projects effectively.

Vietnam's public banks have the potential to play a crucial role in helping the country to deliver on SDG 6. With their ability to provide sustainable and affordable policy-based financing, Vietnam's public banks can bridge the finance gap and catalyze the necessary investments in water infrastructure. In this chapter, we argue that the VDB has had an important role in providing supportive, long-term public financing for public water providers in Vietnam, illustrated by the case study of BEWACO (a public water provider) in Ben Tre Province. We argue that VDB lending has positively impacted the ability of BEWACO to deliver clean and equitable water services. However, the VDB could do more, and there is room for improvement in VDB's services. Understanding how VDB can do more can enhance the prospects of public banks supporting public water services in the future.

Methodologically, this study adopted a combination of primary and secondary literature reviews to gather relevant information. Primary sources include bank annual reports, legal documents and BEWACO annual reports. Secondary sources include academic articles and NGO publications. Additionally, in-depth data were collected through in-person interviews with 15 people, online follow-up meetings, and written responses to prepared questionnaires from October 2022 to February 2023 with key informants from VDB and BEWACO in addition to others (see Appendix 1). To maintain confidentiality, the identities and positions of certain interviewees have been withheld.

The chapter is organized as follows. The first section contextualizes finance and water in Vietnam. The second section provides a brief overview of public banks involved in the water sector. The third section describes the relationship BEWACO and the VDB, and is followed by a conclusion that outlines the lessons learned and recommendations.

Contextualizing finance and water in Vietnam

The finance gap

Most of the financing for infrastructure projects in Vietnam comes from public sources of money. As of 2014, investment sources for infrastructure projects in Vietnam were divided among the government (28 per cent), official development assistance (ODA) (37 per cent) and the private sector (35 per cent) (UNEP 2018). ODA funding includes the Asian Development Bank, the World Bank, the Japan International Cooperation Agency, the French Development Agency and the governments of Finland, Denmark, the Netherlands and South Korea. ODA funding has been decreasing, however, and accessing additional sources can be challenging (UNEP 2018; Bùi & Nguyễn 2018; Trujillo et al. 2015).

As mentioned, while household access to piped water in urban areas of Vietnam is relatively high, the rate in rural areas is only 34.8 per cent (UNICEF 2022), requiring significant additional finance (Pories et al. 2019). Baum (2019) projected that from 2021 to 2030, the water supply and sanitation sector (WSS) needs an investment of 0.5 per cent annual GDP, of which 0.4 per cent should come from the government. However, public investment is limited because the increase in public debt in the past decade, which reached 55 per cent GDP in 2018 (Baum 2019).

Since public finances are squeezed by debt, the government of Vietnam has sought investment capital from the private sector (Baum 2019; UNICEF 2018). This has involved the transformation of state-owned enterprises into alternative forms of private operation and management. In response to the challenges posed by increasing public debt and competing investment demands, recent policies have focused on leveraging private capital, predominantly from domestic investors, to meet investment requirements. This has been achieved by adopting various models, socialization,[1] equitization and privatization, including the promotion of PPPs (Trujillo et al. 2015; UNEP 2018; Baum 2019; UNICEF 2022).

The equitization of public water operators

In the early 2000s, Vietnam initiated the conversion of public, state-owned WSS enterprises into joint-stock companies through the sale of equity to private investors, including individual investors and private firms—domestic and foreign. This process of financialization (that is, prioritizing investor returns above all else), which is called "equitization" in Vietnam, was expected to allow for the infusion of private financial capital into the WSS sector. While the government retains a majority ownership position in the newly formed companies, it typically grants minority investors some degree of control over operations. This process is supposed to bring advantages, including improved management and technology through the expertise of the new investors, as

well as greater operational flexibility facilitated by the organizational structure of a joint-stock company (UNEP 2018). However, it raises challenges around equitable access and the influence of cost recovery and profit seeking in service delivery.

The WSS equitization process in Vietnam has been slow (UNICEF 2022). Although initially introduced in 2002, it did not actually start until 2007 (UNEP 2018; Baum 2019; UNICEF 2018). Though slow at first, it reached the targeted level of 50 per cent by 2019. As of 2021, among the 54 state-owned WSCs in Vietnam, 27 had over 65 per cent state ownership, 13 had state ownership ranging from 50 to 65 per cent, and 14 had state ownership below 50 per cent (VWSA 2019).

Before decentralization in the 1990s, there was a centralized national water supply organization. Today, in rural areas of Vietnam, piped water systems are managed by a diverse range of institutions, including local government bodies, community groups, cooperatives and private companies (UNICEF 2022). However, in urban areas and certain larger towns, the provision of water supply services is primarily carried out by provincial water services companies (WSCs). Today, each Vietnamese province has a provincial WSC. In large cities such as Ha Noi and Ho Chi Minh City, the provincial WSCs are holding companies with several subsidiaries.

Data from VWSA (2019) indicate that among 50 provincial water operators that are members of VWSA (out of 86 countrywide), including BEWACO, the percentage of state ownership is 55 per cent on average, ranging from 50 to 100 per cent. The percentage of state ownership is higher at BEWACO, which is 64 per cent. The average percentage of the population with access to piped water in the areas covered by the provincial WSCs is 84 per cent. However, the range varies considerably, from 48 to 100 per cent. In Ben Tre province, only 61 per cent of the population is supplied with piped water, which is below the average. It is important to highlight that these figures specifically pertain to urban areas. Comparable data for rural areas are not available.

Notwithstanding the government's stated intentions, the equitization (or financialization) of public water operators in Vietnam has not yielded significant improvements in access to clean water and quality of water services (UNEP 2018). Equitization has been disappointing for many reasons. Private investors tend to avoid investing in rural, remote and disadvantaged areas, resulting in these areas heavily relying on public and donor funding for the provision of water services (UNICEF 2020; Willetts et al. 2015; Gero & Willetts 2014). Concerns have emerged regarding the lack of transparency in selection processes, and uncertainties surrounding the regulatory and policy framework govern operations (Baum 2019; UNEP 2018). In addition, the water pricing system does not allow for adequate maintenance and reinvestment, which means that equitized firms' assets can quickly become liabilities for shareholders (Huynh et al. 2021; UNEP 2018). When tariffs do not cover operational costs (let alone expected levels of financial returns on investments)

private investors may choose to disinvest or redirect cash flows away from the equitized firm to the private entity through paying increased wages, management fees or dividends in order to produce immediate financial benefits (Bayliss 2014; Loftus et al. 2019). Such disinvestment strategies can lead to infrastructure deterioration and compromise the long-term sustainability and value of the equitized firm (UNEP 2018). At the same time, water quality can tank as equitable community access to WSS services suffers.

Public–private partnerships (PPPs)

PPP projects first appeared in Vietnam in the 1990s but were not fully formalized until a 2010 Decision approving a new PPP policy—a 2015 Decree encouraging PPPs in infrastructure and a 2018 Decree regulating PPP projects. The 2020 Law of Public–Private Partnership (the PPP Law) and a 2021 Decree details the financial management mechanisms applicable to PPP investment projects.

Several factors contribute to the rarity of PPPs in Vietnam. These include issues such as lack of transparency, complex legal arrangements and frameworks, challenges related to land acquisition and ownership (UNICEF 2022), as well as concerns about investment risk (UNEP 2018). In addition, given that the government regulates water tariffs for domestic use, PPPs have not been particularly attractive to private investors. The potential of PPPs to enhance equitable access to clean water remains uncertain. Private investors, driven by profit motives, may prioritize investment in urban areas over rural and remote regions that are perceived as less profitable.

Research suggests that the Vietnamese government's decision to divest from the water supply industry and shift the responsibility to local communities and the private sector has led to challenges in ensuring equitable access to clean water, particularly in rural and remote areas (UNICEF 2018, 2022). Should the government wish to raise the finance necessary to meet SDG 6, a different approach is needed. However, rather than seeking a "new" approach, the government should look to existing institutions, such as public banks.

Public banks in Vietnam

The banking system in Vietnam is comprised of various institutions, including state-owned commercial banks, joint-stock commercial banks, foreign banks and public (development) banks, in addition to the State Bank of Vietnam (the Central Bank). In Vietnam, the term "commercial banks" refers to all banks operating under commercial banking licenses, regardless of their ownership structures, including state-owned, joint-stock, private or foreign banks. Figure 6.1 illustrates the distribution of charter capital among these bank ownership categories. State-owned commercial banks, where the government holds a majority stake (more than 50 per cent),

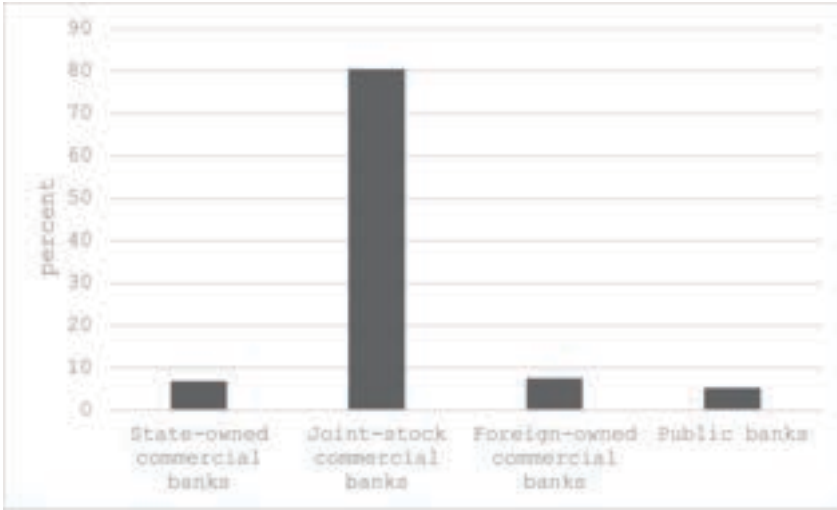

Figure 6.1 Distribution of charter capital by bank ownership in Vietnam.

Source: State Bank of Vietnam (www.sbv.gov.vn/).

represent 6.8 per cent of the charter capital. Joint-stock commercial banks, which constitute the majority (80 per cent) of the capital, also have a considerable government ownership component. Foreign-owned banks comprise 7.5 per cent of the charter capital. Public banks, namely the Vietnam Bank for Social Policies (VBSP) and the VDB, account for 5.25 per cent of the charter capital.

Vietnam Bank for Social Policies (VBSP)

The VBSP is an internationally recognized public bank that is seen as effectively advancing its pro-poor mandate, specializing in "policy-driven and affordable financial inclusion services for the poorest and most marginalised communities" (Marois 2023; UNICEF 2022). VBSP commenced its operations in 2003, following the restructuring of the Vietnam Bank for the Poor and its separation from the Vietnam Bank for Agriculture & Rural Development, a state commercial bank. This separation aimed to segregate preferential credit from commercial credit within commercial banks. As part of this reorganization, VBSP established a nationwide unified management and administration apparatus and became an autonomous financial entity (VBSP 2022).

Since 2004, VBSP has been active in WSS and has been authorized to offer loans to eligible households to construct and install water and sanitation facilities at the household level in rural areas. The Ministry of Finance provides

the necessary lending capital to facilitate these investments. In 2019 alone, VBSP disbursed approximately VND35 billion (approximately €1.36 million [USD 1.21 million]) in loans specifically allocated for rural water and sanitation initiatives (UNICEF 2022). These loans enable households to acquire essential resources such as water tanks, well construction services, toilet construction services and related materials. The Women's Union, an organization with representation extending to the commune level, actively supports VBSP in communicating loan availability and generating awareness of the loan programmes.

Vietnam Development Bank (VDB)

While the VBSP focuses on providing loans to households for the construction of rural household-level water supply systems, the VDB primarily offers medium- and long-term loans to WSCs. The VDB's primary focus is on supporting the water supply sector as a whole by providing financial assistance to companies responsible for water supply services. VDB loans are intended to support the development, expansion and improvement of water supply infrastructure through public operators.

The VDB is a relatively new public development bank, first established in 2006 by Decision of the Prime Minister. Its purpose is to support state development investment and export credit policies in accordance with government regulations. The VDB is a policy-oriented institution and its operations are not profit-oriented. To help keep the costs of financing down, and as an explicit measure of official state backing, the VDB does not need to maintain capital reserves, is exempt from deposit insurance and enjoys solvency guarantees from the government. The VDB is also exempt from taxes and payments to the state budget for its development investment and export credit activities (VDB n.d.-a). In short, the VDB is firmly located within and supported by the Vietnamese state.

However, the VDB has certain institutional challenges that it needs to face. Over the past five years, VDB total assets, return on average assets (ROAA) and net income have fallen and shown losses (Table 6.1). Total assets show a declining trend, hitting €9.79 billion in 2021 compared with €11.99 billion in 2017. This downward trajectory indicates a shrinking investment portfolio. In terms of profitability, VDB's ROAA has been consistently negative in recent years, being in the range of -0.23 to -0.39 per cent. It is increasingly rare that not-for-profit public banks have negative ROAA indicators, even though it is common to have low ROAA levels of between 0.1 and 0.5 per cent (Marois 2021). The VDB figures reflect the challenges of a policy-oriented public bank focused on providing subsidized and policy-based loans. That said, so long as VDB losses are covered by government transfers, and so long as the loss-incurring loans are supporting the effective delivery of policy priorities, then, a negative ROAA should not be seen as an inherently poor result.

Table 6.1 Overview of the Vietnam Development Bank

	2021	*2020*	*2019*	*2018*	*2017*
Total assets (Euros billions)	9.79	10.93	11.27	11.55	11.99
Return on average assets (ROAA) (%)	-0.23	-0.39	-0.27	-0.29	-0.23
Net income (Euros millions)	-0.02	-0.04	-0.03	0.03	0.03
Number of employees	NA				
Credit ratings	BB				
Year of incorporation	2006				
Initial purpose of incorporation	As a not-for-profit public bank focused on credit and development policy				
Current mission/Mandate	The Vietnam Development Bank is a state-owned financial institution responsible for executing state development credit policies. It mobilizes funds through issuing bonds, borrowing from various sources and accepting deposits. The bank provides loans, credit guarantees and financial services to support programmes and projects assigned by the government, while also participating in the interbank market and implementing payment services.				
Type of public bank	Development Bank				
Board of governors	10 members				
Ownership	Government of Viet Nam				

Sources: Fitch Connect (2023); VDB (n.d.-b).

Relatedly, VDB net income exhibited fluctuations during the same period. Negative net income was recorded in 2018 and 2019, with losses of €0.03 and €0.04 million, respectively. However, there was a slight improvement in 2020, narrowing the net income to -€0.02 million. In 2017 and 2018, the net income was positive but relatively modest, at €0.03 million. Again it is important to note that while many public development banks like the VDB have no profit-maximizing mandate, they are often charged with maintaining financial sustainability. When governments mandate their public banks to undertake loss-making operations (such as concessional lending), their losses need to be covered by transfers from the central government budget so as to protect the public bank's long-term institutional viability (Marois 2021, 2024).

VDB implements the government's credit policy by mobilizing and receiving capital from domestic and foreign organizations. Therein, one of its roles is to function as an ODA intermediary. In this role, the VDB manages ODA capital resources and handles the trust and allocation of investment loans and debt repayment from both domestic and foreign organizations. This role has included international support for the WSS sector. In this capacity, VDB

has managed capital resources from the Agence Française de Développement (AFD) and the World Bank, which has been directed towards the development of urban water supply initiatives. In this way, VDB plays a significant role in Vietnam's water and sanitation sector by providing concessional loans (UNICEF 2022).

Public bank–public water in Vietnam: the case of BEWACO and VDB

BEWACO, or the Ben Tre Water Supply and Sewerage Joint Stock Company, is a public water operator responsible for providing clean water to the residents of Ben Tre province. It was established in 1992 by the Ben Tre Provincial People's Committee under the name of Ben Tre Water Supply and Sewerage. BEWACO was equitized in 2015 and became a joint-stock company, changing its name to Ben Tre Water Supply and Sewerage Joint Stock Company. As of 2022, 64 per cent of BEWACO was owned by the provincial government. The other 32.4 per cent was owned by two private companies and 3.6 per cent by 215 individuals (BEWACO Annual Report 2019, 2022).

BEWACO operates and manages a number of water treatment plants and distribution systems in the province. These include the Ben Tre City Water Treatment Plant, the Mo Cay Water Treatment Plant and the Giong Trom Water Treatment Plant. In addition to providing clean water to households, BEWACO also supplies water to industrial and commercial customers.

Ben Tre Province in Vietnam, situated in the Mekong Delta region, faces substantial hurdles in providing clean water to its population. Ensuring access to clean water in Ben Tre province remains a major challenge. As of 2020, only 61 per cent of the population had access to piped water (VWSA 2020). Residents without improved water services rely on compromised sources such as groundwater or surface water (UNICEF 2018, 2022). The province is highly susceptible to saltwater intrusion and groundwater contamination, exacerbated by rising sea levels, climate change and unsustainable groundwater extraction practices. During the dry season, saline water infiltrates freshwater aquifers, resulting in the pollution of water sources. This issue affects both urban and rural areas, with vulnerable communities relying on shallow wells and surface water sources (Nguyen 2022). Approximately, 40 per cent of households in Ben Tre province are impacted by saltwater intrusion, compelling them to seek alternative water sources such as rainwater or bottled water (Nguyen 2022). Moreover, groundwater contamination, particularly with pollutants like arsenic and iron, poses significant health risks, primarily affecting rural areas with limited access to safe water sources.

BEWACO and the VDB

BEWACO has worked with VDB (the Song Tien Branch) to finance several projects. In 2005, BEWACO undertook a project in Giồng Trôm districts

with a VDB loan of 2.14 billion VND (approx. €8.5 million) with a repayment period of 37 months and an interest rate of 5.4 per cent per year (document provided in interview 1). The project aimed to establish a domestic water supply system in Giồng Trôm town and adjacent communes to enhance access to clean water. In 2008, BEWACO completed the project and successfully paid off the loan.

In 2008–09, BEWACO started another project in Sơn Đông and Thành Triệu, aimed at constructing a water supply system for local people with a capacity of 20,000 cubic metres (m^3) per day. The VDB loan was valued at 12.979 billion VND (approx. €505 million), but the actual disbursed amount was 10.54 billion VND (€409 million). The VDB loan had a repayment period of 72 months with an interest rate that fluctuated between 6.9 and 11.4 per cent per year due to the global economic crisis in that period.

A third project sought to expand and increase the capacity of the Sơn Đông Water Plant in Ben Tre City from 16,900 to 31,900 m^3/day, implemented in 2010 (document provided in interview 1). The VDB provided a loan of 29.4 billion VND (approx. €1.2 million), but only 26.7 billion VND (€1.05 million) was actually disbursed. The repayment period was 72 months, and the interest rates ranged from 9.6 to 12 per cent per year.

In a fourth project, BEWACO aimed to construct a clean water distribution system in Mỏ Cày Nam and Mỏ Cày Bắc districts. The project received a VDB loan of 34.248 billion VND (approx. €1.33 million). The repayment period was 70 months, and the interest rate was 8.55 per cent per year. However, due to the provincial authorities' decision, the water supply area was assigned to another local water operator and the project ceased.

In addition, the institutional predecessor of the VDB acted as financial intermediary for two ODA-funded projects of BEWACO. In 1997, ADB sponsored the water supply system upgrading project in Ben Tre town at an interest rate of 6.8 per cent per year. Then in 2013, VDB facilitated AFD funding for constructing the An Hiep water treatment plant in Chau Thanh District, with a capacity of 15,000 cubic metres. The project was financed at a rate of 5 per cent per year and forms part of a larger programme to enhance water supply capacity in small towns in Vietnam's Mekong River Delta region.

Promising aspects of the VDB–BEWACO collaboration

There is promise in the public financing provided by VDB to support BEWACO. Most importantly, all BEWACO interviewees acknowledge VDB's low interest rates. While the interest rate of commercial banks is usually floating, from 10.5 to 13.5 per cent, the interest rate at VDB is usually 5 per cent (interviews 6, 9) or concessional in one way or another. In effect, the concessional, low-interest funds provided by VDB have enabled BEWACO to undertake larger, longer and more ambitious projects that would not have been possible otherwise:

> The lending capital from VDB to (water) projects is considered preferential, with much lower interest rates compared to commercial banks. […] These projects provided clean water to areas in Ben Tre City and surrounding districts, thereby contributing to improving the quality of life for the people, especially in terms of health. These projects would be difficult to implement without funding from VDB.
>
> (Interview 6)

This capacity of public banks—to lend at the most affordable rates—is in line with other studies of public banks and public water in the global south, such as Güngen (2022). Moreover, because VDB is a non-profit public banking institution, the projects it finances may have a lower rate of return and a more extended payback period than those of other commercial banks (all interviews at VDB and BEWACO). This allows BEWACO to implement projects that might be considered less financially viable or riskier by other banks:

> […] the payback period for these (water) projects is usually longer. […] With a non-profit objective, VDB provides funding for (water) projects that tend to have lower profit margins.
>
> (Interview 6)

This implies that VDB can play a crucial role in supporting WSS providers serving disadvantaged communities or working in regions where access to financing is limited (interview 5). This promising aspect addresses one of the primary challenges facing WSCs in Vietnam: the difficulty in finding appropriate financing, which includes the problems of limited access to bank loans and high interest rates (Willetts et al. 2016).

It is important that water loans have low interest rates because water services produce low returns (but with high social returns). In less populated areas water consumption is low, from 4 to 20 cubic metres per household per month, resulting in low revenues. The average price of 9900 VND/cubic metre yields VND40,000 to VND200,000 (approx. €1.55– €7.8) per household per month (Huynh et al. 2021). This is one of the most important factors that make the WSS sector less financially viable and sustainable than other sectors, resulting in the fees collected for water usage not being enough to cover the operation and maintenance costs of the facilities (Huynh et al. 2021; UNICEF 2022). However, Vietnam is not exceptional in this regard. In most lower income countries and even in high-income countries, full cost recovery is practically non-existent (Reis 2022).

VDB's interest rates are not only lower than those of commercial banks, its lending is also more stable. As noted, VDB interest rates generally remain fixed throughout the loan duration, whereas interest rates at private financial institutions are generally floating:

> The interest rates for loans provided by the State Bank are typically fixed throughout the loan term, whereas commercial banks often have floating interest rates that can fluctuate.
>
> (Interview 7)

This means that VDB borrowers like BEWACO can plan their finances with greater certainty, as they know exactly how much they will be paying back each month. This stability in interest rates and loan repayments also means that BEWACO is less vulnerable to market fluctuations, which can significantly impact repayment capacity for floating-rate loans. This is especially true during the time of extreme market events. During the recession in 2008–10, interest rates at VDB varied from 8 to 12 per cent while that of commercial banks at times exceeded 20 per cent (interview 6). While VDB rates did vary, the VDB was able to shield its clients from extreme global market conditions because it is a bank that is held within the public sphere of Vietnam. Similar to many other public banks, the VDB was able to definancialize otherwise volatile flows of finance capital within its territory (Marois 2021).

In addition to offering low and stable interest rates, VDB also focuses on providing medium- and long-term financing. This was singled out as another promising aspect of its collaboration with BEWACO (interviews 3, 6). The repayment period of loans offered by commercial banks are usually from 5 to 7 years; by contrast, VDB loans are between 12 and 20 years (interview 9). Meanwhile, VDB's emphasis on medium- and long-term projects aligns well with the reality of BEWACO water supply projects. These infrastructure projects typically demand significant initial investments while generating relatively low revenue over an extended duration (interview 4). The long-term loans offered by VDB make it an ideal and advantageous public partner for supporting BEWACO's water supply initiatives, such as constructing new water treatment plants or expanding existing networks. In this case, public–public collaborations (PPCs), rather than PPPs, are the most effective and appropriate means of advancing commitments to SDG 6.

The Socio-economic Plan of the People's Committee of Ben Tre Province (Document 4646/KH-UBND dated August 6, 2021) has set an objective of ensuring that 75 per cent of the urban population in Ben Tre and 50 per cent of the rural population have access to piped water by 2025 (People's Committee of Ben Tre Province 2021). In order to achieve this objective, Ben Tre will need to rely on the support of various stakeholders to provide financing, including VDB. The involvement of VDB is particularly crucial due to its ability to provide long-term and concessional loans. VDB-supplied financial support will enable the implementation of large-scale water supply projects, addressing the infrastructure needs and ensuring access to clean water for a majority of the population in Ben Tre, especially the remote and impoverished areas in the Mekong Delta region.

In addition, the province's environmental challenges—notably saltwater intrusion and water contamination—necessitate the implementation of

robust water supply and sanitation infrastructure projects that can effectively mitigate the impacts and ensure access to clean water for the population. The issue of saline intrusion is becoming increasingly complex in the Mekong Delta provinces, including Ben Tre, making it a challenge for WSCs to ensure clean water sources. The funding from VDB can help to expand the water supply network to remote and underserved areas (interview 7). In this context, the PPC between VDB and BEWACO becomes even more crucial, as VDB's provision of long-term and concessional loans enables BEWACO to secure the necessary financial resources to tackle these pressing issues and improve the sustainable water supply situation in Ben Tre. BEWACO confirmed that it wishes to borrow from VDB in the future for its planned projects to expand its water supply capacity (interview 9).

Challenges of the VDB–BEWACO collaboration

As promising as appropriate long-term and low-cost financing is to the future of public water provisioning in Vietnam, there are also challenges in this public bank–public water collaboration. Challenges include slow and bureaucratic procedures to approve loans, a lack of a regulatory framework setting interest rates, complex monitoring procedures and a lack of coordination amongst public banks.

The loan application process at VDB has been described as complicated and time-consuming, diminishing its appeal to BEWACO. The complexity of the process involves multiple stages, extensive documentation requirements and a rigorous evaluation procedure. This long and intricate process can delay loan approval and disbursement, prolonging the time it takes for BEWACO to secure the necessary funds for its water supply projects (all interviews at BEWACO). The bureaucratic nature of the VDB application process may deter BEWACO from seeking financial assistance from VDB, as it can be resource-intensive and divert valuable time and effort away from other critical aspects of their operations. Streamlining and simplifying the loan application process at VDB could enhance its attractiveness to BEWACO (interview 9) and other organizations, facilitating more efficient and timely access to financing for public water supply initiatives. There are alternative precedents. In the Nordic region, for example, public banks and public water providers report that theirs is a relatively simple and straightforward process where municipalities request funds and the banks deliver them (Juuti et al. 2022).

One of the other factors contributing to the complicated nature of the VDB application process involves the lack of a transparent legal framework for determining interest rates (UNICEF 2022). There is currently no specific regulatory framework that would enable VDB to establish appropriate interest rates, which impedes the VDB's ability to provide readily accessible concessional finance (UNICEF 2022). Decree 31 of 2017 authorizes VDB to utilize domestic capital to lend to water supply enterprises at preferential interest rates and assume the credit risk for these loans. However, VDB

has encountered challenges in deploying these loans due to complications arising from the mechanism used to determine interest rates. Furthermore, such rates should be conducive to supporting the water sector while ensuring VDB's capacity to cover capital mobilization and loan servicing expenses (UNICEF 2022). As a rule, policy-based public bank lending must be accompanied with clear and transparent government support mechanisms. Without such mechanisms in place, policy lending can undermine the long-term sustainability of the public bank. This is in no one's best interest, and clients of Vietnam's public banks would like to see greater transparency in their operations.

In addition, the monitoring procedures implemented by VDB for financed projects have been characterized as complex and demanding, placing a significant burden on BEWACO (all interviews at BEWACO). These procedures involve comprehensive reporting requirements, regular site visits and meticulous documentation:

> Although the interest rates for loans from the development bank (VDB) are low, the loan application process is complicated, involving numerous procedures and time-consuming requirements. Accessing the necessary funding becomes challenging as it requires detailed reporting and regular updates of information.
>
> (Interview 9)

The rigorous nature of the monitoring process necessitates substantial efforts from BEWACO to ensure compliance and provide detailed updates on project progress, financial performance and adherence to established guidelines. The extensive efforts required by BEWACO to meet VDB's monitoring requirements may diminish the attractiveness of the PPC, as it adds an additional layer of complexity and administrative burden to the implementation water supply projects. Simplifying and streamlining the monitoring procedures could enhance the appeal of VDB as a financing partner, allowing BEWACO to allocate resources more efficiently and focus on project implementation and service delivery (all interviews at BEWACO). Creating simplified, co-created and streamlined key performance indicators mirrors recommendations made for public multilateral and national development banks at the international scale for "metrics that matter" (Marois et al. 2023).

Finally, VDB does not cooperate with commercial banks or private financial institutions in financing ongoing public WSS projects, including those undertaken by BEWACO. According to VDB, this is because it has the capacity to finance the entire project and provide low interest rates to targeted clients (interview 6). However, it turns out that VDB has no legal framework for cooperating with commercial banks in financing eligible projects (interviews 1, 6). While there is global precedent for individual public banks financing infrastructure effectively, there are also promising examples of public banks co-financing collaborations that help to spread risk, provide

favourable terms and to further reduce the costs of financing (Marois 2021; Marois & McDonald 2023).

The absence of cooperation between VDB and the joint-stock state-owned commercial banks in financing ongoing public WSS projects, including those undertaken by BEWACO, presents certain shortcomings. While VDB's ability to finance the entire project and provide low interest rates to targeted clients may initially seem advantageous, the lack of collaboration with public joint-stock commercial banks limits the availability of diverse financing options. Public commercial banks can bring extensive experience, expertise and financial resources to the table, which could contribute to more efficient project implementation and broader access to funding. Their involvement could introduce innovative financing mechanisms, risk-sharing arrangements and access to additional sources of capital, thereby promoting greater project sustainability and resilience. Moreover, collaborating with public commercial banks could foster a form of positive, pro-public competition and enhance transparency in the financing sector, potentially improving efficiency and cost-effectiveness. Establishing a legal framework that enables cooperation between VDB and public commercial banks for financing eligible projects could unlock synergistic benefits, broaden the financing landscape, and ultimately strengthen the overall development of Vietnam's WSS sector—and indeed, the public banking sector.

Another challenge that may exist in the collaboration between public banks (such as VDB) and public water operators is the attractiveness of loans from private commercial banks. While VDB offers low-interest loans, water operators reportedly choose loans from private, joint-stock commercial banks due to potential kickbacks associated with these loans (interview 15). That is, private commercial banks may provide financial incentives or benefits to the decision makers at water companies in exchange for securing loans with them. This practice creates a dilemma for public water operators as they have to choose between the low-interest loans offered by public banks and the potential personal incentives offered by private commercial banks. Financial incentives from private commercial banks, which expect a market-based return on investment, can influence the decision-making process and potentially divert water operators towards private financing options in ways that undermine the financial viability of the public water operator as well as service equity. This too underscores the need for a transparent and clear legal framework guiding the financing of public water and other infrastructure projects in Vietnam.

Conclusions

This chapter focuses on analyzing the financing relationship between the VDB and BEWACO (the Ben Tre water supply and sanitation infrastructure company) in the Mekong River Delta of Vietnam. The objective has been to identify the strengths and weaknesses of this relationship and propose ways

to enhance its effectiveness. The study's significance lies in the importance of understanding appropriate financing mechanisms for water supply and sanitation infrastructure, a cornerstone of citizen well-being.

Data analysis helped identify the strengths and weaknesses of the VDB–BEWACO relationship, while interviews with key stakeholders provided valuable insights into the challenges and opportunities for improving the collaboration. The study has shown several promising aspects. One key advantage of this collaboration is the provision of low interest rates by VDB to support BEWACO's water supply initiatives. This enables BEWACO to access financing at favourable terms, reducing the financial burden associated with project implementation. Overall, VDB is able to provide the cheap financing needed by public water operators in Vietnam.

Moreover, the availability of long-term loans from VDB aligns well with the nature of BEWACO's water supply projects. These projects often require significant initial investments, while revenue generation may take an extended period of time. By offering long-term financing, VDB supports BEWACO in overcoming financial constraints and allows for sustainable project development. That is, VDB is able to provide financing appropriate to public water provisioning.

Despite these promising aspects, several challenges have been identified in the VDB–BEWACO collaboration. The loan application process at VDB appears complicated and time-consuming, posing difficulties for BEWACO. Simplifying this process could foster more effective and attractive PPC, enabling BEWACO to expedite the loan application and access financing more efficiently.

Another challenge lies in the complicated project monitoring process employed by VDB that requires BEWACO to commit significant resources. Simplifying the project monitoring process would not only alleviate the burden on BEWACO but also improve the efficiency and effectiveness of project implementation. By implementing streamlined and standardized monitoring procedures, VDB can enhance its collaboration with BEWACO and other water operators, enabling more efficient project oversight and progress tracking. VDB, too, could support streamlining by expanding in-house water expertise and knowledge.

Additionally, the lack of transparent cooperation pathways between VDB and the state-owned commercial banks may pose limitation to public bank–public water collaboration. A clear, transparent legal framework would create opportunities for broader financial participation and increased access to appropriate capital for water operators. The VDB and public commercial banks could learn from one another, thus bringing additional expertise, resources and financial support to enhance the sustainability and scalability of water supply projects. Such cooperation could create a more inclusive financing ecosystem and foster innovation and efficiency in the sector.

In conclusion, the public bank–public water collaboration between VDB and BEWACO in Vietnam's water supply sector demonstrates several

promising aspects, including low interest rates and long-term appropriate loans. However, it is crucial to address the challenges identified to further strengthen and enhance such collaborations between public banks and public water operators. Simplifying the loan application process, streamlining project monitoring procedures and establishing a legal framework for cooperation with commercial banks would improve the attractiveness and effectiveness of such collaborations. By doing so, public banks and water operators can work together more efficiently and effectively to achieve sustainable and accessible water supply services, that is, towards SDG 6.

There are limits to the study's findings. The scope was limited to the financing relationship between VDB and BEWACO, which is unlikely to represent the full scope of financing relationships in Vietnam's water supply and sanitation infrastructure projects. The study did not delve into the broader social and environmental impacts of the VDB–BEWACO financing relationship, focusing primarily on the financial aspects. Furthermore, the perspectives and experiences of other stakeholders, such as customers, local communities and other financing institutions, were not extensively examined. So, while this is the first study of public banks and public water in Vietnam, these limitations indicate the need for further study and more comprehensive understandings of not only the VDB–BEWACO relationship but also of PPCs within Vietnam and indeed the Global South.

Note

1 Socialization is a concept used by the Vietnam government to refer to a combination of equitization and making goods/services that once were provided for free by the government to being provided privately and charging user fees.

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Appendix A: Interviews conducted

Interview	*Name*	*Role*	*Date*
1	Tran Thanh Long	Director of VDB, Song Tien Branch	December 22, 2022
2	Tran Thi Phuong Thao	Staff of Credit Department, VDB, Song Tien Branch	December 22, 2022
3	Nguyen Ngoc Tram	Staff of Credit Department, VDB, Song Tien Branch	December 22, 2022
4	Nguyen Thanh Thai	Head of Inspection Department, VDB, Song Tien Branch	December 22, 2022
5	Cao Tan Thu	Staff of Credit Department, VDB, Song Tien Branch	December 23, 2022
6	Tran Hoang Yen	Head of Credit Department, VDB, Song Tien Branch	December 24, 2022
7	Le Thanh Vu	Staff of General Services Department, VDB, Song Tien Branch	December 24, 2022
8	Tran Hung	Chairman of the Board of Directors of BEWACO	January 6, 2023
9	Vo Thi Thien Trang	Chief Accountant of BEWACO	January 6, 2023
10	Anonymous	Head of Department of Engineering at BEWACO	January 10, 2023
11	Anonymous	Head of Department of Project Management	January 10, 2023
12	Anonymous	Staff of Department of Engineering	January 10, 2023

Interview	*Name*	*Role*	*Date*
13	Anonymous	Staff of Department of Engineering	January 10, 2023
14	Anonymous	Staff of Department of Project Management	January 10, 2023
15	Anonymous	Staff of Credit Department, Vietnam Joint-Stock Commercial Bank for Industry and Trade (Vietinbank), Ben Tre	March 13, 2023

7 Democratic patient finance

The Banco Popular and community-based water operators in Costa Rica

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Costa Rica boasts one of the highest rates of access to improved drinking water in Latin America, having achieved nearly universal service coverage. Nonetheless, service gaps and challenges remain. Sanitation coverage rates remain low, and Costa Rica is at risk of multiple climate change-related hazards, including floods and landslides, cyclones, storm surge and sea level rise. Meeting these challenges will require significant investments in water and sanitation infrastructure.

In this chapter, we analyze the role of Costa Rica's Popular and Community Development Bank (Banco Popular y de Desarrollo Comunal, or BPDC) in financing public water supply and sanitation (WSS) systems. We focus on the bank's relationship with community-based water operators, known as water supply and sewerage system management associations (Asociaciones administradoras de los Sistemas de Acueductos y Alcantarillados, or ASADAs). ASADAs provide water services in rural and semi-urban areas of Costa Rica. Since 2006, the BPDC has built important relationships with the ASADAs and the Costa Rican Institute of Water and Sewerage (Instituto Costarricense de Acueductos y Alcantarillados, or AyA), which is also responsible for providing water and sanitation services in Costa Rica's urban areas and acts as the national regulator of the WSS sector. This chapter focuses on BPDC's relationship with the ASADAs, however, since it has a direct financing relationship with them.

The BPDC's programmes to finance the ASADAs exemplifies its role in providing patient finance to populations that do not otherwise have access to credit. The BPDC is considered to be the most democratic public bank in the world (Marois 2021). It was founded in the 1960s as a bank that is owned and controlled by workers. Since the late 1980s, an elected Workers' Assembly has exerted social control over the bank, setting its mandate and holding it to account. Under the influence of the Workers' Assembly, the BPDC has strengthened and expanded its role in the solidarity economy by democratizing credit, including establishing a new fund financed by the

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banks' corporate profits that is dedicated in part to the ASADAs. Through this and other loan programmes, the BPDC serves communities that other banks fail to serve.

We examine four Costa Rican ASADAs that have current or recently expired loans with the BPDC to understand the variety of BPDC's financial offerings and their impact. These ASADAs also represent the four different loan programmes within the BPDC conglomerate's portfolio, offering additional insights. But while the ASADAs we feature in this chapter reflect some of the geographic diversity in Costa Rica, they are not meant to be representative of the country's ASADAs in general. The ASADAs we selected are amongst the best-performing ASADAs in Costa Rica, having achieved high rankings in AyA's benchmarking system used to evaluate performance.

This paper is the first study of the BPDC to provide a critical analysis of its financing of public water in Costa Rica. The research reveals how the BPDC works concretely in fulfilling its social mission in the WSS sector and uncovers the kinds of challenges that lie ahead in building an integrated water system in the context of uneven development and climate change. We argue that there is significant room for the BPDC to expand its patient financing role via public–public collaborations akin to what it has developed with the ASADAs. For Costa Rica to meet the UN sustainable development goals (SDGs) for water and sanitation—as well as related climate change goals—we recommend strengthening public–public collaborations by expanding BPDC's existing loan programmes, finding ways to streamline the loan approval process and creating new lines of credit for water operators, such as a syndicated loan programme amongst public banks dedicated to water and sanitation.

This study is based on an extensive review of the BPDC's annual reports, legal regulations and academic studies of Costa Rica's WSS sector and the BPDC. We conducted semi-structured interviews with the presidents and/or administrators of the ASADAs and reviewed ASADA statutes and other forms of ASADA documentation. In addition, we conducted interviews with former and current managers from the BPDC, project managers from the AyA, academics and experts from the United Nations Development Programme (UNDP) and non-governmental organizations (see Appendix A for a list of interviewees).

The first section of this chapter provides an overview of public services in Costa Rica, focusing on the banking and WSS sectors. The second section describes BDPC's financing mechanisms for ASADAs and its contribution to public WSS. It also identifies promising lessons and ongoing challenges. The third section discusses the potential and limits of debt financing for improving equity in WSS services and highlights the potential of public–public collaborations to finance WSS infrastructure. The chapter concludes with a summary of our main findings.

Public services in Costa Rica: banking and water supply and sanitation

Costa Rica is well-known for its stable and well-functioning democracy, robust civil society and relatively high levels of social equality, in addition to being a world leader in environmental conservation (Sandbrook et al. 2007; Pagiola 2008). In 1948, a popular uprising led to the installation of a social democratic government that disbanded the standing army, subsequently allowing for greater fiscal resources to be channelled into public goods, such as health and education (Booth 1998). Public investment in water and sanitation infrastructure in the post-World War II period was part of this trend. To this day, public banks play a key role in the Costa Rican economy. Yet like in other nations in Latin America, the turn to neoliberalism since the 1980s debt crisis has eroded redistributive aspects of the welfare state. Public investment in water and sanitation has stagnated. Despite the constant threat, Costa Ricans have remained deeply resistant to pro-market advocates' pushes to privatize public goods in order to preserve society's pro-public gains.

The Costa Rican banking sector

In 1948, the Costa Rican government nationalized the financial system as a marker of its national developmental ambitions and to advance the democratization of credit (Honey 1994, 78; Marois 2005). The National Banking System remained under public ownership and control until the debt crisis of the 1980s. In 1984, the government allowed private banks to start granting credits. In 1995, further liberalization measures increased private and foreign participation in the banks that, in turn, increased competition between the public, private and cooperative banks (Monge-González 2009, 8).

Today, the financial system in Costa Rica is dominated by banks and other financial intermediaries, as opposed to more market-based sources of direct financing (for example, via the stock market). Public, private and cooperative banking institutions combined account for over 91 per cent of overall financial system assets (OECD 2020, 8–9). Therein, public banks constitute about 35 per cent, private banks 33 per cent and cooperatives about 11 per cent of total financial assets as of March 2020. The remaining 12 per cent is made up of various public and private banks and non-banking financial institutions. Within the banking sector specifically, public banks are dominant (see Table 7.1). The largest banks in Costa Rica are the Banco Nacional de Costa Rica and the Banco de Costa Rica, which are 100 per cent state-owned. When combined with the BPDC, these three banks control 58 per cent of total banking sector assets. Eleven private banks hold the other 42 per cent of banking assets.

Our focus institution, the BPDC, is defined as a non-state public bank (explained below), and it is the fourth-largest bank in Costa Rica with just over 13 per cent of total banking assets. While the two other state-owned banks enjoy explicit state backing by law, the BPDC does not (OECD 2020,

Table 7.1 Public banks in Costa Rica

Name (Year established)	*Type of bank*	*Form of public bank*	*% of assets in banking sector*
Banco Nacional de Costa Rica (1914) [a]	Universal Commercial	State-owned	26.3
Banco de Costa Rica (1877) [b]	Universal Commercial	State-owned	18.4
Banco Popular y de Desarrollo Comunal (1969)	Universal Commercial	Non-state public law bank	13.4
Banco Hipotecario de la Vivienda (1986)	2nd Tier	Non-state public law bank	N/A

Sources: OECD (2020, 15); Fitch Connect (2023).

Notes:

[a] First created in 1914 as the Banco Internacional de Costa Rica then renamed as the Banco Nacional de Costa Rica in 1936.

[b] First created in 1877 as the Banco de la Unión then changed its name to Banco de Costa Rica in 1890.

16). That said, senior BPDC staff have communicated that they generally believe the BPDC to have an implicit state backing against default (Marois 2021, 209). As a bank governed under special public law, however, the Banco Popular is not required to hold capital reserves in the Central Bank of Costa Rica, reducing its cost of lending.

Over the last 15 years, Costa Rica has developed an innovative development financial institution, the Development Banking System of Costa Rica (Sistema de Banca para el Desarrollo, or SBD). The aim of the SBD is to support financial inclusion, productive development, innovation and technology, and micro-, small- and medium-size enterprises (MSMEs). Created by public law in 2008 (Law Nº 8634), the SBD is constituted by the participation of all the public and state-owned financial and development institutions in Costa Rica. Private banks may participate in the SBD if they opt not to fulfil certain financial inclusion stipulations (like being active in specified regions) that would exempt the private bank from contributing resources to the SBD. To be clear, the SBD is not a bank per se. The SBD is a means of systemic coordination of development finance and does so by drawing in deposits from existing financial institutions and redirecting these financial resources into priority development programmes and geographical areas as authorized by its governing council (OECD 2020, 15, 19). Each bank that participates in the SBD administers their portion of these special funds. As of June 2023, the SBD has served over 73,000 clients (98 per cent of these are MSMEs) with loans totalling just over US$4 billion. Loans average around US$6000 each at a 5.98 per cent interest rate.[1]

The Banco Popular y de Desarrollo Comunal

The BPDC is a unique public bank because it is worker-owned and classified as a *non-state* public bank (BPDC 2022, 12). It is not a cooperative, but rather a uniquely constituted public institution. The BPDC was founded in 1969 in public law (Nº 4351, *Ley Orgánica del Banco Popular y de Desarrollo Comunal*) as a bank by and for the working class. A 2002 reform, the Law of the Democratization of Decision-Making Processes of the Popular and Community Development Bank (*Ley de Democratización de las Instancias del Decisión del Banco Popular y de Desarrollo Comunal*, or "Democratization Law") reinforced its public character, solidified the role of the Workers' Assembly in providing overall direction and accountability, and concretized the BPDC as what is considered to be the most democratic bank in the world (Marois 2021, 211–2).

The original 1969 BPDC Law states that the BPDC is 100 per cent owned by the working class of Costa Rica (BPDC 2012, 7), which in this case refers to formal workers whose deposits capitalize the bank. The BPDC emerged out of Costa Rica's particular history. In the post-World War II era, workers and peasants struggled to make the country more egalitarian and democratic (Edelman 1999). Cooperatives, public services and workers' rights emerged as high priorities. Nonetheless, accessible and appropriate financial services remained elusive to many. By the 1960s, workers and social sectors demanded a bank by and for workers (Cortés 2014, 60). Collective efforts culminated in the government transforming the pre-existing Monte Nacional de Piedad financial institution into an authentic workers' bank, the BPDC. Notably, this initiative was championed by a woman from the opposition party, Cecilia González Salazar, who managed to gain near consensus on the bill with only one vote against (Marois 2021, 207; Mora Alfaro 2002).

Since its modest beginning as a single office, the BPDC has evolved into a full-service, nationwide universal commercial public banking conglomerate that provides both commercial and development banking products and services. The BPDC accepts personal deposits and offers a full range of personal, household and business financial services. These include savings and current accounts, personal and business credit, credit and debit cards and savings certificates. BPDC also offers financial services in pensions; stock market, brokerage and securities services; insurance; investment funds; interbank payments; and salary and tax payments. BPDC holds assets exceeding US$6.6 billion and generates returns on average assets in line with private commercial banks at around one per cent (see Table 7.2) (the private Banco BAC San José averages around 1.3 per cent) (Marois 2021; Fitch Connect 2023).

The BPDC conglomerate is divided into five different institutional entities that serve different financial functions and mandates. These include the following:

Table 7.2 Banco Popular y de Desarrollo Comunal overview, 2023

	2022	*2021*	*2020*	*2019*	*2018*
Total assets (US$ billions)	6.62	6.30	7.02	6.24	5.89
Return on average assets (ROAA) (%)	1.10	1.05	0.33	0.94	0.61
Return on average equity (ROAE) (%)	5.23	5.64	1.84	4.89	3.20
Net income (US$ millions)	74.61	70.03	21.85	58.09	35.20
Number of employees (2020)	3872				
Credit rating (2023)	BB-				
Year of incorporation	1969				
Current Mission	To give economic protection and well-being to workers.				
Type of Public Bank	Universal Commercial (with development functions)				
Highest Governing Body	290-member Workers' Assembly				
Board of Governors	7-member National Board of Directors (3 from government and 4 from Workers' Assembly)				
Ownership	100% Working class of Costa Rica				

Sources: Marois (2021); Fitch Connect (2023); Banco Popular website (2023).

1 BPDC (Banco Popular y de Desarrollo Comunal), the main banking entity, which includes a Business and Corporate arm as well as Social Development Bank arm;
2 Popular Securities and Stock Market (Popular Valores Puesto de Bolsa);
3 Pension Plan Operator (Operadora de Planes y Pensiones);
4 Popular Investment Fund Company (Popular Sociedad de Fondos de Inversión);
5 Popular Insurance Agency Society (Popular Sociedad Agencia de Seguros).

In this chapter, we focus on the two arms of the BPDC that serve ASADAs: the Business and Corporate Bank and the Social Development Bank.

The BPDC has a unique manner of capitalization based on personal deposits that also makes workers co-owners of the BPDC. By law, the BPDC manages mandatory pension fund contributions equivalent to 1.5 per cent of the total payroll of public and private sector workers (0.5 per cent comes from the employers and 1.0 per cent from the employees). These employee contributions are used to capitalize the bank. For the first 18 months, these funds are channelled into a Labour Fund that is used to grant housing credits and for loans to MSMEs. After the 18-month period, the BPDC deposits 1.25 per cent, with interest, to the pension operator of the worker's choice (including within the BPDC Pensions division, if they like), while 0.25 per cent is retained by the BPDC as a form of permanent capitalization (OECD 2020, 15; Marois 2021, 208).

The BPDC's mandate as a workers' bank is reinforced by its democratic governance structure. In 1986, the Workers' Assembly became the highest governing body of the BPDC. The Assembly is made of up 290 representatives elected from ten identified social and economic sectors in Costa Rica: artisanal, communal, cooperative, self-managed, independent, teachers, professional, confederated syndicates, non-confederated and solidarity syndicates. The Assembly provides overall strategic direction and a forum of accountability. The Assembly also elects four of the seven members to the National Board of Directors—the bank's highest administrative body. The Costa Rican government appoints the other three members to the National Board of Directors. By law, all major BPDC decision-making bodies, from the Assembly down to regional bodies, must be at least 50 per cent women. The BPDC was the first public institution in Central America to achieve gender equality within its decision-making fora (BPDC 2017, 13).

In most areas of its lending (but not in the WSS sector), the BPDC competes directly with private, public and cooperative banks. The BPDC provides about 12 per cent of total loans in Costa Rica and holds about 9 per cent of deposits (OECD 2020, 9–10). In providing these loans, the BPDC seeks to generate returns, but not only returns at the expense of all else. Following nationwide consultations, the BPDC has adopted a triple bottom-line approach that takes responsibility for advancing economic, environmental and social objectives (BPDC 2023).

The BPDC is not focused on "skimming the cream," that is, the banking practice of targeting the wealthiest clients in choice urban settings. BPDC clients are broad-based and include workers, peasants, MSMEs, as well as local governing authorities inclusive of communal, cooperative and municipal development associations in rural areas. Working in these communities, the BPDC has over 15 years' experience offering a series of financial products to the rural ASADAs, including normal loans and a series of special funds that are part of the BPDC's commitments to the SDB and its efforts to democratize finance.

Costa Rican water supply and sanitation sector

The water and sanitation sector in Costa Rica is almost universally public. Water has been considered the domain of the state since the Water Law of 1942 (N° 276, *Ley de Aguas*). Financing of the WSS sector has also been almost universally public, financed by taxes (public investment by governments) and transfers from multilateral development banks and other donors. Until 2020, domestic regulations prohibited water operators from borrowing money from any financial institution other than public banks.

The Costa Rican Institute of Water and Sewerage (Instituto Costarricense de Acueductos y Alcantarillados, or AyA) provides water to 50.7 per cent of the population mostly in and around the capital and most populated city, San José, while other local governments (municipalities) provide water services

to 18.8 per cent of the population (UN Water 2022, 5). There are estimated to be about 1500 ASADAs that serve about 25.5 per cent of the population, mostly in rural and semi-urban areas (UN Water 2022, 5).

ASADAs are legal entities that have signed an agreement with the AyA to provide water services and as such they are subject to AyA's regulations. In addition to these formal community water operators, it has been estimated that there are an additional 1400 small, rural water committees that serve about 5 per cent of rural communities (Mora-Alvarado & Portuguez-Barqero 2020, 1; UN Water 2022, 5). These informal water committees do not have a delegation agreement with AyA and are therefore not subject to credit; they are known as rural aqueduct management committees (the Comités Administradores de Acueductos Rurales) (Mora-Alvarado & Portuguez-Barquero 2020, 1; UN Water 2022, 5).

Costa Rica has the highest coverage rate for potable water in Central America. As of 2019, 98 per cent of households have access to an improved water supply (UNICEF 2020). Nonetheless, there are service gaps. First, access to water does not necessarily mean that it is safe. According to AyA in 2020, only 89 per cent of the population served received potable drinking-water quality, which means that 11 per cent of Costa Rica's population consume water of non-potable quality, thereby increasing the risk of developing waterborne diseases (Barrantes et al. 2022). About 1.8 per cent of the population (92,000 people of a population of 5.1 million) only receive piped water in the yard, and about 0.4 per cent of the population (21,000 people) have no service and are supplied directly from artesian wells and springs (Mora-Alvarado & Portuguez-Barquero 2020, 1; UN Water 2022, 5). Most of those who lack access to improved household water supply live in semi-urban areas of informal settlements and in rural areas, particularly in agricultural zones with high rates of poverty (interviews 6, 7). Second, Costa Rica is also failing at sanitation compared to its peers. Coverage rates remain very low, with only 10.49 per cent of total wastewater being treated as of 2017, compared to Honduras which treated 13.44 per cent (Fernández et al. 2021, 23). Untreated sewage and wastewater lead to ground and surface water contamination, degrading water quality, increasing the costs of providing clean drinking water and creating negative health effects.

Costa Rican Institute of Water and Sewerage (AyA)

Founded in 1961, AyA serves the purposes of overseeing, designing, constructing and managing drinking water infrastructure in urban and rural communities nationwide. From the 1960s to the late 1980s, there was a boom in construction of infrastructure to provide drinking water thanks to public investment. During these decades, over 60 per cent of the sector investments came from government resources, half of which were financed by multilateral and international loans (Lockwood 2004). As elsewhere in Latin America, this development of WSS infrastructure unfolded unevenly

as investments were channelled to urban areas. By 1980, water access in urban areas reached 88 per cent, but remained at only 63 per cent in rural communities (Dobbin & Sarathy 2015, 390; Morice & Robles 2011).

Since the late 1980s, the expansion of AyA's system has slowed (Alpízar 2016; Ortega Ponce 2006). For example, while AyA managed to build an important aqueduct that brought more water to San José and surrounding areas in 1987, they were forced to postpone the extension of the sanitary sewerage system. In the 1980s, the AyA also suffered a serious institutional crisis, revolving around mismanagement, that led to severe water shortages (Alpízar 2016, 47). This led to an intervention between 1986 and 1988 in which the national government installed a new board of directors to carry out an evaluation of AyA policies and administrative functioning, as well as to make recommendations on how to avoid future water shortages. During these years, numerous disputes erupted between members of the intervening board and the dismissed board of directors. Various directors resigned (Alpízar 2016, 47). These kinds of scandals related to accusations of corruption and mismanagement continue to this day (Mesen 2023).

In terms of corporate governance, the AyA is an autonomous agency, but the national government appoints the members of the board of directors. As UNDP advisor Gerardo Quiroz explains (interview 17), some AyA boards have been more favourable towards providing financial and technical support to the ASADAs than others. Some boards have embraced a "solidaristic mission" to finance projects in other areas of the country while others have understood the organization's mandate more narrowly to focus on serving users within AyA's own concession area (the capital city San José), in addition to its role as a regulator. Without a clear national directive on cross-subsidization, it will be difficult to develop a more equitable and predictable national financing strategy in order to build an integrated water system.

Water supply and sewerage system management associations (ASADAs)

Since 1976, water committees have built piped water systems that were operated under the umbrella of the respective development associations of each community. In 2005, these committees were transformed into ASADAs through delegation agreements. ASADAs are under the technical supervision of the AyA both in terms of water quality (the National Water Laboratory of the AyA) and sanitary sewerage (Alpízar 2016, 48). However, current regulations do not establish any obligations to provide sewerage services, which has created a regulatory vacuum. Yet ASADAs are obliged to protect water sources and watersheds, even though enforcement is clearly lacking (Alpízar 2016, 44). As of 2022, only 1 per cent of ASADAs provide sanitation services (Araya 2022). In most rural areas, waste management is done by free disposal, either by means of septic tanks or in open channels.

Costa Rica's ASADAs are democratic, community-based organizations that are run by volunteer boards. By law, every ASADA must hold an annual assembly open to all their members, which are known as "subscribers." Any subscriber may also run for election for a position on the board if they are in good standing. However, given that the subscriber must also hold a land title in the service area, ASADA boards tend to be male dominated. Despite legal changes in 1990 that allow for joint titling of property and shared administrative rights for married couples, equality in property ownership has not been achieved. It has been estimated that only about 15 per cent of ASADA presidents identify as female (interview 4). Many of our respondents also expressed concern about declining rates of citizen participation, especially by youth (interviews 2, 3, 4, 6, 7). Some ASADAs are exploring ways to allow for subscribers to delegate their authority to encourage more women and young people to participate.

The ASADAs have been rightly celebrated for vastly improving the rates of water coverage in the country (Romano et al. 2021). However, Dobbin and Sarathy point out that the focus on high coverage rates obscures "a more complex and nuanced story of co-management and its relative success" (2015, 389). ASADAs also face environmental and climate-related challenges. The demand for water is increasing due to irrigation, tourism and increasing rates of household consumption. As state-led investment has slowed in the past few decades, conflicts have erupted around water allocation, policy and scarcity, particularly within the drier provinces. While Costa Rica is a water-abundant, tropical country, climate change is creating new pressures and has uneven effects. Hydrologists have identified the Pacific slope in Central America as one of the areas in the world most prone to hydro-climatic emergencies, such as intense precipitations leading to floods and landslides, as well as drought (Stan et al. 2022). In some of the northern regions, scientists predict that significant water shortages will create semi-arid conditions, having a severe negative economic impact on the livelihoods of local communities (UNDP 2021).

ASADAs face structural challenges as well. Providing access to quality water services in semi-urban and rural areas entails higher average costs than compared with urban areas where economies of scale are possible. Particularly, in communities with dispersed populations, existing water supply infrastructure is often outdated and overloaded. This generates inefficiencies in water service delivery, which complicates the collection of fees from end users. For many ASADAs, instability in fee collection leads to financial uncertainty. This in turn creates a vicious cycle that impedes the ASADA's ability to plan for and implement targeted improvements and new investments—not to mention erecting barriers to accessing needed financing. While a few ASADAs have managed to secure donations from embassies, foundations and non-governmental organizations (NGOs), the main sources of revenue are tariffs and debt financing from public banks such as the BPDC (interviews 2, 3, 5, 6, 7, 15).

Patient, democratic financing for public water: the BPDC, the AyA and the ASADAs

The BPDC and Costa Rica's system of ASADAs are part of a wider solidarity economy that seeks to advance the interests of workers and enhance the well-being of the people (Li Bonilla & Villegas Barahona 2013). The mandate of the BPDC is to "to serve the social and sustainable welfare of Costa Rican inhabitants." One of the ways that they do this is by democratizing credit, for example, through the offering of soft concessional loans to communities that are otherwise "unbankable." The unregulated funds that have been established as a response to the demands of the Workers' Assembly also offer more flexibility. Ana Lucía Solano Garro, Executive Advisor in Promotion and Development at the Social Development Bank arm of the BPDC (interview 12), puts it succinctly:

> We serve populations that no other bank serves. This is the advantage we have. In order to fulfil our social mission, we must bank the vulnerable populations. We use different terms to assess the credit risk between the regulated and the unregulated funds. The analysis of credit risk is tailored to what assets they have and their particularities.

The formal relationship between the BPDC, the AyA and the ASADAs began in 2006. The president of Costa Rica at the time, Óscar Arias Sánchez (2006–10), had secured a loan with the Central American Bank for Economic Integration (CABEI), a regional public multilateral bank (Deras et al. 2021), to support the expansion of WSS infrastructure. Arias Sánchez, along with executives from the AyA, approached various public banks looking for partners to contribute additional financial resources. As Roger Conejo, Director of the Business and Corporate Bank—who is credited by his peers at the BPDC for having initiated their programmes for ASADAs—describes it, "The executives of the AyA knocked on the doors of the local banks. We were the only ones who answered" (interview 11).

As of 2023, the BPDC conglomerate offers four different types of financial products to ASADAs: two by the Business and Corporate Bank and two by the Social Development Bank. The products are differentiated according to the ASADAs' capacity to pay. As mentioned, while there are around 1500 ASADAs in Costa Rica, the BPDC has but a handful of active engagements. As of February 2023, the BPDC had 45 active credits and guarantees with 39 different ASADAs across the country. (All data about the number of loans provided below were provided by the BPDC in 2023 and compiled by the authors.)

The Business and Corporate Bank of the BPDC

The Business and Corporate Bank arm of the BPDC conglomerate provides regular access to business loans from the BPDC's own funds to Costa Rica's

ASADAs. These loans represent the largest portfolio with respect to BPDC loans in the water sector in terms of amount of money. ASADAs that access credit from this part of BPDC operations tend to serve larger populations, be more financially developed and have higher administrative capacity than their peers. Since these loans are part of the "normal" business operations of the bank, there is no set limit on the size of the loans. Nor are there special concessional interest rates or repayment schedules. For example, the Río Blanco ASADA took out a loan from the Business and Corporate Bank and used it to buy property in the community where two of its wells are located in order to protect groundwater resources.

The Business and Corporate Bank also provides BPDC contributions to the national SBD. The BPDC does so via FOFIDE (Fondo de Financiamiento para el Desarrollo, or Development Finance Fund). FOFIDE is designed to contribute to MSMEs. In particular, FOFIDE has specific target clients: women entrepreneurs (Mujeres, BP Empresarias); financial inclusion through microfinance (Población con baja inclusión financiera, Microfinanzas); and water (Agua, ASADAS). FOFIDE identifies ASADAs that are focused on the protection of the water supply for their regions as target clients. FOFIDE provides financing for the development of a fixed-term investment plan. ASADAs may borrow up to US$188,000 with a term of up to 240 months with interest at the basic passive rate set by the Central Bank of Costa Rica (otherwise known as the prime rate), which varies over the term of the loan. In June 2023, the basic passive rate was 6.33 per cent. For example, the Corralillo Nicoya ASADA obtained a loan from FOFIDE to purchase equipment, build an office and warehouse, and purchase the land where the buildings are located.

As of June 2023, there were 33 active loans to ASADAs with the Business and Corporate bank in these two portfolios: 11 with the bank's funds, 21 with FOFIDE and one being a mix of the two.

The Social Development Bank of the BPDC

The Social Development Bank arm of BPDC offers financing to sectors of the social economy that are unable to access regular BPDC loans. Therein, the Social Development Bank has a special fund for the development of MSMEs (Fondo Especial para el Desarrollo de las micro, pequeñas y medianas empresas or FODEMIPYME). FODEMIPYME was created in 2002 by Law 8262, the "Law for the Strengthening of Small and Medium-Sized Enterprises." The BPDC dedicates 5 per cent of its corporate profits to this fund. In addition to loans, FODEMIPYME provides grants and guarantees. Grants tend to be for technical training and other capacity-building activities, but not for financing infrastructure. As we explain in more detail below, to access this fund, the ASADA must have a certificate from the Ministry of Labour and Social Security that demonstrates that it is a social economy organization. The ASADA also needs to show capacity to pay (for example, income from

tariffs) but it does not have to have any other form of collateral. ASADAs can borrow up to US$50,000 with a term of up to 120 months with interest at the basic passive rate plus a risk margin. As of February 2023, there are ten active funds for ASADAs under this programme. For example, the Sarapiquí ASADA received a loan from this fund to finance the construction of a warehouse and purchase the land where the building is located.

The special development fund (Fondos Especiales de Desarrollo, or FEDE) of the Social Development Bank is the most solidaristic of the BPDC loan programmes. The FEDE was created in 2011 thanks to a demand from the Workers' Assembly. This programme is financed by part of the 15 per cent of BPDC's corporate profits. FEDE supports ASADAs, as well as projects for social housing and community organizations in various sectors. FEDE is aimed at smaller ASADAs with lower capacity to pay. Importantly, as Solano Garro notes above, these funds are not "regulated," meaning that the amounts do not appear in the BPDC's balance sheet. ASADAs can borrow up to US$275,000 from this fund. Loans have very flexible terms, and the interest rate is a basic passive rate with a ceiling (limit) that is guaranteed at the time the loan is granted. As of February 2023, there were two active credits to ASADAs under this programme. For example, the San José de la Montaña ASADA received a loan from this fund to build a new, modern office building for their administrative personnel.

Why the low level of take-up of BPDC loans?

When we inquired in interviews as to the reasons for why so few ASADAs had loans from the BPDC, respondents emphasized that it was not related to lack of demand for finance amongst ASADAs, nor the BPDC's lack of supply of sufficient, appropriate and affordable credits. Rather, they identified the problem as resting with the bureaucracy (interviews 1–7, 15–17). In the process of negotiating and seeking approval for a loan, ASADAs and the BPDC personnel face many barriers created by the regulatory system established by the national government and the AyA.

It is important to stress that the ASADAs in a position to secure bank loans to improve their services—such as the ASADAs featured in this chapter—are the exception rather than the rule. A report commissioned by the AyA nearly two decades ago estimated that out of the 1700 ASADAs at the time, only about 12 per cent were in a financial position to obtain credit (Lockwood 2004). Around 40 per cent were estimated to have savings of more than US$2000. Nearly half, however, were facing financial problems of one kind or another (Lockwood 2004, 35). While the AyA has made efforts over the past two decades to help ASADAs build administrative and technical capacity, the lack of savings and access to appropriate financing remains a problem. For example, in a 2021 survey of 38 ASADAs in the water-stressed north of the country, "lack of financing" was identified as the most important challenge affecting their sustainability (55 per cent of respondents) (UNDP 2021, 74).

Table 7.3 ASADAs interviewed for this study

ASADA, location (canton)	*Rio Blanco, Limón (Central)*	*Sarapiquí, Heredia (Sarapiquí)*	*Corralillo Nicoya, Guanacaste (Nicoya)*	*San José de la Montaña, Heredia (Barva)*
Type of loan	Normal loan (Business and Corporate Bank)	FODEMIPYME (Social Development Bank)	FOFIDE (Business and Corporate Bank)	FEDE (Social Development Bank)
Regulated or unregulated	Regulated	Regulated	Regulated	Unregulated
Loan amount	Not available	CRC 55 million (approx. US$101,000)	CRC 40 million (approx. US$73,500)	CRC 165 million (approx. US$303,000)
Term of payment	15 years	12 years	20 years	10 years
Reason for loan	Land with two wells and a house; protect the watershed	Land and infrastructure, warehouse	Land and equipment, office and warehouse	New office for administrative personnel
Qualification in AyA's Blue Flag Programme[a]	A	A	B	A
Number of subscribers	2300	4000	540	1759
Population benefitting from loan	8000	18,000	1890	7000

Source: Authors, based on interviews and analysis of documents.

Note: [a]AyA's Blue Flag programme is a benchmarking system that aims to promote environmental responsibility and quality water services.

This was followed closely by challenges related to "lack of technical capacity" and "institutional support" (45 per cent for both).

However, it is not the case that ASADAs are uniquely cash strapped compared to other water operators. Indeed, most water operators—even those in large cities in North America and Europe—are not able to generate the income needed for capital investments based on tariffs alone (McDonald et al. 2021; Alaerts 2019; Libey et al. 2020; Reis 2022; Heidler et al. 2023). As such, water operators throughout the world, both public and private, depend on investment and concessional loans from governments to finance both their operations and maintenance as well as capital investments needed for the expansion of infrastructure, which involves large, upfront sunk costs.

Public banks—even those with a strong social and development mandate like the BPDC—also face challenges when lending in the WSS sector because these banks must still exist and persist within a wider competitive and often financialized market (Marois 2021, 72–3). Public banks must be financially sustainable or risk collapse. Their status as banks limits their ability to offer loans to operators that have weak capacity to pay. As one former BPDC executive explained in an interview, many ASADAs do not possess resources that can be considered collateral (referring to an asset that could be seized or sold off should a loan become non-performing). In the case of the WSS sector, the infrastructure needed to make water drinkable and transportable (such as wells, pumps and pipes) is not easily dug up, uninstalled and sold off for cash. In short, the only collateral some ASADAs might have are cash savings, real estate, equipment and vehicles (interviews 1, 16). A further complication that interviewees stressed is that water services are essential services, and water is a natural resource that is under the public domain (interviews 1, 16). The human right to water is now enshrined in Costa Rica's constitution. As such, the ASADA's most precious asset—water—cannot be seized in the cases of non-payment of a loan.

Nevertheless, in the case of the FODEMIPYME, BPDC managers have found creative ways to redefine what can be considered a guarantee for a loan to work around this constraint. Under this fund, the BPDC has been able to lend to an ASADA with no fungible assets by asking them to move their users' payment accounts to the BPDC. In this way, the cash flow generated by users paying their water bills serves as the guarantee. This form of financial conditionality may be seen as developing a form of public bank–public water collaboration designed to overcome some of the structural barriers that are characteristic of contemporary financial markets. At the same time, it helps to sustain, and even foster, future public banking capacity.

In this regard, BPDC personnel recounted the legal and institutional challenges barriers that they have confronted in trying to find ways to finance ASADAs (interviews 9–14). For example, when the FODEMIPYME programme first started, ASADAs were classified as small businesses to be able to access these loans. However, the new minister at the time objected to the classification, noting that ASADAs are not for-profit businesses but rather essential service providers. By working together, public servants from BPDC and AyA found a solution that acknowledges that while ASADAs are MSMEs, they are also companies that provide an essential public service on a not-for-profit basis. An ASADA applying for the fund must now seek certification as a "social enterprise" from the Ministry of Labour and Social Development in order to qualify. However, this requirement erects yet another hurdle (or unintended consequence) in what is already a time-consuming and highly bureaucratic process.

Many of the interviewees complained about problems created by AyA's high degree of centralization. Under the terms of the delegation agreements, an ASADA must begin its request at one of the regional offices but get

approval from the AyA board of directors at the San José central office to qualify for a loan. Sometimes, loan requests are approved at the regional office only to be rejected by the central office. A retired manager of the BPDC social funds describes it as being a very frustrating process:

> Other colleagues from the bank would say…"I do not want to work with the ASADAs." It is a lot of work, and it is slow. [The project] passes by the whole cavalry of the AyA. First the regional office, […] then the legal department, which would always send the file back. […] In the meantime, the original documents expire. We at the BPDC cannot approve the loan until we have the go-ahead from the Board of Directors of the AyA. So, the process to approve a loan takes at least a year, or a year and a half.
>
> (Interview 16)

As a former project manager with the BPDC, Geovanny Mora, put it succinctly, working with the ASADAs and the AyA requires "Franciscan patience"—perhaps adding new connotations to the economic term "patient finance." Elected officials from ASADAs expressed similar frustration (interviews 2–3, 5–7, 15). In one extreme case, an ASADA reported that nearly five years had elapsed from the time of application until the first disbursement of the loan.

The AyA lacks institutional capacity to be able to process loans in a more expedient manner. In addition to providing water services to almost half of the population, AyA also serves as the sector's regulator. Fulfilling each aspect of AyA's mandate requires recurrent and steady resources. Both the UN Special Rapporteur on Water (de Albuquerque 2009, n.p.) and the UNDP (2021, 56) have observed that AyA staff are severely overworked, and that the agency does not have adequate personnel or operating budget to perform its various functions. As they argue, more investment is necessary for AyA to be able to fulfil its mandate. For example, the processing of BPDC/ASADA loan applications requires adequate levels of specialized staff who feel valued and empowered to do their jobs.

There is little doubt that AyA faces considerable resource constraints, both human and financial. Its main source of income is tariffs from water and sanitation services, which are set by the national regulatory agency, the Public Services Regulatory Authority (Autoridad Reguladora de los Servicios Públicos). AyA's customers pay some of the highest water tariffs in Latin America and the Caribbean (Fernández et al. 2021, 44), but its budget for financing capital expenses in addition to operation and maintenance costs even in its own service area remains limited, leaving little space to support new WSS projects in rural areas or to increase the number of staff in its regional offices. Currently, AyA receives no fiscal transfers from the national government (interview 8; Fernández et al. 2021). The AyA also obtains sovereign-backed loans from multilateral and foreign national public banks (such as the Inter-American Development Bank, the CABEI and the German KfW) but is responsible for the corresponding debt service costs and capital

repayment (Fernández et al. 2021, 34). This puts further pressure on the AyA budget. Policy change is required to enable AyA to be better at supporting public–public collaborations.

Notwithstanding the challenges, in their current form, the BPDC's loan programmes for the ASADAs are considered successful, at least from the BPDC's perspective. In addition to the fact that the loans support the delivery of vital services in communities, as Geovanny Mora, former chief area supervisor of special funds for the Social Development Bank put it, the ASADAs "are good customers" (interview 1). The ASADAs with loans from the BPDC have all paid on time. Impressively, ASADAs kept up their payments during the COVID-19 pandemic, even though the government imposed a moratorium on water cut-offs from March to October 2020. Mora explained that in the special funds (including FEDE), the BPDC made two decisions in the first weeks of the pandemic to ease financial stress. First, the bank lowered the base interest rate from 6.5 to 4 per cent in each of the three loan portfolios (ASADAs, housing and social organizations in various sectors). Second, in the housing portfolio, the BPDC implemented a moratorium on payments of the principal. Since these tend to be the largest loans in their portfolio, in some cases, a customer's payment would drop by about 75 per cent. As Mora explained, "it meant that customers could pay their other bills, such as water and electricity." In total, during the intense pandemic years of 2020–21, the default in payment of the special development funds (FEDE) went up from 5 to 6 per cent, a very slight increase despite the severity of the COVID-19 crisis.

In sum, the BPDC is playing an important supporting role in financing the expansion of quality water services in Costa Rica by providing a combination of "hard" and "soft" loans to water providers, but these programmes could be expanded.

Strengthening public–public collaborations

If Costa Rica is to meet its SDG targets for water, particularly for sanitation and climate change, what is needed is not just more financing but more supportive, appropriate and patient financing. This means fostering and expanding innovative public bank–public water collaborations—such as that developed between the BPDC and the ASADAs—and expanding the loan programmes offered by public banks such as the BPDC to include the AyA.

Expanding the BPDC programmes to be able to serve smaller and more vulnerable ASADAs will require a renewed commitment to the social development mandate of the bank and strategic policy decisions about how to offset higher levels of risk within the BPDC. Making this strategy viable requires dialogue with and support from the national government. The costs and losses associated with concessional water lending need to be covered by dedicated government financial transfer or through democratically determined concessions made from within the BPDC.

At the strategic–institutional level of the BPDC, the board and senior management could task the BPDC with playing a larger role in the WSS sector (backed, or pushed, by the Workers' Assembly). This could be done by setting quotas and creating incentives to bank personnel to offer more loans to ASADAs. Currently, the BPDC plays a somewhat passive role by waiting for ASADAs to come to the bank to solicit services. Efforts to advertise the existing programmes could be strengthened by having BPDC personnel with experience negotiating these loans attending association meetings of the community-based water operators and ASADAs.

Another way to create incentives is to improve the way that the BPDC measures the impact of its activities. For example, the impact of the FEDE funds is currently not measured in any discernible way except financial return. In Argentina, FONPLATA has made results related to job creation and employment equity a key criterion for the allocation and monitoring of the loan (see Tobías & Case-Ruchala, this volume). Efforts to benchmark the BPDC's performance could also make better use of social indicators. The co-creation of transparent metrics that matter to both the funder and the affected community increases the effectiveness and efficiency of finance for development projects, not to mention allowing spacing for democratic oversight and consent (see Ray et al. 2020; Marois 2022; Marois et al. 2023).

Finding a path forward also entails finding the right balance between the need for regulatory oversight and operational speed. In the current regulatory framework, if any ASADA fails to pay back their loan, the AyA has the authority to put in place measures to rectify the situation, including dismissing the volunteer board of directors and seizing accounts to ensure that creditors are paid. The AyA is therefore absorbing the perceived risk of BPDC's investments by acting as a guarantor. So, while bureaucratic delays involved in the loan approval process require patience from bank personnel trying to meet yearly targets, these steps also provide a guarantee that once the project is approved ASADAs are very unlikely to default. Nonetheless, the AyA could streamline its procedures and delegate some of the decision making for the smaller loans to the regional offices. To make this possible, the AyA would need to increase the number of qualified personnel in the regional offices who are empowered to make these judgments and boost capacity in the central office as well, in order to prevent delays.

Here, there is another possibility of deepening the collaboration between the two public entities. As we have documented in this chapter, the BPDC has found imaginative ways to support and strengthen the participation of local communities in improving water and sanitation management by offering a variety of different kinds of loans under conditions tailored to meet the ASADAs' needs. The BPDC has developed valuable expertise in the process. One of the former BPDC executives put it as follows: "I can tell almost immediately by looking at an ASADA's accounts what their capacity is to pay"

(interview 1). The AyA, BPDC and ASADAs could create a collaborative funding panel composed of representatives from each institution to decide on financing requests. Such an initiative would have the knock-on benefit of democratizing credit and promoting financial knowledge building outside of the banks and water-provisioning knowledge within the banks.

Finally, finding a path forward will also require a new financing strategy designed to address existing service gaps. One option involves creating a line of institutional credit for the AyA. The BPDC has financed the public electricity company, the Costa Rican Electricity Institute (Instituto Costarricense de Electricidad) in this way, but it has no active credits with the AyA. The AyA could then expand its own services and play a more direct and rapid role in allocating credit to ASADAs, particularly to address service gaps in sanitation and drinking water provision in rural and remote communities. In moving forward, the BPDC can deepen relationships built with the AyA and other key stakeholders to drive more innovative and responsive policy-based programmes. The public sector can and should lead in the area, reclaiming and bolstering pro-public capacity.

One public bank such as BPDC should not be expected to resolve the water finance challenge alone, of course. New forms of non-competitive collaboration are needed. We concur with researchers who have called for increased financing from the international community for community-based management in Costa Rica, as well as in Nicaragua and Honduras (Romano et al. 2021, 815). However, in a place like Costa Rica, which has a robust public banking sector, these funding streams can come from *national* as well as international sources. Domestic public banks have a vital role to play in financing WSS infrastructure in communities and local regions. That is, banks like the BPDC can fill in part of the gap with patient domestic finance. Domestic banks reduce the cost of capital, notably foreign currency capital, which has the added advantage of lessening the currency risk (McDonald et al. 2021; Reis 2022). In addition, domestic public banks also fill the knowledge gap given their locations within communities and knowledge of the local economy (Buhr et al. 2018).

To these ends, one of the most innovative ideas gaining traction in international policymaking and climate finance circles is the creation of a syndicated public–public loan programme involving multilateral, foreign development and national development banks (Marois et al. 2023). The recently formed Water Finance Coalition of the French Development Agency (AFD) and the Finance in Common Summit is a nascent attempt to foster this kind of collaboration for SDG 6, Water for All. In Costa Rica's case, the AyA and the BPDC could take the initiative in cooperation with the other national public banks, such as the Banco Nacional and the Banco de Costa Rica, along with financing from multilateral development banks, such as CABEI, and from foreign public banks like the KfW and French Development Agency. Such a public–public syndicated loan programme would help distribute the

risk amongst several actors in the financial ecosystem, reduce the costs of capital, and do so while maintaining a clear public purpose of supporting public WSS services.

It would be possible, for example, to create a public syndicated loan programme in Costa Rica dedicated to the WSS sector, especially for upgrading systems to improve water quality, expanding sanitation services and helping communities adapt to climate change. Improving water quality requires improving sanitation by reducing contaminants entering surface and ground water. Historically, sanitation is the most expensive part of the service. Even once the networked infrastructure is built, providers face the "last mile" problem as households are reluctant to connect without proper incentives (Hall & Lobina 2008; Reis 2022). Meeting Costa Rica's goals for sanitation will require much higher levels of public investment. A multilateral public–public programme could also blend in grant and development assistance funds to support such infrastructure in ways that are climate resilient and equitable.

Conclusion

Although not without challenges, the relationships between the BPDC and the ASADAs are an example of a successful public–public collaboration. The BPDC has carved out an important niche within a broader financial ecosystem. The BPDC could play an even greater role in financing the water sector, and it is interested in doing so. However, the BPDC cannot replace the government in investing in infrastructure given its limited resources and the fact that it is a bank responsible for its own institutional sustainability. It must finance projects that are financially viable. Where BPDC does not have sufficient or appropriate resources itself, the national government, foreign aid agencies and multilateral institutions can partner to enhance the BPDC's capacity to deliver patient and appropriate financing at the local level, along with other public banks.

The BPDC is therefore an important actor in the story of financing public water and sanitation systems, but it plays a crucial *supporting* role. It is not a silver bullet in and of itself. The problems of uneven service coverage and quality, expanding sanitation services to mitigate the pollution problems and meeting the needs to adapt to climate change cannot be solved by public banks alone. National public water providers, like AyA, must innovate and find ways to reduce internal barriers to the delivery of effective and equitable WSS services. The national government must sufficiently resource and support *pro-public* public entities, and in doing so reclaim their public purpose. Multilateral and international actors need to rethink the disproportionate focus on leveraging and blending private finance and instead provide the resources needed to support existing public institutions, which is where the possibility for innovation lies.

Note

1 Website of the SBD: https://app.powerbi.com/view?r=eyJrIjoiZTNmM2QyMTAtMTVjMS00M2U2LTk2ZDAtMjAzMjE5NGIwNzk0IiwidCI6IjQxOTExZmU0LTc0Y2MtNDA3NC1iMjFjLTI4YmJmNzg3MjI4MCIsImMiOjR9. Accessed June 26, 2023.

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Appendix A: Interviews conducted

Interview	*Name*	*Role*	*Date*
1	Geovanny Mora Charpentier	Retired, former Chief Area Supervisor of Special Funds, worked at BPDC for 15 years	February 17, 2023
2	Guiselle Urbina	President of ASADA Rio Blanco	February 20, 2023
3	Julissa Jiménez	Administrator at ASADA Rio Blanco	February 20, 2023
4	María Fernanda Vargas Gonzalez	Advisor at Fundación Avina	February 21, 2023
5	Rodolfo Gamboa	Administrator at ASADA José de la Montaña	February 21, 2023
6	Rubén Salas	President at ASADA Sarapiquí	February 22, 2023
7	Zaray Molina Herrera	Administrator at ASADA Sarapiquí	February 22, 2023
8	Rosa María Gómez Arce	General Director Sustainability Service at AyA	February 24, 2023
9	Omar Sánchez Lizano	Director of the Social and Development Bank at BPDC	February 27, 2023
10	Eddie Garro Elizondo	Chief of the Special Funds, Social and Development Bank at BPDC	February 27, 2023
11	Roger Conejo Cubero	Director of Business and Corporate Bank at BPDC	February 27, 2023
12	Ana Lucía Solano Garro	Executive Advisor in Promotion and Development of the Social and Development Bank at BPDC	February 27, 2023
13	Alejandro Grossi Vega	Director of FODEMIPYME at BPDC	February 27, 2023
14	Juan Francisco Rodríguez Fernández	Businesses Deputy Manager at BPDC	February 27, 2023
15	Mario Alberto Paniagua Rodríguez	President of ASADA Nicoya	February 27, 2023

Interview	*Name*	*Role*	*Date*
16	Roger Mejía Valenzuela	Retired, Executive Businesses Special Funds, worked at BPDC for 30 years	March 3, 2023
17	Gerardo Quirós Cuadra	Advisor at UNDP	March 14, 2023

8 Assessing KfW support for public water and sanitation services in the Occupied Palestinian Territories

Genevieve Simmons and Thomas Marois

This paper explores the German public development bank (PDB), the KfW and its financial support for public water and sanitation services (WSS) in the Occupied Palestinian Territories (OPTs) through all KfW Palestinian WSS reports published at the time of the paper's original writing in 2022. The paper's point of departure is that PDBs are effective and appropriate institutions for the financing of WSS, and even more so in conflict contexts. In this scenario, the KfW is exemplary, having itself emerged out of World War II to support reconstruction and now functioning within conflict contexts like Palestine. At home and abroad, the KfW is active in WSS. As a PDB, the German KfW can take a long-term view to provisioning and supporting WSS as a matter of mandate rather than profit, thus privileging social impacts over profitable returns on investment. This has been the approach of the KfW in the OPT as it supports WSS as a matter of German development aid policy. This is evidenced in the four Palestinian community case studies of Tulkarem, Jenin and Tulkarem, Al-Bireh and Hebron outlined in this paper. The public projects are not perfect, but they illustrate the significance of policy-based PDB financial support for public water and sanitation in conflict situations.

Based on our case studies in the OPT, we argue that the KfW exemplifies the importance of PDBs actively supporting public WSS in development and conflict situations. We expand on this conclusion in five sections. The first positions the KfW as an "exemplary" (Marois 2021) PDB within the current literature. The second provides context for WSS in the OPT, including the weaponization of water in the OPT by Israel. The third introduces the role of the KfW in financing the development of water resources and infrastructure in the OPT. The fourth section details the KfW's own assessments of its WSS projects in Tulkarem, Jenin and Tulkarem, Al-Bireh and Hebron. A fifth section added to the original paper addresses the ongoing intensification in water weaponization since October 7, 2023, and is followed by a brief conclusion.

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Data collection methods include secondary academic literature research on the OPT, public banks, the KfW and WSS. The four case studies are based on a critical evaluation of KfW's post-evaluation self-assessment reports on WSS in the OPT. The research is supplemented by two semi-structured interviews conducted in July 2022: one with a KfW Development Bank director working in water and climate in the Middle East and another with a Palestinian Economic Affairs Officer for the United Nations Conference on Trade and Development (UNCTAD) with experience working with the KfW while establishing budgets for the Palestinian Authority's (PA) Ministry of Finance. Interviews on the OPT are difficult to obtain given the volatile political context. In-country fieldwork could not be authorized. It has not been possible to arrange follow-up interviews given the October 2023 invasion of the OPT of Gaza.

The KfW as a public development bank

PDBs have a long-established role in WSS infrastructure financing in the Global South and North (McDonald et al. 2021; Crespi Reghizzi et al. 2022; Marois & McDonald 2023). One important reason for PDBs financing WSS is because these public institutions can function according to policy (not profit) imperatives in the provisioning of essential infrastructure. WSS is essential infrastructure in all societies, and PDBs like the KfW have for decades had an essential role in providing supportive financing (McDonald 2023; Marois 2024). PDBs have also shown willingness and competence in post-disaster and post-conflict development finance, including for reconstruction (Marois 2021). In fact, the full name of the KfW is *Kreditanstalt für Wiederaufbau*, which translates into the "Credit Institute for Reconstruction," reflecting its post-World War II reconstruction mandate. There is a clear case for exploring PDBs in WSS and conflict. To date, we are aware of no such dedicated study or research.

PDBs are a specific type of public bank that are also known as second-tier, investment, promotional and policy banks (Marois 2021; Marodon 2022). PDBs differ from retail or commercial public banks because PDBs typically do not accept personal deposits and usually refrain from providing household financial services such as chequing, credit cards, mortgages and so on. Instead, PDBs issue bonds and draw on government resources to lend longer term, support larger projects and finance public infrastructure (Griffith-Jones & Ocampo 2018). That said, public PDBs also function within financial markets and are linked to domestic policy processes (Moslener et al. 2018, 83). PDBs will also on-lend to local public and private commercial banks (rather than lend directly to clients), and many PDBs have key roles in supporting micro-, small- and medium-sized enterprises (MSMEs) as well as large corporations (Marois et al. 2023).

Yet PDBs specialize in development finance. Many have high-level expertise in doing so within their societies, functioning as legacy institutions capable of

building intergenerational knowledge and material capacity, often oriented towards accelerating economic growth. Development banks may also provide guarantees, grants and subsidies to targeted sectors and can contribute technical expertise. PDBs have the capacity to effect a "coordinated strategy of policy change" and to foster synergies between the public bank, policy and regulation (Moslener et al. 2018, 83).

PDBs continue to play a large, even growing, role in infrastructure development (Griffith-Jones et al. 2018; Clifton et al. 2021; Mertens et al. 2021; Marois 2024). This is important because infrastructure development has positive and significant impacts on economic growth and helps to reduce income and social inequalities (Calderon & Servén 2014; McDonald 2023). Despite the promises of market advocates, the post-1990s opening up of global financial markets and the financialization of development have not resolved growing investment gaps in infrastructure. In 2016, McKinsey reported an estimated need for 3.8 per cent of global GDP to be invested in infrastructure, equalling roughly US$3.3 trillion per year, most of which is in the Global South (See Woetzel et al 2016, 9; Bhattacharya & Holt 2015). The investment gap for the United Nations (UN) 2030 sustainable development goals (SDGs) is even larger. In the Global South alone, the SDG annual investment gap has ballooned from US$2.5 trillion to US$4 trillion with an estimated total gap in the US$30 trillion range (UNCTAD 2023). While neither public nor private investment levels are where they need to be, public investors are outperforming private ones in much-needed climate and SDG financing. According to Climate Policy Initiative data on trackable climate finance, private investors contributed US$463 billion, or just under 33 per cent, of total climate finance in 2022, while public institutions contributed US$730 billion, or nearly 52 per cent (CPI 2023).

It is unlikely that profit-maximizing private investors can be an appropriate source of financing for essential infrastructure like WSS (let alone grants or concessional support). Schemes like the World Bank's "cascade" approach to mobilize private capital for long-term investments have been failing due to unfavourable risk-return profiles and long-term investment horizons, which shareholders often shy away from (Carvalho de Rezende 2018, 306). Private investors often prefer established, lower-risk projects and tend not to invest in construction phases with negative cash flows, of which infrastructure is initially subject (Bitsch et al. 2010; Wilkins 2014; EPSC 2017; Griffith-Jones et al. 2018, 8). Consequently, private finance for water operators is "almost non-existent" (Kolker et al. 2016, 1). Understanding that private investors are first concerned with maximizing returns rather than achieving public policy objectives around essential WSS infrastructure helps us to understand why low levels of private investment endure—and why low private investor interest can be seen in reality as a positive trend (McDonald et al. 2021). In almost every WSS scenario, private investment is inappropriate and likely counterproductive.

The enduring empirical reality is that public financing dominates WSS budgets, and is credible (Alaerts 2019, 21). What WSS private sector involvement does exist is tied to relatively insignificant public–private partnerships (PPPs) that are predominantly concentrated in wealthier communities, reinforcing the claim that private finance is structurally averse to prioritizing social equity outcomes (McDonald et al. 2021, 118–9). Even when public and private finances are blended in WSS, only 7 per cent is aligned with SDG 6 due to little potential for expected scales of economic returns (McDonald et al. 2021, 121). Short-term, profit-oriented, private and market-based finance is inferior in public WSS infrastructure financing. PDBs, by contrast, can be adept at managing the maturity, cost and scale of infrastructure financing, which are crucial for infrastructure due to high upfront costs and long construction pay-off periods (Griffith-Jones et al. 2018, 30). Moreover, PDBs can facilitate aid, grant and concessional financing into priority sectors as a public purpose.

The challenge, as Reis (2022, 883) puts it, is "how can the need to finance [WSS] services be brought closer in line with the abundant resources of public development banks?" The approach here, however, is not to simplistically assert that PDBs are *inherently* or essentially superior at financing WSS. Our view is only that PDBs have the *potential*. This reflects a dynamic view of public banks, which is an anti-essentialist stance that conceptualizes public banks as neither inherently good nor bad institutions by virtue of being publicly owned (Marois 2022; cf. Garcia-Arias et al. 2022; Güngen 2023; McArthur 2024; Mikheeva 2024). Rather, public banks are only as good or as bad as societies make them to be—subject to time- and place-bound, gendered, racialized and class-divided power struggles over what public banks do, why and for whom within global capitalism. Understood in this dynamic (hence evolving) way, societies can credibly command their PDBs to adopt pro-public operations. Yet a pro-public orientation is anything but guaranteed, with public banks also being commanded to adopt pro-private strategies, particularly given renewed multilateral pressure for financial de-risking, blending and PPPs to drive green transitions and SDG investments (Badré 2018; cf. Marois 2021). What is required is that governing authorities make better use of known PDB capacity to function differently from market forces, which tend to "under-supply socially beneficial investments" (Mertens et al. 2021, 5). That is, PDB policy-mandated financial support helps to render infrastructure investment economically viable (Chandrasekhar 2016, 23). Historically, PDBs have often led the long-term financing of complex and expensive infrastructure projects that have been necessary for socio-economic transformations within countries and regions (Kregel 2015; Marois 2021; Mikheeva 2024).

The German KfW is known to be a promising example of a PDB that is effective, stable and well-run at the same time as being relatively "green," democratic and guided by the public interest (VÖB 2014; Ervine 2018; Marois 2021). The KfW was founded in 1948 out of a context of conflict to

support societal and economic reconstruction, as well as the refugee crisis in war-torn post-World War II Germany. An innovative response to incoming US Marshall Plan funds, the KfW was "designed to hold the incoming capital, magnify it, and then to redirect it towards post-war economic reconstruction" (Marois 2021, 195). The KfW has financed an essential part of Germany's public infrastructure (Marois 2024). It also played a crucial role in German reunification by helping East Germany integrate with West Germany. Today, the Federal Republic of Germany holds 80 per cent of KfW ownership shares, and the German federal states hold the remaining 20 per cent (Moslener et al. 2018, 66).

At the end of 2023, the KfW had over EUR 595 billion in total assets (BankFocus 2024). Over the course of 2023, the KfW raised about EUR 90 billion (USD 99.6 billion) in capital in global markets, issued over EUR 111 billion in new loans and made a profit of EUR 1.6 billion (KfW 2024a). The KfW also provided just under EUR 11 billion in promotional lending to the Global South in 2023. Backed in federal law by a formal German state sovereign guarantee, the KfW can access financial markets at the "cheapest interest rates" and then offer loans below market rates, made possible by the fact it does not have a profit maximization mandate (Marois 2021, 197). This too sets the KfW up to help distribute German development aid. The policy-based trajectory of KfW projects is possible due to the financial support of the German government, but the actualization of its social impact and development mandate is contingent on execution (as analyzed below). While the KfW maintains substantial institutional flexibility, it must obtain consent from the Ministry of Finance for a project's financial commitments (Moslener et al. 2018, 69). At the same time, the KfW has access to government officials, regulators, in-house technical and engineering expertise and financial backing to "pursue economic—rather than purely commercial—objectives" (Moslener et al. 2018, 63). While not all investments at the KfW are independent of market principles, in-house expertise frees the KfW from relying heavily on expensive consulting firms, and this in turn raises the chances of project success given institutional commitments to capacity building and fostering long-term learning amongst KfW staff (Moslener et al. 2018; Marois 2021). *Global Finance* has ranked the KfW, with a triple-A credit rating, as the safest bank in the world for the last 14 years running (Marois 2024, 9). The KfW is a public repository of development knowledge, and it is often successful at funding large, complicated infrastructure projects because it gets involved in all stages of a project, from development to elaboration, execution and assessment (Studart & Gallagher 2016; Marois 2021).

Water supply and sanitation in the OPT

Any study of water in the OPT must begin by situating Israel's occupation of Palestine, which is an ongoing process of continued annexation and

occupation up to and including plausible present risk of Palestinian genocide (as ruled on by the International Court of Justice (ICJ) on January 26, 2024). In response to Israel's invasion, the ICJ stated that Israel must "take immediate and effective measures to enable the provision of urgently needed basic services and humanitarian aid" in the Gaza Strip. As of May 2024, the Palestinian death toll is approximated at 36,000. A very brief history of Israel's occupation of Palestine provides some limited historical context for the KfW's presence and probable future reconstruction interventions.

Palestine has been under constant threat and occupation since 1947, when British rule was terminated and civil war broke out in response to the United Nation's Partition Plan to create independent Jewish and Arab states alongside an internationalized Jerusalem (United Nations 1947). Over 750,000 Palestinians, some 85 per cent of the local population, were displaced from the area that became the State of Israel (Brouma & Ezel 2011, 1001). The establishment of the Israeli State in 1948 led to the first Arab–Israeli War. In 1967, during the Six-Day War, Israel captured the Gaza Strip from Egypt, the West Bank and East Jerusalem from Jordan and the Golan Heights from Syria.

The initial Oslo Accords signed in 1993 were a chimerical "peace process" wherein negotiations "reduc[ed] the Palestinian struggle to the process of bartering over slivers of land" and reinforced the status quo of Israeli settler-colonialism (Hanieh 2013). The Palestinian National Authority was then formed to govern in the West Bank and the Gaza Strip in 1994. Israel denied acknowledgement of a Palestinian State, and the Oslo Accords in 1995 effectively banned Palestinians from 60 per cent of the West Bank, including parts of Jerusalem, which both Palestine and Israel lay claim to as its capital. Although the Oslo Accords collapsed in 2001, and Israel disengaged from Gaza in 2005, Israeli-controlled borders and siege remain in effect to the extent that the international community still considers the territory as occupied by Israel. Since 2007, the PA has been split between an internationally recognized administration in the West Bank and an "internationally isolated Hamas administration in Gaza" (Brouma & Ezel 2011, 1001).

On October 7, 2023, Hamas and other armed groups crossed the Gaza border into Israeli territory. Over three days, some 1200 Israeli and foreign nationals in Israel were killed and approximately 5400 injured. Hamas forces abducted about 200 people from Israel. In response, the Israeli government has laid siege to Gaza, killing tens of thousands of Palestinians and destroying hundreds of thousands of homes as well as demolishing hospitals, schools, universities and basic infrastructure, including water and sanitation. This is the context at the time of writing and context for the ICJ's ruling of plausible genocide by Israel.

Behind the perpetration of plausible genocide is the long-term and sustained conflict context between Israel and Palestine, wherein Palestinians have struggled to build and maintain essential public services due to Israeli sanctions. These services include public WSS.

The weaponization of water in the OPT

The two main water resources for Israel and the OPT, both transboundary, are the Jordan River and the West Bank Mountain Aquifer (Brouma & Ezel 2011, 1003–4). There is also a coastal aquifer that has become increasingly abstracted (that is, pumped out) and salinated. Gaza relies on the latter (Cahill-Ripley 2011, 4). By 2011, over 95 per cent of Gaza's water was reported unsafe to drink, with the result being negative health impacts, particularly among the enclave's poorest inhabitants (Brouma & Ezel 2011, 1005) (and the current war has only intensified the water problem; see Hall et al. 2024 and Zeitoun et al. 2024). Inhabitants of the OPT are poor. According to a 2018 OCHA humanitarian needs assessment, "some 2.5 million people are in need of assistance on a total population of 4.95 million, and 1.9 million people are targeted by humanitarian interventions" (Romano et al. 2019, 23). The continuously deteriorating political and economic reality of the OPT exacerbates poverty through lasting effects upon people's ability to pay for goods and services, let alone pay for large-scale infrastructure like WSS that is meant to endure for decades. Due to Israel's hegemony over water resources, according to the World Bank in 2018, "water consumption in the West Bank averaged only 62 liters per capita per day (LPCD), less than the World Health Organization (WHO) recommendation of 100 LPCD for full health and hygiene benefits" (Bishara et al. 2021, 70). Considering climate change and rising fossil fuel prices—not to mention the fragility of almost inexistent infrastructure due to political instability—water sources in Palestine will continue to deteriorate, placing further pressure on ensuring adequate living conditions in any near future.

Already "from 1967 to 1974…the expropriation of land in the Jordan Valley by Israeli settlers meant that 87% of all irrigated land in the West Bank was removed from Palestinian hands," with "restricted overall water use by Palestinians, while Israeli settlers were encouraged to use as much water as needed" (Hanieh 2013). Net Israeli water imports have been calculated at over three times both amounts available from local water sources and average Palestinian water consumption rates. Water was an issue designated to be dealt with under Final Status Negotiations in the Oslo Accords, but because Israel had not officially annexed either the West Bank or Gaza (at the time, although Israel began illegally annexing the West Bank in 2023), Israeli national (civil) law does not apply to the Palestinian territories (Cahill-Ripley 2011, 125). The Oslo Accords distributed 90 per cent of the shared water to roughly 7 million people in Israel while the remaining 10 per cent was allocated to 3.5 million people in the West Bank and Gaza (Zeitoun et al. 2024). The Oslo Accords are also responsible for "the Joint [in name only] Water Committee which has jurisdiction over the West Bank only (and not Israel)" (Zeitoun et al. 2024). In order to build any WSS infrastructure in the OPT, a permit must be obtained from the Israeli army. In fact, the very first

military order Israel issued in the West Bank in 1967 banned Palestinians from drilling wells (Zeitoun et al. 2024).

In stark contrast to the OPT, according to 2015 data, 100 per cent of the Israeli population had access to water sources protected from external contamination and improved sanitation facilities (Rosenthal 2020). Israel's national water supply network is highly integrated, with wastewater recycling and desalination used to provide water for irrigation (Brouma & Ezel 2011, 1003). The integration and high level of service coverage is possible in part due to Israel's limiting of Palestinian access to the Mountain Aquifer and exploiting the upper Jordan River so heavily that "the lower Jordan River now has only 2% of its natural flow" and was mostly sewage as early as 2011 (Brouma & Ezel 2011, 1004). Additionally, researchers estimate that approximately "15 MCM [thousand cubic metres] /yr of the wastewater generated in the Occupied West Bank flows into Israel and is treated or partially treated in five Israeli treatment plants," then reused in the Israeli agricultural sector without any being reallocated to Palestinians in the Occupied West Bank (Salem et al. 2021, 135).

Israel argues that Palestinian water problems are "a product of internal PA [Palestinian Authority] mismanagement and that the Palestinians are pursuing a 'sewage intifada' [rebellion] against Israel" (Brouma & Ezel 2011, 1006), essentially making a scapegoat of Israel. This has provided justifications for Israeli weaponizing water infrastructure as the Israeli military has been deployed "indiscriminately or intentionally" to extensively damage water infrastructures. For example, in 2002, over 15,000 people in Jenin went without piped water for a month (Brouma & Ezel 2011, 1007). As evidenced during the ICJ's ruling on plausible genocide in Gaza, Israel has the ability to shut off the water supply to Gaza entirely and is willing to flood Gaza's sewage systems with salt water as part of its assault strategy, which puts the health and safety of the population at risk.

Asymmetrical governance systems in Palestine, including Israeli military control over water resources (El-Fadel et al. 2001, 58), are responsible for declining investment rates and weak management in WSS (World Bank 2009, 67). Israel commands 85 per cent of West Bank groundwater resources, where "more than 220 Palestinian communities in the West Bank (25% of total Palestinian communities) are not linked to public water distribution systems" (Jad & Mohammad 2001, 18). Depletion of Palestinian water resources corresponds to severe water shortages, with even harvesting rainwater restricted as long as new collection infrastructure is forbidden. A black market in buying and selling of water has arisen in attempts to address Palestine's lack of control of essential resources such as water, alongside Israeli obstruction of flows of goods that has slowed the development process in the OPT (Global Water Partnership Mediterranean 2015). Long before the most recent military assault, more water supply was needed to overcome infrastructural deficiencies, yet there are "significant economic, institutional, and political impediments" that made the maintenance and operation of existing

infrastructure and further expansion exceedingly difficult (Brouma & Ezel 2011, 1005).

The Palestinian Water Authority (PWA)

The Palestinian Water Authority (PWA) was established in 1995 by the PA to regulate the water sector (Global Water Partnership Mediterranean 2015, 16). The PWA aims for development in addition to meeting basic needs (State of Palestine 2017), with a new Water Law introduced in 2014 to further:

> develop and manage the Water Resources in Palestine, to increase their capacity, to improve their quality, to preserve and protect them from pollution and depletion, and to improve the level of water services through the implementation of integrated and sustainable water resources management principles. (Global Water Partnership Mediterranean 2015, 18)

In 2006, external sources provided 40 per cent of the PA's revenues, but clearance revenues and external aid (the two largest sources of funding for PA operations) are subject to political disruptions (Overseas Development Institute 2012, v). In a context where constraints can make "the movement of even one pipe a logistical and administrative challenge," development partnerships have been "stuck in emergency rather than strategic mode" (World Bank 2009, 67). With current conditions making integrated resource management "impossible" and development efforts dwindling "to a series of stop-gap coping strategies," reformulation of investment programmes is a priority action item (World Bank 2009, 67). Prior to the current assault on Gaza, approximately US$74 million was needed to "enhance the capacity of the wastewater treatment infrastructure in Gaza and to bridge the funding gap for operation and maintenance costs for water and wastewater facilities" (Middle East Quartet 2022, 5). This points to the need for greater support for WSS, of which PDBs appear to have a potentially vital role in supporting public water and sanitation infrastructure in development contexts (McDonald et al. 2021; Güngen 2022; Reis 2022; Marois & McDonald 2022).

The PWA faces barriers in building and maintaining sustainable WSS based on the facts of being an occupied territory and being poor. There are few viable options open to the PWA for securing market-based WSS funding at the pace, scale and on the terms appropriate for building and delivery sustainable WSS in Palestine. In private investors' logic, WSS in Palestine is not "bankable." According to a 2015 Global Water Partnership Mediterranean Report (see pages 16, 27, 33), the private sector and PPPs are largely unable to provide the rapid improvement of WSS in the region. In a settler–colonial conflict context like Palestine, private finance is entirely uninterested in and incapable of funding public WSS. The only option is public funding, and foreign concessional and aid-based funding at that.

The KfW in the OPTs' water and sanitation services

Since 2013, the KfW has provided EUR 6.3 billion to over 200 water sector projects globally, 21 per cent of which has gone to the Middle East (Reis 2022), and it has been active in Palestine since 1995 (KfW 2024b). As of May 2024, the KfW had 72 active projects in Palestine and a total portfolio of EUR 765 million. Following a review in late 2023, Germany's Federal Ministry for Economic Cooperation and Development (BMZ, *Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung*) decided to maintain aid and development cooperation in Palestine.

German aid, directed by the BMZ, has supported a number of WSS projects in the OPT. The KfW has been charged with delivering it. Alongside supporting implementation and expansion of central water supply networks and sewage management in urban areas, the BMZ's activities are guided by three principles that are relevant to the KfW in Palestine: 1) water's capacity to reduce conflicts; 2) an Integrated Water Resources Management approach; and 3) investment sustainability, or the ability for infrastructure to continue to operate beyond a project's scope (BMZ 2017). For its part, the PWA is broadly aligned with the BMZ and the KfW in its long-term goals of constructing sustainable desalination and wastewater treatment plants, improving network efficiency, increasing coverage, reusing treated wastewater for agriculture, and governance (Palestinian Water Authority 2014, 12). The German Society for International Cooperation (GIZ), an umbrella organization that encompasses GTZ (*Deutsche Gesellschaft für Technische Zusammenarbeit*), is a German aid agency that carries out the technical aspects of the BMZ.

In our interview with a Palestinian UNCTAD officer, the person suggested that the KfW is active in OPT WSS because "public banks are willing to take the risk" (interview 2). When asked why public banks take those risks, the official responded that this is because returns on investments are not prioritized; rather, public banks have mandates for public results and have access to better interest rates from international markets. In this personal view, public banks "have no political agenda" (a view that differs from ours). In the case of the KfW, however, it can take therefore a longer-term view of engagement in development projects than might not be possible from within the confines of shorter-term electoral cycles. Still, as Zeitoun et al. point out specifically in the context of transboundary water arrangements, "'transformative analysis' must critically evaluate the processes that establish and maintain the arrangements" (Zeitoun et al. 2020, 365), especially in inequitable arrangements where the less powerful actor is never favoured (Ibid. 371), such as the OPT where Western imperial (and thus also local) powers can stand to gain from involvement and influence. This applies to the contested functions of public banks like the KfW, which are always embedded within and subject to wider power relations, including within the OPT and throughout its continued occupation.

In another interview with a high-level KfW director engaged in the region, it was noted that funding the water sector in the OPT makes sense because it resonates on a global level, and because creating the conditions for reliable WSS can help to stabilize the political situation by creating respect for the PA. This stability is only possible due to the "PA's fully subordinated position," where state bureaucracy and "the ability to accumulate was always tied to Israeli consent and thus came with a political price—one designed to buy compliance with ongoing colonization and enforced surrender" (Hanieh 2013). With few functioning regional water utilities, local municipal administrations must oversee projects, and there can be a "fear of public backlash to raise further [funds]" due to poor maintenance necessitating quick rebuilds (interview 1). With financial commitments for maintenance and operating costs being hard to subsidize, the KfW director does not see WSS in the OPT becoming as regionally integrated and managed as the KfW would wish. On the debate of private bank financing in WSS, the KfW director stated that "the perception in Palestine is that private (international) funding would be more technically expert than local operators but much more expensive." However, with projects taking on average ten years to complete, WSS in the OPT "is not bankable."

KfW project report case studies from the OPTs

The following sections review four KfW WSS project reports in the OPT communities of Tulkarem, Jenin and Tulkarem, Al-Bireh and Hebron. The KfW reports are from 2008 to 2017, but the contents reflect a longer timeframe and illustrate how the KfW engages with Palestinian municipalities and WSS infrastructure. The engagements are imperfect, but they demonstrate the significance of policy-based financial support from PDBs for public water and sanitation in conflict situations.

Tulkarem

Tulkarem is a city in the West Bank, and this summary is based on a 2017 KfW post-evaluation report on funding for water and sanitation systems in this municipality over 129 months in the context of data collected from 1995 onwards (KfW 2017). The report states that investment costs of EUR 10.96 million were spent on construction; rehabilitation of the existing distribution network, wells and reservoirs; installing new pipelines and pumping stations; and training commercial and technical staff of the Tulkarem Municipality Water and Sewage Department, which was EUR 3.8 million more than planned. The BMZ, the German government aid programme, supported the KfW programme by providing EUR 10.16 million in non-repayable grant aid, of which EUR 9.85 million was funding and EUR 300,000 covered training components, with local counterparts contributing EUR 1.10 million. The project aimed to improve the living conditions

of approximately 100,000 people, including two refugee camps, by reducing unaccounted-for water (UfW), that is, water that is lost before reaching customers. The project was designed to prevent future health hazards by achieving an "economically efficient supply" of safe drinking water and was "sensitive to the possibility of conflict in that it focused on rehabilitating existing well components" rather than increasing yields (KfW 2017, 1). The KfW framed its water funding intervention in this way because Israeli authorities had already approved the existing wells' use, and gaining new authorizations for WSS projects in Palestine is an unpredictable and lengthy process (KfW 2017, 1). The World Bank confirms that WSS authorizations by the Israeli Civil Administration or Joint Water Committee in Palestine consistently come with "arbitrary" restrictions (World Bank 2009, 54). With the potential for conflict in mind, the KfW recommends future rehabilitations of existing well installations to increase yield as well as pump efficiency (KfW 2017, 1). This will likely be an enormous task given current conflict-related destruction of water infrastructure (see below).

The KfW uses five criteria to evaluate development interventions: relevance, effectiveness, efficiency, impact and sustainability. The Tulkarem water supply project received an overall "3" out of 6 in 2017, with "1" being the highest possible rating. The satisfactory rating of "3"—meaning that "the project fell short of expectations but that positive results dominated"—was assigned to each category of criteria aside from "relevance," which received the "good" rating of "2." Sustainability was rated on a 4-point scale, with "3" indicating a satisfactory rating overall despite the developmental efficacy being "very likely to decline significantly" (KfW 2017, 6). Criteria for sustainable operations includes a project being able to function independently for three years (interview 1).

From employing 39 people in 1998 to 122 people in 2017, Tulkarem delivers water to 15,000 households, nearly double the number from 1998 (KfW 2017, 4). In terms of financial sustainability, operating expenses have grown to US$2.4 million a year, whereas revenues only amount to NIS 7 million (KfW 2017, 5). The municipality is expected to make up the balance. A consumption survey on higher tariffs found that the financial burden of monthly water for an eight-person household was roughly 4 per cent of the average income per household, which is theoretically enough to cover the costs of maintenance and operations (KfW 2017, 3). However, only 65 per cent of water produced is actually billed for and collected (KfW 2017, 3). To motivate customers to pay their monthly bills, Tulkarem links the payment of water to power supplies (KfW 2017, 5) (which is perhaps a reflection of problematic cost-recovery pressures applied by KfW in water services). Low water tariffs make financial sustainability in WSS difficult, and water tariff revenues are "often used for other relevant municipal needs" (interview 1). The KfW director we interviewed confirmed that municipalities often prioritize other constituent issues if shortages are not too severe (interview 2). Even though funds are meant to be for new investments rather than

existing maintenance and operational expenses, "without donor financing, many municipalities wouldn't be viable" at all (interview 1). Cost recovery in water in Palestine, like in most places, is a distant reality.

The KfW report identifies positive trends in effectiveness, even if UfW levels did not meet objectives. From 1995 to 1997, UfW levels in Tulkarem measured between 47 and 54 per cent (KfW 2017, 4). UfW was intended to be reduced to 30 per cent, but levels stood on average between 35 and 38 per cent at the time of the report (KfW 2017, 1). This is a significant improvement. At the same time, the network doubled its length and number of customers. There are also no data on how much water is delivered to Tulkarem's two unmetered refugee camps, which account for roughly 25 per cent of the population (KfW 2017, 1). The report affirms a significant, consistent supply that is reliable (24 h, 1 bar of pressure), which is "remarkable in the context of the Palestinian territories" (KfW 2017, 2). The KfW report recognizes that "a further reduction in technical UfW would not have been achievable without substantial additional investments" (KfW 2017, 3).

The policy-based KfW financial supports enabled these improvements. The difficult working conditions of the Second Intifada (2000–05) increased required funds and prolonged the project term from 39 to 129 months (KfW 2017, 3). However, the KfW "always works with public partners," meaning large projects can be accomplished as long as there is patience (interview 1). This more consistent supply of water is reported to have reduced the explosiveness of the Israeli–Palestinian conflict from a Palestinian perspective, especially given that inhabitants of the refugee camps do not pay for water (KfW 2017, 4).

Jenin and Tulkarem

A 2011 KfW report examines the water supply and sewage treatment projects for the municipal administrations of Jenin and Tulkarem, located in the West Bank. Derived from the 1995 Oslo II Interim Agreement resolutions, the projects expanded the water supply network of Jenin and rehabilitated a pond sewage treatment plant in Tulkarem (KfW 2011, 1). The projects, planned in 1998, took 54 months to be completed in Jenin and 78 months in Tulkarem. Total investment costs equalled EUR 6.24 million, with all but EUR 0.64 million being financed through KfW financial cooperation grants and aid (KfW 2011, 1). For Jenin, the objectives were improved quality of water and a reduction in system water losses—technical and administrative—from 45 per cent of supply to 30 per cent (KfW 2011, 2). This involved implementing a water loss reduction programme, refurbishing an outdated plant, restructuring the distribution system and providing consultancy services. Tulkarem's programme aimed to reduce dissolved oxygen levels to 75 per cent of initial values and to "avoid the discharge of untreated water into local watercourses during the dry season" (KfW 2011, 2). Measures enacted in Tulkarem were clearing, renovating and expanding sewage ponds,

and providing suitable network connections, infrastructure and consultancy services.

The overall performance rating for Jenin and Tulkarem was "3" (satisfactory), with relevance receiving a "2" (good), efficiency a "4" (unsatisfactory) and effectiveness, impact and sustainability all receiving ratings of "3" in the 2011 report. Relevance was rated higher because addressing the efficiency of water resources, effective sewage treatments to protect soil and groundwater and reuse of treated sewage for agriculture all contributed to greater awareness of environmental protection (KfW 2011, 2). However, the human resources side is worth noting. In a 2009 World Bank report, the director of the Jenin water utility said he believed most staff would leave if they could find another job; they had not been paid for three months (World Bank 2009, 43). The director continues, "Why spend my life here for nothing? There is nothing on the ground that makes you hope" (World Bank 2009, 43), capturing the difficulty of being a public servant in a conflict situation.

Regarding effectiveness in Tulkarem, there had been no documented uncontrolled discharges of untreated sewage during the dry season since 2006 (KfW 2011, 2). The project has had an overall developmental impact on the region's capability to reuse treated sewage in agriculture that could "counteract overuse of renewable reserves of drinking water" and contribute greatly to integrated water management and political outcomes that would reduce the potential for conflict in Tulkarem (KfW 2011, 3). In Jenin, water losses were reduced for the three years after project completion, and residual chlorine levels lowered to safe drinking levels (and have remained so). However, administrative issues have reintroduced water loss levels of over 40 per cent (KfW 2011, 2). According to interviewees, less formality in Palestine allows for quick, flexible arrangements, but this brings a risk of corruption (interview 1). The Palestinian central government is seen as dysfunctional; "they need constant technical assistance and have a high turnover of staff due to all the NGOs that come, train staff, then steal them… me included" (interview 2). Local government, however, is "much more effective" than the unstable central government because of "immediate" accountability for elected officials and funding that is more plentiful (interview 2).

However, in both municipalities, efficiency was rated unsatisfactory, or "significantly below expectations, with negative results dominating despite discernible positive results" (KfW 2011, 5). This was because neither municipal body commands "adequate financial and administrative autonomy" to guarantee operations (Ibid. 3). The KfW aims not to completely take over utility management in such cases of municipal ineffectiveness; to do so would cause conflict (interview 1). "Foreigners are easy scapegoats" (Ibid.). Taking over services from municipalities would mean that the local governments would no longer collect relied-upon water debt paid by the central government (interview 2). The Jenin and Tulkarem projects represented "the most cost-effective option[s] for rapid emergency aid," but, according to the KfW report, due to "the Israeli army's periodic invasion and occupation of the

Palestinian territories, it was not possible to carry out construction work in a timely and proper manner" (KfW 2011, 3). It is near impossible to estimate a budget that will accurately predict effects of conflict. It is rather more important that conflict projects are able to cope financially with likely delays.

Still, the KfW tends to assert a cost-recovery message that likely has little applicability in Palestine. The KfW suggests that financial sustainability could be achieved, given political support, "by gradually adjusting tariffs in line with the market and by significantly improving allocative efficiency" (KfW 2011, 3). And, while the KfW report calls for further financial support for investment projects, training and the establishment of regional sanitation associations, it also suggests outsourcing WSS to "independent service operations" (KfW 2011, 3). Cost recovery is difficult enough, and outsourcing undesirable, even in the advanced economies of Europe (Marois & McDonald 2022), let alone in a settler–colonial conflict situation like Palestine.

Al-Bireh

A 2008 KfW report outlines the sewage disposal project in Al-Bireh, again with the municipality as the local executing agency. Al-Bireh functions under the jurisdiction of the Jerusalem Water Undertaking, a regional water utility with low UfW but high tariffs, as well as being "the largest and oldest service provider" in the OPT (Global Water Partnership Mediterranean 2015, 24). Of the EUR 14.6 million spent reducing health hazards for Al-Bireh's 50,000 inhabitants and conserving regional water resources by constructing a central sewage plan, the KfW provided all but EUR 1.3 million through KfW financial cooperation grants, aid funds and the GTZ (KfW 2008, 1). The GIZ "supported the municipal authority in setting up a separate department for sewage disposal, trained the personnel and procured and financed vehicles and equipment" (KfW 2008, 2). The project not only stabilized pipelines of the rapidly expanding city of Al-Bireh but also targeted the population of the neighbouring Jericho region, which depends on connected groundwater from endangered wells and water reserves. The project design originally provided for a pipeline to a more ecologically hardy neighbouring valley for an agricultural irrigation storage basin, but "the expansion of Israeli settlements and the heavy restrictions on access roads" obstructed implementation (KfW 2008, 3).

The Al-Bireh project received an overall performance rating of "3" (satisfactory), as did every other category of criteria aside from "relevance," which received a "2" (good). Despite municipal fiscal deficits, the KfW expects the city of Al-Bireh to maintain the sewage disposal project (KfW 2008, 5). Despite the unlikelihood of such a recommendation coming to bear, the report recommends that during the planning of high-priority projects like this one, that the German federal government and partner governments make a joint decision on cost recovery and decide on the "percentages of

running costs to be financed by each side and for how long" (KfW 2008, 5). To review their development projects, Germany and Palestine meet twice a year to discuss priorities. At the same time, the KfW's development mandate ensures that the bank follows through on continuing to provide financing (interview 1).

In terms of effectiveness, the treatment plant has been in continuous operation since 2000, and other than a single 15-month period, biological purity thresholds were met (KfW 2008, 3). One target for extending the sewage system was connecting 85 per cent of the population by 2005 and then 90 per cent by 2010; the 2008 connections level reached 79 per cent (KfW 2008, 3). Because automatic control of a sludge press has been inoperable since January 2005, only 33 per cent of sludge is dehydrated before being deposited at the disposal site, resulting in pathogens re-entering purified water (KfW 2008, 3). As a short-term solution, the Al-Bireh mayor provided written confirmation that two additional technicians would be employed to operate the machinery by hand, and available KfW funds would go towards sludge drying beds as a longer-term solution (KfW 2008, 4). For this reason, the report recommends that mechanical plants be designed with an option for easy manual operation in future projects (KfW 2008, 5). In a conflict zone with unreliable access to mechanical replacement parts, manual operation alternatives are required.

In terms of efficiency, delays and higher costs were incurred due "to the invasion of Israeli armed forces, protracted curfews, coordination problems and capacity bottlenecks with local building contractors" (KfW 2008, 2). The connection costs for the Upper North District of the city were considerable, but "considering the topographical situation of Al-Bireh and the wages and incomes of the population… reasonable" (KfW 2008, 4). And, in terms of overarching developmental impacts, the report deems that considering the initial operating levels and pledged commitments by the municipality and the KfW, the objective of treated water being used as a drinking water resource further down the valley is still attainable (KfW 2008, 4). Although only 50 per cent of operating and maintenance costs were met at the time of the report, the KfW expected a 2008 increase in sewage charges and planned joint billing with water to remedy deficits (KfW 2008, 5). At the time of writing, the KfW had not confirmed if its push for cost recovery of operation and maintenance costs in Al-Bireh had been met.

Hebron

A 2006 KfW report looks at a drinking water supply project in Hebron that began in 1995. Other than EUR 25,000 contributed by the city for acquisition of a well site, the project costs of EUR 7.09 million were funded by KfW financial cooperation grants and aid (KfW 2006, 4). The construction of two deep wells and an accompanying water transport system aimed to ensure at least 16 h per day of safe drinking water for the roughly 200,000 Palestinian inhabitants of Hebron by the year 2000 (KfW 2006, 2). With entire districts

shut off for weeks at a time in the summer months, Palestinians were using only 40 L per person a day on average, in comparison to 250 L per Israeli settler per day (KfW 2006, 2). The situation posed risks. Palestinians attempt to store rainwater unhygienically on their roofs, and there are health risks posed by sewage seeping into empty water pipes. The project aimed to address both (KfW 2006, 2). The overall performance rating of the project was "5," or a "clearly insufficient degree of developmental effectiveness" (KfW 2006, 2). Significance/relevance received a "4" (slightly inefficient), effectiveness and efficiency both "5" (clearly inefficient), and there was no category for overall developmental impact or sustainability in this report.

In this case, the engineering firm for the project was the partially state-owned Israeli consulting company TAHAL based in Tel Aviv. This was an anomaly raised in the interviews. It is also worrying. Interviewee 1 claimed that typically all projects have international competitive bidding. Project appraisal had classified the situation in Hebron as emergency relief, so TAHAL had urgently "been contracted directly by the project executing agency with the consent of the German Ministry for Economic Cooperation and Development (BMZ)" (KfW 2006, 3). Interviewee 2 noted that "direct procurement is fishy," and the fact that the project executing agency was the Palestinian City of Hebron does not contradict this view. Even the KfW report states that "the data on the hydro-geological situation in the conflict region published by the public authorities has to be interpreted with particular caution" (KfW 2006, 7). Indeed, test borings determined that existing water volumes were not as high as expected, so projected volumes were reduced, but water production of the wells was even lower in operation than anticipated (KfW 2006, 3). No further rise in water levels could be expected due to heavy overuse of the upper groundwater aquifer. Given such disparities in the expected and actual production of the wells and the fact that TAHAL had "comprehensive knowledge about the hydro-geological situation in the project region and had already prepared different studies and master plans on the drinking water supply in Hebron," the report casts doubt as to whether TAHAL ensured that tests were conducted properly (KfW 2006, 3). At the same time, political controversies obstructed the electricity supply system from being connected to the existing power supply line of the Israel Electric Co. (KfW 2006, 4).

The emergency construction, scheduled for completion mid-1997, only began operation in 2001 and was fully completed in 2003 (KfW 2006, 4). Israeli authorities delaying approvals and the city of Sa'ir's year-long refusal "to have the transport pipeline be constructed along their main road" already caused delays before the second Intifada began in 2000 (which closed the city centre to free movement) (KfW 2006, 4). At the time of the project appraisal, Palestinians consumed 17 per cent (around 115 million m^3/year) of the renewable water resources of the West Bank (679 million m^3/year), and the Oslo II Agreement was supposed to grant them an additional 70–80 million m^3/year of drinking water (KfW 2006, 2). However, because hydro-geographical

data were not made available for verification to the project executing agency or the KfW, the project caused inefficiencies and cost increases of approximately 31 per cent, and "contributed only slightly to an alleviation of the initial problem" (KfW 2006, 4). Total costs increased by EUR 1.38 million, in part due to road asphalting requested by the city of Sa'ir (KfW 2006, 4). The report suggests cancelling the remaining funds of EUR 86,000 as the executing agency has not yet used them to eliminate water hammer problems as was intended (KfW 2006, 4). Collection efficiency of 60 per cent had grown to 95 per cent in 1997, but it then dropped to 50 per cent in 2004 and then to a mere 25 per cent in 2006 (KfW 2006, 6). With multiple contributions from the World Bank, UNDP and the French government towards rehabilitating the Hebron distribution network, the report attributes the unacceptably high water losses to "administrative problems" such as illegal water withdrawals, manipulated water meters and incorrect meter reading (KfW 2006, 5).

This report does not treat sustainability as a separate evaluation category, but "rather as an element common to all four fundamental questions on project success" (KfW 2006, 7). Sustainability is determined by the project's facilities being able to carry on "independently and generate positive results after the financial, organisational and/or technical support has come to an end" (KfW 2006, 7). The report goes on to recommend that, in the future, a socio-economic preliminary study be prepared before intervening in a conflict area's water sector, even if the study "can only be prepared under a short-term expert assignment" (KfW 2006, 7). The KfW report indicates that the KfW encountered both financial and political obstacles surrounding the project, and that they would learn to walk the narrow path of providing their own expert technical advice while respecting local autonomy.

Intensification of water weaponization since October 7, 2023

Since the October 7, 2023, attack on Israel by Hamas, Israeli authorities have escalated their prevention and restriction of the entry of water, food, fuel and electricity into the OPT of Gaza, which had already been blockaded and periodically bombed since 2007 (that is, infrastructure destruction has been a long-standing objective of Israeli authorities). Insufficient fuel supplies have resulted in the collapse of WSS infrastructure in Northern Gaza not destroyed by Israeli bombing, resulting in tens of millions of gallons of raw sewage discharged daily into the Mediterranean Sea (Hall et al. 2024). UNICEF calculates an immediate cost of US$53.4 million to meet urgent water and sanitation needs (Hall et al. 2024). Inadequate clean water supplies exacerbate ongoing health issues of disease and infection that could spread throughout the geographic region (State of Palestine WASH Cluster 2023; Devlin et al. 2024). As of January 2024, at least 93 per cent of Gaza's population (1.9 million people) have been displaced, with the average Gazan living on no more than one third of daily emergency water standards, according to the UN (Hall et al. 2024). In December 2023, the World Health Organization

reported that there was but one toilet for every 486 people in Rafah and but one shower for 4500 people on average across Gaza (as cited in Murray & Bishara 2024). Regardless, "the pumps for sewage are not operating and the streets are flooded [with it]" (Muhammad Atallah, who works for the Palestinian Centre for Human Rights, in Devlin et al. 2024).

The escalation of violence by Israel in response to October 7 "translates into [even greater] restrictions of movements, forced evictions and displacement, house demolitions, search-and-arrest operations, disruption of schooling, and the continuous presence of the Israeli military and settlers" (Médecins Sans Frontières 2024) throughout the OPT. Up north in Tulkarem's refugee camp in January 2024, Israeli Defense Forces (IDF) damaged nearly 1000 homes and "destroyed most of the camp's roads, the water, electricity and sewage networks, as well as the telecommunications networks" (Asmar 2024). On January 25, 2024, IDF "broke into the city of Jenin and the outskirts of its camp and launched an arrest campaign amid widespread destruction of infrastructure." And although the city of Al-Bireh had been raided by the IDF in early 2024 [R. 2024 (truncated citation due to anonymity)], there were as of then no reports of damage to infrastructure.

The destruction of WSS by Israel is no accident. A 2009 UN fact-finding mission specified that the deprivation of water and the destruction of WSS infrastructure have long been Israeli strategies in Gaza and the West Bank (as cited in Murray & Bishara 2024). At the start of Israel's retaliation, it began shutting off the pipes supplying Gaza. At that time, Israeli Defence Minister Yoav Gallant stated that they were "imposing a complete siege on Gaza. No electricity, no food, no water, no fuel. Everything is closed. We are fighting human animals, and we a[re] reacting accordingly" (as cited in Murray & Bishara 2024). South Africa has since cited the weaponization of water in its ICJ case against Israel and its attempted genocide. Pedro Arrojo-Agudo, a UN Special Rapporteur on the right to safe drinking water and sanitation, stated that Israel "must stop using water as a weapon of war" (as cited in Murray & Bishara 2024).

Conclusion: an unknown future

In 2022, interviewee 1, a KfW director, reflected that in the OPT the KfW must remain politically neutral between the PA, Hamas, Fateh and Israeli authorities: "A project becomes as shaky as the central government," with Palestinians being directly affected by triggers in the Israeli–Palestinian conflict and used for leverage in lead-ups to elections. According to interviewee 2, a Palestinian United Nations officer with experience working in the OPT, politics and development are interwoven such that "there can be no development in Palestine while under occupation." The systematic devastation of Gaza following the October 7, 2023, Hamas attack into Israel demonstrates these points with terrible forcefulness. At the time of writing, the devastation

continues despite the ICJ's order for Israel to stop and to prevent likely genocide in the OPT. Continued cooperation between the KfW and Palestine's public WSS faces a wholly uncertain future.

What can be said is that the KfW's past WSS projects in the OPT reflect its unique capacity as a PDB to finance public infrastructure in the OPT specifically and in conflict situations as a matter of policy, not profit—even if never independent of wider power relations. The KfW in the OPT is reflective of wider public bank/public water experiences. Reis (2022, 819) writes that water operators in Latin America continue to approach the KfW because of "prior positive experiences…in particular regarding the technical advice that the bank provides on top of the funding." The KfW self-assessment reports suggest a willingness to provide developmental supports over the long term and as a reflection of need, even in uncertain conflict contexts. This is an important lesson, if one that must be tempered by the continued occupation of Palestine.

The capacity of the KfW, and of other PDBs, to provide policy-based infrastructure financing and aid funding to the OPT will be of paramount importance as the future need for reconstruction is certain. There will be no private sector alternatives, and even if there were, these for-profit sources are neither desirable nor viable for public infrastructure financing in conflict contexts like Palestine. Moreover, KfW will need to make use of its technical capacity and expertise to help channel development grants and aid into the OPT. In this role, there is scope for the KfW to lead on fostering public–public collaborations—that is, to work collaboratively with other PDBs and aid organizations to support the delivery of reconstruction finance. Indeed, the KfW was founded to support post-World War II reconstruction in Germany. The KfW could help do so in the OPT and play an essential role in public infrastructure rebuilding. But in whose interests and benefit? How can PDB funding support Palestinian independence and developmental aspirations? Further research into PDB financing of reconstruction would support not only Palestinian reconstruction but also reconstruction in other conflict contexts, from Ukraine to Sudan to eastern Turkey.

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9 Public banking and public water in the transition from authoritarian neoliberalism to the "new" pink tide

Success against the odds in the Brazilian Northeast

Victoria Stadheim

Introduction

At a time when many cities across the world are taking water back into public control through remunicipalization (McDonald 2018; McDonald et al. 2021), Brazil is experiencing an upsurge in privatization. While 81 per cent of the Brazilian population have access to public drinking water networks, only 55.8 per cent have access to public sewage networks (Sistema Nacional de Informações Sobre Saneamento 2022). This leaves almost 93 million Brazilians with no other option than resorting to individual and informal solutions for water and sanitation, which are not always safe (Sousa & Guimarães Barrocas 2017, 1). Moreover, a large part of the wastewater that is collected goes untreated (Sistema Nacional de Informações Sobre Saneamento 2022).

Large upfront infrastructure investments are required to address this situation, which raises pressing policy questions: which actors have the capacity to mobilize this finance? What are the best financial mechanisms? What role can Brazil's public development banks play? One of the perennial challenges in the WSS sector is that many areas with service deficits are also the least profitable or otherwise risky from the point of view of company finances and operational matters. These areas include rural communities, sparsely populated and impoverished areas, such as the *quilombos* in Brazil's Northeast—communities established by slave ancestors of today's black Brazilians.

Brazil has robust state-owned social infrastructure for the provision of WSS services thanks to decades of public investment. But during the recent administration of Jair Bolsonaro (2019–22), the drive to universalize WSS has served as a justification for privatization. His far-right government introduced legislation to deepen the sector's penetration by private capital (Diário Oficial da União 2020). This legislation placed severe constraints on public WSS operators, notably restricting their access to credit from public

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banks, which are their main source of borrowing (Cicogna et al. 2022; Cruxên 2022; Sant'Anna et al. 2021).

This chapter explores the longstanding but recently tumultuous relationship between public WSS operators and public banks in Brazil, asking what role public development banks *do and should* play in financing WSS. I focus on a case study of the Bahia Water and Sanitation Company S.A. (Empresa Baiana de Águas e Saneamento S.A., or EMBASA), which is one of 26 state-owned Basic Sanitation Companies (Companhias Estaduais de Saneamento Básico, or CESBs) that were established in the 1960s.[1] CESBs are public enterprises owned primarily by provincial states, and they remain the main WSS providers in the country (Pimentel & Miterhof 2022). EMBASA serves the state of Bahia in the Northeast of Brazil. The Northeast has low levels of water and sewage coverage, but EMBASA stands out as a success, with 98.4 per cent of the urban population served by public water networks and 54.6 per cent by public sewage networks compared with 90.1 and 39.2 per cent, respectively, in the Northeast as a whole (Sistema Nacional de Informações Sobre Saneamento 2022; EMBASA 2022a, 2022b). This relative success with coverage and investments informed the choice of case study.

The state-owned banks Caixa Econômica Federal (Caixa) and Banco Nacional de Desenvolvimento Econômico e Social (BNDES) are central to this investigation given that they provide the bulk of WSS finance in Brazil. Out of 1689 projects that received external finance for water, wastewater and integrated sanitation between 2007 and 2019, BNDES and Caixa financed 1665 of them, or 98.6 per cent (Sant'Anna et al. 2021, 172). Crucially, Caixa and BNDES are EMBASA's two main creditors (EMBASA 2022a).

This study finds that Brazil's state-owned WSS operators are no stranger to public banks, and vice versa. Public banks are old allies of WSS, dating back to the initial construction of Brazil's WSS system. This means that public banks have in-house expertise about WSS accumulated over decades, and it seems that no private bank can compete on this score. Yet, public banks are *dynamic* institutions (Marois 2021), and so is their relationship to WSS.

Within Brazil's turn to "authoritarian neoliberalism" under Bolsonaro, public banks in Brazil play a dual role. On the one hand, they serve as instruments for privatization. Bolsonaro's government erected obstacles to prevent public banks from lending to public WSS utilities, and their finance has been increasingly directed to private operators in recent years (BNDES 2022; Britto & Heller 2023; Montenegro 2023). CESBs have been starved of external investment finance, and this is indeed EMBASA's case (EMBASA 2022a, 2022b). Nevertheless, public banks continue to finance the water sector.

Whilst cautioning against one-size-fits-all solutions for the financing of WSS, this chapter argues that public banks' sectoral expertise and favourable financing conditions place them in a superior position compared with private sector financing alternatives. Long repayment periods match the investment–revenue cycle in WSS, and low borrowing costs facilitate water affordability.

This is particularly relevant in a country where extreme poverty rose by 48 per cent between 2020 and 2021 (Belani 2022) and where the costs of borrowing are very high. Recently, the Central Bank of Brazil set the bank rate at 12.75 per cent (Banco Central do Brasil 2023). In short, there is strong case to be made that public banks should finance public water as part of the government's efforts to alleviate poverty and reduce the costs of investment financing.

This case study is informed by interviews with high-level officials at EMBASA, BNDES and Caixa. The questions focused on the extent and type of lending to WSS, public banks' policy and mandate vis-à-vis the public WSS sector, and asked the two sets of actors to assess their relationship and scope for future collaboration. Interviews were also conducted with current and former staff from CESBs elsewhere in Brazil, a former national secretary for sanitation, and with key experts from civil society.

The chapter is organized as follows. The first section maps the Brazilian system of WSS provision, explaining who the actors are that currently serve the Brazilian population. Section two gives an overview of the centrality of public banking credit in the construction of Brazil's WSS. Section three is devoted to a case study of the state-owned utility Bahia Water and Sanitation Company (EMBASA) and its relationship to Caixa and BNDES. Finally, the chapter provides policy recommendations for the future of public banking and public WSS in Brazil.

Brazil's system of water and sanitation provision

The creation of 26 state-owned WSS operators, or CESBs—one for every state in Brazil—dates to the period of military rule (1964–85). Brazil's modern WSS system was built in this context of technocratic planning, centralization and authoritarianism (Heller 2009; Cunha 2011, 16). Today, municipalities are legally responsible for WSS services, but they may provide it directly or they may delegate it to third parties. While there is considerable heterogeneity in service modality, including direct municipal administration, autonomous public enterprises and private enterprises (Sistema Nacional de Informações Sobre Saneamento 2022, 41–54), most municipalities delegate water and sanitation to CESBs (interview 6).

CESBs' shares tend to be almost fully owned by the state in which they operate. Most are responsible for the full value chain (bulk and retail), and when they form contracts with municipalities they are allowed to collect tariffs from households and other users (interview 6). As of 2019, CESBs provided water for 75 per cent and sewage services for 50 per cent of the urban population. Private provision, although increasing in recent years, accounted for only 6 and 12 per cent of the urban population, respectively (Cruxên 2022, 92). As such, CESBs remain the main WSS providers in Brazil (BNDES n.d.-b; Pimentel & Miterhof 2022).

When discussing *who* provides WSS in Brazil, *how*, and for *whom* (Bayliss & Fine 2021), it is inevitable to note the stark regional inequalities that mark

the Brazilian water and sewage landscape. The Southeast, which includes São Paulo, Rio de Janeiro, Minas Gerais and Espírito Santo, consistently ranks better than national average in terms of access to services and network efficiency (for example, water losses). By contrast, the North and the Northeast are amongst the worst performers, with only 75 per cent of the population having access to public water networks and only 30 per cent having access to public sewage networks in the latter (Sistema Nacional de Informações Sobre Saneamento 2022, 78–81).

Inequalities in access translate into inequalities in revenue collection, and this gap has enormous ramifications for the prospects for investing in service expansion. Tariffs are the most important source of WSS investment finance, with operators' own resources accounting for 64 per cent of spending (Cunha 2011; Sistema Nacional de Informações Sobre Saneamento 2022, 78–81). The relatively wealthier Southeast concentrates almost half of national operating income from water and two thirds of national operating income from sewage. Half of Brazil's WSS investment in Brazil takes place in this region. In contrast, the relatively poorer Northeast collects about 19 per cent of operating income from water and 11 per cent from wastewater. Despite the huge deficit in WSS provision, the Northeast only accounts for 21 per cent of national WSS investments (Sistema Nacional de Informações Sobre Saneamento 2022).

Brazil's history of the relationship between public banks and public water

Public banks have played a central role in financing the WSS sector in Brazil. The National Plan for Sanitation (PLANASA), launched in 1971, introduced a division of labour where WSS responsibilities were allocated to different levels of government (Heller 2009, 323, 333; Pimentel et al. 2017, 237). PLANASA mobilized funds at a federal level and channelled them into the newly created CESBs (Cunha 2011). In 1964, the military government established the National Housing Bank (Banco Nacional da Habitação), a fully state-owned bank which financed housing and water and sewage infrastructure in Brazilian cities. In 1966, the government launched the Workers' Compensation Fund (Fundo de Garantia do Tempo de Serviço) to mobilize severance and social security contributions deposited by employers, which could be used in the case of redundancy, death or illness. The fund was managed by the National Housing Bank from its foundation, and the latter was responsible for approving WSS projects (Diário Oficial da União 1966; Diehl & Trennepol 2011; Heller 2009, 323; Pimentel et al. 2017, 237). The Workers' Compensation Fund became a major source of funding for urban development and WSS, and its funds provided a stable and predictable source of financing (Heller 2009; Diehl & Trennepol 2011).

A former national secretary for sanitation highlights the National Housing Bank's role as a source of stable WSS finance that set the country apart

(interview 9). Brazil had a state-owned financial institution with funds in national currency, with workers' deposits as its source. This fund was available to finance the construction of a sector that primarily required non-tradables (materials that were not imported). The expansion of WSS infrastructure did not depend on financing from the World Bank and other international financial institutions, although there were some loans from these actors. The Workers' Compensation Fund enhanced a degree of autonomy for the WSS sector since it offered an alternative to borrowing on international markets, on-lending such funds after converting them into national currency and repaying them in dollars. This arrangement thus avoided currency risk, which in turn helped to keep the costs of services low, since such risks would otherwise be pushed onto households in the form of higher tariffs.

Notwithstanding these merits, WSS credit was allocated in a highly centralized manner. Access to credit from the Workers' Compensation Fund was made conditional on municipalities delegating WSS services to the newly created CESBs (Pimentel et al. 2017, 237; interview 9; Cunha 2011, 17). Thus, while public banking credit served to expand WSS infrastructure, it also forced centralization and economies of scale, which transformed the political geography of WSS provision in Brazil.

The National Housing Bank was absorbed by Caixa in 1986. The original Caixa Econômica, which mobilized savings from popular classes, and Monte de Soccorro, which provided credit to the "less fortunate classes," had been established in 1861 (Câmara dos Deputados 1861). A century later, in 1969, CAIXA was instituted as a public enterprise with responsibilities for social services, the promotion of citizenship and national development (Caixa n.d.). When absorbing the National Housing Bank, Caixa acquired the institution's legacy and took over the management of the Workers' Compensation Fund, which it continues to do until today. The National Housing Bank's employees, including the engineers, were transferred to Caixa. Caixa became Brazil's most important financier of housing and a prominent actor for the financing of urban development—especially water and sanitation—which came to constitute a crucial share of its portfolio (D'Amico 2011, 48; Caixa n.d.; interviews 8, 10).

Public banks and WSS during the "pink tide"

A new period within the Brazilian WSS system started with the Workers' Party (Partido dos Trabalhadores, or PT) governments from 2003 led by Lula Ignacio da Silva ("Lula") and Dilma Rousseff (Heller 2009, 322), which benefitted from favourable global conditions, particularly a commodity boom which permitted fiscal room for manoeuvre (Campello 2015; Saad Filho & Morais 2017). The Workers' Party established the National Secretariat for Environmental Sanitation, which diagnosed a series of problems, including underinvestment, financial problems and a democratic deficit among the CESBs. Seeking to tackle this, Law No 11.445/2007 was

Brazil's first-ever national WSS law. The initiative was "ground-breaking" (Heller 2009, 330–3; Pimentel et al. 2017, 241–3). The law established the principle of universal access and basic sanitation as a state duty (Albuquerque & Ferreira 2012, 285; Heller 2009; Pimentel et al. 2017, 242, 245). The National Plan for Basic Sanitation (O Plano Nacional de Saneamento Básico, or PLANSAB), which was launched in 2013, set ambitious targets. By 2033, 99 per cent of the population was to have access to water supply and 92 per cent sanitation (Pimentel et al. 2017, 241–3; Pimentel & Capanema 2018, 394).

Law No 11.445/2007 instituted "public–public partnerships" as a distinctive contractual form. These are called "programme contracts" (*contratos de programa*) and are legally distinct from the "concession contracts" (*contratos de concessão*) which govern public–private partnerships. With this new law, public entities were no longer required to do a public tender to enter a contract with a public utility (interview 6; Pimentel & Capanema 2018, 392). Law 11.445/2007 insulated public–public partnerships from market-led competition and offered protection against the making of private profits in supplying WSS services (Pimentel et al. 2017, 241–3).

During the Workers' Party administrations, public banks continued to have a major responsibility for financing the public WSS sector (interview 6). At the turn of the millennium, Caixa was the major creditor to WSS, with resources from the Workers' Compensation Fund, and continues to mobilize contributions from workers with formal employment contracts to this day (interview 8).

The superintendent for credit to sanitation, transport and logistics at BNDES highlights the shift in public banking finance for WSS during the Workers' Party administrations (interview 4). Until then, BNDES had been a marginal player in WSS, but with the launch of the Growth Acceleration Programme (Programa de Aceleração do Crescimento, PAC), a major infrastructure investment programme launched by the Lula and Rousseff administrations, it acquired a prominent role (cf. Britto & Heller 2023; Pimentel et al. 2017, 248).The government chose a series of projects, and in the public sector, it was the states and the municipalities that selected the creditor institution (interview 5). BNDES has several financing mechanisms available for WSS, and the conditions have been among the bank's most favourable (Pimentel et al. 2017, 259).

PAC I (2007–10) included public investments in transport, housing, energy, water resources and sanitation. PAC II (2011–14) focused on energy, transport, social and urban infrastructure, housing, water and lighting and community services in health, education and culture (Pimentel et al. 2017, 248). CESBs were part of both phases of the PAC. R$40 billion (US$20 billion) was allocated to WSS in PAC I, whilst PAC II allocated R$45 billion. This was provided by general government transfers, contributions from states and municipalities and credit from BNDES and CAIXA (Pimentel et al. 2017, 248).

PAC involved a flexibilization of public debt rules vis-à-vis CESBs, provincial states and municipalities. The National Monetary Council (NMC), which is composed by the minister of finance, the minister of planning and budgeting and the president of the Central Bank of Brazil, regulates debt levels among public entities (interview 9). Under PAC, projects selected by the Ministry of Cities were exempt from the NMC's debt restrictions (Ministério da Fazenda n.d.; Pimentel et al. 2017, 248). Arian Bechara Ferreira, the Superintendent for Credit to Sanitation, Transport and Logistics at BNDES, highlights the centrality of the fiscal policy framework and public debt rules in channelling public banking funds to CESBs. As he explains:

> PAC was nothing more than a credit management discount to the public sector from the National Treasury. It gave permission for subnational entities to go into debt. That's what PAC was.
>
> (Interview 5)

With this authorization, public sector actors could approach public banks to seek funding for projects. Ferreira goes on to explain:

> That's when the BNDES started to play a relevant role in the sanitation sector. From then on, the BNDES started to create a portfolio. Today our sanitation portfolio for the public is approximately R$6-7 billion.
>
> (Interview 5)

Following PAC's launch, the funds that were contracted started to be reflected in actual investments, which reached R$12.1 billion in 2014, an 88 per cent increase from 2007. Non-repayable fiscal transfers became more important as a source of investment finance, but the use of water operators' own funds also increased (see Figure 9.1). The flexibilization of debt rules also translated into an increase in loans (Pimentel et al. 2017, 253–4). CESBs were the main investors in the WSS sector and a major destination for BNDES funds. Estimates suggests that they received approximately 52 per cent of BNDES funds for WSS between 2002 and 2018. Other beneficiaries included state governments, municipal governments and private enterprises (Britto and Heller 2023).

Notwithstanding these investment efforts, investments were lower than the needs defined by PLANSAB (Pimentel et al. 2017, 250–4). Officials from BNDES highlight problems with governance and revenue generation capacity among the CESBs as obstacles against lending to these institutions (Albuquerque and Ferreira 2012, 291–2). Furthermore, the regional distribution of investments was highly uneven. PLANSAB was concerned not only with the absence of services but also with unsatisfactory services. The Northeast accounted for 30 per cent of the country's water deficit and 32 per cent of the wastewater deficit but received only 24.5 per cent of national water investments and 13.2 per cent of sewage investments. By contrast, the

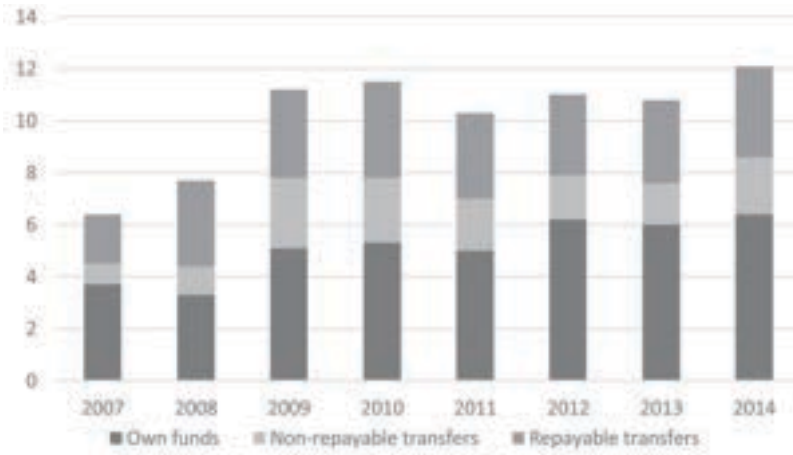

Figure 9.1 WSS investments by source (R$ bn in 2014 prices).

Source: Pimentel et al. (2017, 253).

Southeast was the major beneficiary (Pimentel et al. 2017, 255). Despite the Workers' Party's commitment to expand services to low-income households, the most impoverished parts of Brazil remained marginalized in terms of WSS investments.

Public banks and WSS under Bolsonaro

Brazil entered a deep recession and social crisis in 2014. Political polarization culminated in Dilma Rousseff's impeachment and Lula's imprisonment over corruption convictions, which were later annulled (Al Jazeera 2022). The rise of the far right engendered a fierce attempt to transform, marketize and privatize WSS. Former presidents Michel Temer and Jair Bolsonaro both issued decree laws and undertook legal projects for WSS. According to a board member of a CESB in the Northeast, "[t]he coup against Dilma led to a change in the behavior of public agents, and of financiers." He believes "an attempt was made to hurt state-owned sanitation companies once and for all—initially through public–private partnerships and subsequently through the New Regulatory Framework—to make resources available for the private sector" (interview 1). Bolsonaro's Federal Law No 14.026, or the New Regulatory Framework for Sanitation, was passed in July 2020. It made profound changes to Law No 11.445/2007 inherited from the Workers' Party administrations, undermining the role of CESBs (Cruxên 2022, 20; Marcos 2023).

The 2020 Law seeks to re-engineer the sector to enhance its profitability. It makes competitive bidding processes through public tender compulsory

whenever WSS services are delegated to third parties (Diário Oficial da União 2020). Importantly, it bans new public–public partnerships between municipalities and state-owned WSS providers, which are predominantly those contracts held by CESBs (EMBASA 2022a, 19). In doing so, it attacks state-owned companies, along with the legal framework that facilitated non-profit-maximizing public–public partnerships.

Public banks have also played a key role in this reprivatization of WSS, having become facilitators of private concessions. As Gustavo Montezano, President of BNDES for most of Bolsonaro's time in power, and a privatization secretary in the Ministry of the Economy before that, has noted: "we established the BNDES as the world's largest development bank structuring concession agreements, PPPs, and privatizations, with a portfolio that includes more than 150 projects and more than R$300 billion in mobilized capital" (BNDES 2022, 6). Water and sanitation have been key targets:

> BNDES is no longer just a financier of the sanitation sector, providing funding for projects. [It has] become a [coordinator] of concessions, transferring sanitation services to the private sector. The New Sanitation Framework […] created a legal regulatory environment that accommodates and attracts the private sector.
>
> (Interview 5)

BNDES and Caixa also remain by far the most important WSS creditors (interview 5, 7, 8, 10), having financed 98.6 per cent of externally financed WSS projects between 2007 and 2019 (Sant'Anna et al. 2021, 172). Private banks are now entering the market but they have little sector-specific knowledge and focus on private utilities (interview 5).

However, the relationship of public banks to the main providers—the CESBs—has been weakened, and their credit is also now increasingly channelled into private utilities. Caixa's contracts with WSS utilities through the Sanitation for All programme have been relatively stable over the last four years, but the flows of finance shifted to the private sector in 2021 after the New Regulatory Framework was passed. Approximately, R$1.46 billion ($US267.3 million) was allocated to public utilities in 2020 but this dropped to R$395 million in 2021, while funds allocated to private utilities increased almost nine times from R$158.5 million to R$1.38 billion (Montenegro 2023).

BNDES has also increasingly directed credit to private WSS entities. During public tenders, private concessionaries approach BNDES about financing conditions, and the bank provides finance according to the needs outlined in the tender (interview 7). In general, BNDES' financing volume for WSS was relatively low from 2015 onwards. The bank only signed ten contracts with the sector between 2019 and 2022. However, it is now booming. In 2023, the total amount contracted or awaiting approval amounts to R$3.7 billion, up from R$0.7 billion in 2022 (Britto & Heller 2023; Rigamonti 2023). Much

of BNDES' credit for WSS has been channelled through the bank's purchase of bonds issued by private WSS utilities. BNDES' funding for CESBs, on the other hand, has been in decline. BNDES only signed two contracts with CESBs between 2019 and 2022, and the remaining eight were with private companies. Only 2.7 per cent of the contracted amount was allocated to CESBs (Britto & Heller 2023). When asked to evaluate BNDES' collaboration with public water operators, Ferreira noted:

> [F]or a good while BNDES has practically not operated with the public sector [due to a] lack of public sector debt capacity. So, we have a very outdated track record. It's been practically four years since we've had direct funding for the public sector.
>
> (Interview 5)

BNDES and Caixa face severe obstacles against lending to public operators. These relate to the fiscal policy framework, debt ceilings and the use of state guarantees (interviews 5, 10). As noted, public sector actors, including states and municipalities, require authorization from the NMC to borrow (Montenegro 2023). With this authorization, public entities can approach the banks. According to Ferreira (interview 5), "these authorizations […] for indebtedness at the subnational level […] have practically not existed in the last few years […] so, nobody comes here to ask for financing." He said that "at the end of the day, it is not BNDES that controls this" but "the Treasury in Brasilia."

Furthermore, the New Regulatory Framework has created uncertainty around the future existence of the CESBs, and according to Caixa's former vice president for government, Tatiana Thomé de Oliveira (interview 10), this affects Caixa's lending behaviour. For Thomé de Oliveira, "what changed over the last few years is that we don't do any more credit operations [with the CESBs] because most of them were very indebted ... [and] because of the uncertainty that the New Sanitation Law brought."

Notwithstanding these constraints, high-level officials at BNDES and Caixa expressed openness to directing more finance to the public WSS sector (interviews 5, 7, 10). Cautiously speculating about possible changes with Lula's third government, Ferreira said that "the public sector *should* return" as a recipient of BNDES funds. When asked whether there should be mechanisms in place to allow the channelling of public banking funds into CESBs, Ferreira maintained that "[t]his is the big question in the sanitation sector." This is because there are "deficit companies" in "regions where tariffs do not necessarily cover the operation of the service." Hence, the question is "who will finance these investments" given that "tariffs will not" (interview 5). Thomé de Oliveira signalled that Caixa has capacity to expand its work on WSS with public actors and spare lending capacity. The Sanitation for All programme, which uses resources from the Workers' Compensation Fund, budgeted R$18.35 billion between 2019 and 2022, but only R$6.96

billion, or 35 per cent, was committed (Montenegro 2023). Notwithstanding public banking officials' availability to work with public WSS operators, this is ultimately first and foremost up to policymakers at the national level, since Caixa and BNDES are policy instruments of the Brazilian government.

Public banks and public WSS in the Northeast of Brazil: the case of EMBASA in Bahia

Having been the first CESB in Brazil to qualify for a loan agreement from the National Housing Bank, EMBASA has a long history of working with public banks—national and multilateral alike (EMBASA n.d.). EMBASA was established by state-level legislation in 1971. The government of Bahia owns 99.75 per cent of the shares, and the federal government, municipal governments and private individuals hold the rest. Being a state-owned WSS utility that operates in a region that is partly semi-arid, serving a socially vulnerable population—with 15.8 per cent of Bahia's population living in extreme poverty (IBGE 2023, 64)—EMBASA can be considered a successful public WSS enterprise. This is evident from Bahia's WSS indicators and from EMBASA's investment record, financial position and role in social policy.

While the Northeast has historically suffered from low WSS investment levels, Bahia outperforms other states in the region and indeed the rest of Brazil in a range of WSS indicators. Of Bahia's urban population, 98.4 per cent have access to public water networks, which is higher than the national average (93.5 per cent). When it comes to urban sewage provision, Bahia (55 per cent) is well ahead of the Northeast (39 per cent), although large upfront investments remain a task for the years ahead (Sistema Nacional de Informações Sobre Saneamento 2022; see Table 9.1). EMBASA merits most of the credit for these impressive WSS indicators, since it is the largest but not the only WSS provider in Bahia. EMBASA provides water in 367 of Bahia's 414 municipalities and sewage services in 114 municipalities (EMBASA 2022b, 1). Bahia has a separate state-owned company that serves the rural areas, the Environmental Engineering and Water Resources Company of Bahia (Companhia de Engenharia Ambiental e Recursos Hídricos da Bahia).

Table 9.1 WSS indicators in Bahia

	Brazil	*Northeast*	*Bahia*
Urban population served by public water networks	93.5%	90.1%	98.4%
Water losses	40.3%	46.2%	39.7%
Urban population served by public sewage networks	64.1% (114.8 million)	39.2% (16.3 million)	54.6%
Wastewater treatment	80.8%	77.9%	83.2%

Source: Sistema Nacional de Informações Sobre Saneamento (2022).

Booming investments and public–public relationships

EMBASA has been the main implementer of Water for All (Água para Tudos, or PAT) in the state of Bahia. The Government of Bahia launched PAT in 2007, in the context of Lula's second administration's Law No. 11,445/2007. PAT was funded with monies from PAC, the federal government, the Government of Bahia and EMBASA's own resources (EMBASA n.d.). Between 2008 and 2009, shortly after PAT's launch in Bahia, EMBASA's investments skyrocketed, after having dropped off in the 2000s. This was largely the outcome of an upswing in sewage investments. Between 2000 and 2022, EMBASA invested a total of R$15 billion, and of this, R$11 million was undertaken under PAT. In 2021, the company took over the coordination of the programme from the Government of Bahia (EMBASA 2022a, 44–6; 2022b, 7).

In recent years, EMBASA has been beating record after record as far as investments are concerned. In 2021, they invested almost R$900 million in WSS infrastructure, the largest investment volume ever. The number of sewage connections increased by 38 per cent that year (EMBASA 2022a, 45, 63). In 2022, they beat another record, investing over R$1.15 billion (EMBASA 2022b, 1, 6). Thus, EMBASA has a strong ability to carry out planned investment, and this capacity continues to improve. In 2021, EMBASA invested 73 per cent of the resources that had been planned for investments (the highest since 2018), and in 2022, this rate reached 84.5 per cent. EMBASA reports an "increased capacity to carry out CAPEX [capital investments]" (EMBASA 2022a, 43; 2022b, 6). Hence, EMBASA does not have a problem with executing works, which BNDES analysts have identified as a major constraint, even when resources were made available through PAC (Pimentel et al. 2017, 250; Pimentel & Miterhof 2022).

EMBASA's expanding public–public partnerships with municipalities have helped to achieve these impressive investment results since these have allowed the CESB to grow its presence throughout the state. In 2016, EMBASA had 92 programme and concession contracts with municipalities, and by 2021, this had more than tripled, reaching 303 (EMBASA 2022a, 41).

Bolsonaro's New Legal Framework for Sanitation has created a series of difficulties. The banning of new programme contracts has meant that EMBASA could no longer establish new public–public relationships with municipalities without winning a public tender (EMBASA 2022a, 41). Adding further insult to injury, the law bans EMBASA from renewing expired programme contracts. Despite being deprived of a contractual certainty, EMBASA continues to serve these municipalities but is precluded from making progress with the required upfront investments. As previously mentioned, the thrust of the 2020 Law is to encourage private concessions, but as officials from CESBs in the Northeast warn: "the private sector only serves areas that are profitable." Many municipalities with expired contracts are small and remote, situated in arid and semi-arid regions where the population "cannot

bear a tariff increase" and where "there is no economic return." Hence, private investors are uninterested (interviews 1, 2).

Cash generation and socially inclusive pricing

EMBASA has a strong ability to raise cash, and this conditions the company's relationship to public banks. EMBASA has a much stronger ability to generate revenue from tariffs than some other CESBs. There are external factors that condition revenue collection capacity, including demographic, social, political and legal factors, as well as historical gains in service expansion. Users' ability to pay water bills cannot be taken for granted, nor can state actors' enforcement capacity. There are CESBs in the Northeast that serve entire areas where billing is in suspension and where socio-economic vulnerability is a major driver of non-physical water losses. That is, unbilled and unpaid water can pose a challenge to WSS operators' capacity to raise revenue (CAEMA 2020, 27–8; interview 1).

EMBASA does not face this situation (interview 2). Their cost recovery rate is 93.61 per cent (EMBASA 2022a, 120). Moreover, EMBASA has pursued tariff increases when faced with post-pandemic inflation and higher costs for energy, chemicals and maintenance services (EMBASA 2022b, 8). The net income was R$456.8 million (USD 86 million) in 2022, an 18.3 per cent increase from 2021, and the net financial result was R$286.2 million (EMBASA 2022b, 1). Being a surplus-producing state-owned company, EMBASA is fully self-sustained through tariffs when it comes to operating expenditure (interview 2). Reflecting this, EMBASA is regarded an "independent" public enterprise. This makes it distinct from "dependent" CESBs, which rely on fiscal transfers (interview 9).

This revenue generation capacity does not imply that EMBASA exclusively focuses on profit maximization, or that it disregards water affordability. Nor does EMBASA's ability to fully recover operational costs imply that the company only cares for profitable areas. Like other CESBs, EMBASA defends the cross-subsidy principle, and practices this. Cross subsidies allow CESBs to mobilize funds from wealthy or revenue producing areas and use these funds to subsidize WSS in impoverished or unprofitable areas. This puts EMBASA in a position to serve municipalities in remote, arid or semi-arid areas where the population has a low payment capacity (interview 2). EMBASA also has a differentiated tariff structure, which distinguishes between customer groups according to their social profile and societal function. For example, they charge "social tariffs" to impoverished households that are recipients of the cash transfer programme Bolsa Família, and these households were not affected when EMBASA raised tariffs in 2021 (EMBASA 2022a, 42).

The drying up of investment finance under Bolsanaro

Despite having a strong ability to raise cash, tariffs do not suffice to pay for large upfront investments that are needed to universalize WSS across Bahia.

As a result, EMBASA requires external finance for major capital expenditures (interview 2; EMBASA 2022a, 118). Obtaining this has become more difficult in recent years. Alluding to Bolsonaro's New Legal Framework for Sanitation, EMBASA refers to "limitations of external resources still in place in under the political-economic scenario" (EMBASA 2022b, 6). EMBASA has faced a marked contraction of external sources, including non-repayable transfers and repayable loans from public banks. External resources accounted for 42 per cent (R$282 million) of total investment costs in 2019 but dropped to 32 per cent (R$254 million) in 2020, 23 per cent (R$206 million) in 2021 and 10 per cent (R$115.57 million) in 2022 (EMBASA 2022a, 45; 2022b, 6). EMBASA has continued to invest despite an adverse financing environment, including public banking funds and state-level fiscal transfers (EMBASA 2022a, 118).

Faced with this adverse financing environment, EMBASA has committed more and more of its own resources to financing investments. Tariffs charged of households and users form the bulk of investment finance. With a fast pace in investment growth, EMBASA's own resources going into investments has skyrocketed, increasing from R$416.9 million in 2020 to R$1.035 billion in 2022 (EMBASA 2022b, 6). Currently, EMBASA has only two sources of capital expenditure: its own resources and loans from public banks. The former accounted for 90 per cent of investments in 2022 (EMBASA 2022b, 6; interview 2). EMBASA's investment results have been facilitated by a strong cash-generation capacity, but a heavy reliance on tariffs is likely to be unsustainable going forward given the scale of financing needs.

Back to Lula—an evolving relationship with public banks

As of 2021, EMBASA had four sets of loan agreements, with all of the funds deriving from public banks (EMBASA 2022a, 179). The loans were primarily from BNDES and Caixa. First, EMBASA signed various contracts with Caixa between 2007 and 2012 to obtain funds from the Workers' Compensation Fund under the Sanitation for All programme. The purpose was to finance institutional development and water and sewage expansion in several Bahian municipalities. Second, EMBASA signed contracts with Caixa in 2013 to obtain funds from one of BNDES' credit lines that finances acquisition of machinery and equipment. The loan involved a public–public partnership between BNDES and Caixa. Third, EMBASA has a financing agreement with BNDES, with resources originating from the Workers' Support Fund. The purpose of this loan, with maturities in 2024, 2027 and 2029, is to finance expansion and modernization of water supply and sewage systems in cities in Bahia (EMBASA 2022a, 179; interview 4; BNDES n.d.-a). There was also one loan agreement between the Government of Bahia and the Inter-American Development Bank. The Government of Bahia transferred funds to EMBASA, as "co-executor," and the latter was obliged to reimburse the funds according to the terms of the contract. The loan was provided in US dollars, unlike the others, with 3.31 per cent interest rate. The Federal State

provided guarantees (EMBASA 2022a, 179), which is common in Brazil when loans are from a multilateral public bank (interview 5).

As of January 2023, EMBASA's only financing agreements were with BNDES and Caixa. From EMBASA's perspective, there are no private banks in Brazil that can compete with the terms that have been offered by Brazil's development banks in terms of loan amounts, repayment periods and borrowing costs. EMBASA staff described the amount that public banks have provided as generous (interviews 2, 3). EMBASA is satisfied with the repayment periods, which are amortized over a period of about 24 years. A member of staff at EMBASA referred to the repayment periods as "very long" and "compatible with the sector." EMBASA is also satisfied with BNDES' 4–5 years' grace period. The staff member elaborated on the specific nature of the investment–revenue cycle in WSS and how this begs for differentiated financing conditions with long-term loan maturities. The informant said that in WSS, "you don't recover the investment costs quickly," and that, for example, "if you construct a treatment plant," it is not possible to recover the investment costs in a short period such as 10 years. Therefore, "you really need differentiated repayment terms to be able to repay investments" (interview 2).

Finally, EMBASA considered public banks' financing costs to be "quite competitive." Their BNDES loans (with maturities in 2024 and 2027) benefit from a preferential long-term interest rate between 1.55 and 2.71 per cent. The interest rate on Caixa's loans is 3 per cent (with maturities in 2023), and 8.5 and 9.7 percent (with maturities in 2034) (EMBASA 2022a, 179; interview 4). As a testimony to public banks' superiority in lending to WSS, private banks play a minor role in financing EMBASA. The company's first private bank loan ever was a Santander bridging loan in 2022 with a "tight" repayment period (interview 2).

Notwithstanding the favourable terms offered by public banks, EMBASA interviewees reported having had a "poor" overall experience with public banks of late. Since Bolsonaro's New Legal Framework for Sanitation came into force, EMBASA has not been able to access BNDES funds under loan contracts that are already signed and operational. At the time of the fieldwork, EMBASA had also been unable to sign a new loan agreement with CAIXA (interview 2).

Faced with the rapid contraction in external investment finance, EMBASA is dissatisfied with the access to funding for capital investments due to a "change in BNDES' role" given its role in facilitating privatization processes. Echoing the comments of BNDES officials regarding the recent changes to the bank's lending practice, EMBASA staff concluded that "public banks only lend money to the private sector," further noting that "BNDES does not have any available credit lines. In practice there are none [for public WSS utilities]." While such credit lines may be listed on BNDES' website, in practice "they do not exist!" (interview 2).

EMBASA staff also point to Caixa's bureaucracy as a constraint. Negotiations over a R$730 million loan have taken over two years. The loan

agreement had passed all internal approval stages at Caixa (risk, engineering, project analysis, etc.), yet it did not get signed. EMBASA officials believe there to be a political bias built into the process. Caixa is a policy instrument of the Federal Government, which until recently was led by Bolsonaro, while EMBASA serves the state of Bahia, which is governed by the Workers' Party. The stalling of the loan agreement meant that works planned in ten municipalities could not begin (interview 2).

> In the absence of public bank financing, EMBASA has been compelled to develop a survival strategy. For the first time, EMBASA has turned to private capital markets: "We are turning to the capital market this year. Since the doors are closed we have been unable to access BNDES. At least for the time being, [since] we don't know the position of the new government. We are turning to the capital market precisely because of this, since we need to raise our investment level to minimum of R$ 1.5 billion…per year to universalize by 2033."
>
> (Interview 2)

As of January 2023, EMBASA was planning the second bond issuance in the company's history. The first bond auction took place in 2010, but the bonds were exclusively sold to BNDES and its subsidiary BNDES Participações (EMBASA 2010). To advance the most recent auction, EMBASA had been in contact with ten private banks and presented them with a business plan, long-term strategy and resource capture plan (interview 2).

EMBASA staff are conscious that turning to open capital markets is far from ideal. The repayment period is unfavourable compared with the public banking alternative. In January 2023, EMBASA expected that the bonds would have a 12-year maturity, half of Caixa's repayment period, and that the interest rate would be 16 per cent (interview 2, 3). It now turns out that the bonds will mature in 2028 (EMBASA & Vórtx 2023, 8). In a monetary policy climate where the federal funds interest rate is as high as 12.75 per cent (Banco Central do Brasil 2023), bond issuance will bring far higher borrowing costs than CAIXA and BNDES's credit lines. The high interest rates will necessarily need to be incorporated into the tariff structure. In the words of one official at EMBASA, "the entire population ends up paying an additional cost for this more expensive debt service." Due to the impact on water affordability and the short repayment period, which does not accommodate for the long investment–revenue cycle in WSS, EMBASA cannot fully finance investments and expansion on capital markets (interview 2).

As of September 2023, the auction of bonds worth R$300 million was still in process (EMBASA & Vórtx 2023). Meanwhile, it appears that the stalled loan agreement with CAIXA was finally signed on July 18, 2023. This happened after a transition to Lula's third term, which led to a change in CAIXA's leadership. EMBASA's new president, Leonardo Góes' reported that: "We signed a memorandum of understanding concerning R$730 million

to be distributed among […] municipalities, to universalize sanitation in Bahia. For some time, there has been no funding like this here in the state [of Bahia]" (as quoted in Fahel 2023).

This is likely to be welcome news for EMBASA officials who urged public banks to return to their old role of financing public infrastructure and offering loans with subsidized interest rates. Staff from the company made a human rights case for why public banks should finance public water (interview 2). Short of this, private capital market finance could compel CESBs to raise tariffs at the expense of water affordability. Hence, without affordable finance, the price mechanism could interfere with the human right to water and wastewater services. It is neither socially nor financially viable to fully finance WSS expansion and investments on capital markets. EMBASA staff were in no doubt that together with a regularization of public–public partnerships between the CESB and municipalities, public banking finance can better enhance investment to make swift progress with universalizing WSS in Bahia (interview 2).

Conclusion

In the context of Lula's third government, a third PAC (or "Novo PAC") has been launched, and "water for all" is one of nine pillars, whilst sewage is covered by another pillar on "sustainable and resilient cities." Novo PAC is to be funded partly by BNDES and Caixa (Agência gov 2023; Presidência da República 2023; BNDES 2023), and it can be expected that BNDES funds will be channelled to the WSS sector. Given the long-term investment–revenue cycle that is specific to the WSS sector, and given the large-scale investments that are needed in sewage, public banks have a crucial role to play. BNDES and Caixa continue to have deep expertise in the sector—so much so that private banks approach BNDES for training (interview 5). Private banks still play a marginal role in financing the public WSS sector (Sant'Anna et al. 2021) and do not offer the maturity and low financing costs that Brazil's public banks can offer (interview 5). Public banks can be considered the most viable alternative as far as bank loans for Brazil's CESBs are concerned.

In Lula's third government, there needs to be a social, political and cultural acceptance that water and wastewater provision cannot always be revenue generating, let alone profitable. Contrary to the idea that WSS can be delivered by the private sector, the WSS informants interviewed for this study warned that private investors are uninterested in concessions to deliver WSS to marginalized, remote, rural and racialized communities in the Northeast (interviews 1, 2). If this is true, state-owned enterprises will remain the only available providers. It is thereby crucial to retain and strengthen these institutions. Moreover, the CESBs consistently said that there are areas that are deficit producing, and others that are surplus producing. This needs to be accepted and accommodated through the continued use of cross subsidies,

which CESBs have practiced for decades. To allow the use of this water solidarity mechanism, it is vital to resist pressures to privatize in areas where WSS is profitable.

Given the diversity in human water geographies in Brazil, the present study does not recommend a one-size-fits-all financing matrix for the fulfilment of the human right to WSS. Instead, there needs to be an openness to various types of financing, depending on users' ability to pay tariffs and fiscal capacity at state and federal levels. Water companies' financing options are conditioned by the socio-economic environment in which they operate. EMBASA has a strong revenue generation capacity and can act independently of financial markets.

There are other CESBs with far less capacity to collect tariffs, and which are not in a position to issue bonds. But whether CESBs' revenue generation capacity is strong or weak, external finance for investment is needed in some shape or form. Whilst external investment finance must necessarily be tailored to fit concrete water realities, it is important to note that financial sustainability at firm levels sometimes means squeezing more tariffs out of households, which could exacerbate poverty. When deciding the appropriate funding matrix to finance investments in WSS, affordability should be given a high priority. Hunger and deprivation have recently risen in Brazil, and the absence of potable drinking water and access to sewage systems are among the facets of poverty. This is particularly true in the Northeast, the region with the highest incidence of poverty (48.7 per cent) and extreme poverty (16.5 per cent) in the country (IBGE 2023, 62). In light of this, there is a strong case for Brazil's public banks to reclaim the public–public focus they had in the past and redirect their credit towards the *public* WSS providers.

In a monetary policy environment characterized by high interest rates, public banking loans can help make water and sanitation services affordable. With Novo PAC having been launched, there needs to be a purposeful and deliberate engineering of financial flows at the level of fiscal policy and WSS legislation to allow fiscal transfers and public banking funds to be channelled into CESBs. This may include flexibilization or suspension of debt rules and a more extensive use of federal government guarantees for CESBs who borrow from BNDES, CAIXA and regional public banks such as Banco do Nordeste. The use of federal state guarantees is currently permissible, but more widely used when CESBs borrow from multilateral public banks (interview 5).

Finally, it is imperative that fiscal rules, public debt rules and the *politically* defined guidelines that inform BNDES' and Caixa's strategies and lending address the regional bias in WSS investments which was not successfully addressed by PAC. Brazil's North and Northeast, which are marginalized in terms of WSS investments and access, need to be given the highest priority.

Note

1 CESBs are responsible for portable water and sewage, which is the focus of this chapter. In Brazil, the concept of "basic sanitation" refers to an integrated set of activities: portable water, sewage, solid waste and drainage.

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Appendix A: Interviews conducted

Interview	*Name*	*Role*	*Date*
1	Anonymous A		January 23, 2023
2	Anonymous B		January 17, 2023
3	Anonymous C		January 23, 2023
4	Anonymous D		November 17, 2023
5	Arian Bechara Ferreira	Superintendent for Credit to Sanitation, Transport and Logistics, O Banco Nacional do Desenvolvimento	January 12, 2023
6	Edson Aparecido da Silva	Secretary General, ONDAS – Observatório Nacional dos Direitos à Água e ao Saneamento. Sanitation Advisor, Federação e Confederação Nacional dos Urbanitários – Central Única dos Trabalhadores	January 11, 2023
7	Eduardo Christensen Nali	Head of the Environmental Sanitation Department, O Banco Nacional do Desenvolvimento	January 12, 2023
8	Felipe Teles I. Cunha	National Manager for Privatization, Partnerships and Special Services, Caixa Econômica Federal	January 6, 2023

Interview	*Name*	*Role*	*Date*
9	Marcos Helano Fernandes Montenegro	Board Member, ONDAS – Observatório Nacional dos Direitos à Água e ao Saneamento. National Director, Associação Brasileira de Engenharia Sanitária e Ambiental (ABES). Former: National Secretary for Sanitation; President, Companhia de Saneamento Ambiental do Distrito Federal – CAESB; President, Associação Nacional dos Serviços Municipais de Saneamento – ASSEMAE; Secretary General, ONDAS	January 26, 2023
10	Tatiana Thomé de Oliveira	Vice President for Government, Caixa Econômica Federal	January 6, 2023

10 Public bank–public water collaboration in the Philippines

What potential for scaling up?

Jessel O. Quitorio, Ana Asumpta N. Perez, Victor G. Chiong, Arnaldo N. Villalon and Buenaventura B. Dargantes

Introduction

This chapter explores the potential for scaling up the collaboration between public banks and public water operators in the Philippines. Public–public collaborations (PPCs) are one way to mobilize the financing necessary at the scale, pace and terms needed to deliver equitable water supply and sanitation (WSS) services. The study suggests that despite some challenges, the foundation for greater public bank–public water collaboration has already been laid.

The Philippine Development Plan for 2023–28 (Neda 2022) acknowledges that universal access to safe, affordable and sustainable WSS services has yet to be achieved. To address deficiencies in investments in water infrastructure and service provision, the 2023–28 Plan has called for a new framework to allocate government resources for water projects. Our hope is that the lessons from this study provide insights that help to frame the discussion on how the Philippine Plan can meet its commitment to achieve the 2030 Sustainable Development Goal 6: Water for All (SDG 6), focusing on the advantages of PPCs.

As we detail in the chapter, water operators in the Philippines rely heavily on public banks and financial institutions to finance water projects. We document the important roles that three public financial institutions have played in supporting national government efforts to achieve universal access to water: the Local Water Utilities Administration (Lwua), the Development Bank of the Philippines (DBP) and the Land Bank of the Philippines (LandBank or LBP). We also examine the experiences of three local governments in the province of Eastern Samar—namely Borongan City, Jipapad and Arteche—in obtaining public finance from these institutions for their respective water projects, as well as the potential role that public universities can play in providing technical support.

Data for the multi-cited case studies come from primary and secondary sources. Primary data were obtained through key informant interviews, focus group discussions and stakeholder workshops. A list of sources of primary

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data is provided in Appendices A and B. Secondary data included popular and academic literatures as well as online information posted by the public banks, local government units (LGUs), as well as official government reports and orders. Documentation reports of fora and minutes of meetings of stakeholder groups in the study sites were reviewed. Newspaper reports were collected and analyzed.

This chapter is organized as follows. First, we provide a brief history of public water in the Philippines. Second, we offer a brief history of the public banks that have been involved in financing public water. Third, we evaluate the performance and significance of the public bank–public water relationship. Fourth, we present the lessons learned for possible future collaborations.

Existing data indicate that there is real potential to scale up public bank–public water collaborations in ways that respond to the financing needed to improve public water provisioning. For example, the combined amount of loans provided by the three financial institutions grew from US$15 million in 2018 to US$19 million by 2022 or an average annual increase of a little less than 7 per cent. At about the same time, the proportion of families with access to basic drinking water improved from 90.80 per cent in 2017 to 96.30 per cent in 2023 (Philippine Statistics Authority 2023).

This potential for scaling up, however, may not be realized unless certain barriers are overcome. The barriers include water operators' lack of technical capacity alongside adequate, predictable and sustainable public financing. Nevertheless, the findings suggest that significant benefits can be realized from enhanced public bank–public water collaborations.

A history of water service delivery in the Philippines

The collaborations between public banks and financial institutions and public water operators in the Philippines have been evolving since the turn of the 20th century. The first modern water system was established in the city of Manila in 1878 (Silva et al. 2012). In 1919, the government created the Metropolitan Water District to cover the city of Manila and the 14 cities and municipalities adjacent to it, and vested it with authority to contract indebtedness and to issue bonds. After the World War II, the newly established Rehabilitation Finance Corporation provided credit facilities to provincial, city and municipal governments for the rehabilitation, construction or reconstruction of (among others) waterworks and other self-liquidating or income-producing services (Republic of the Philippines 1946).

In 1955, the government created the National Waterworks and Sewerage Authority, which took control, direction and general supervision of all waterworks, sewerage and drainage systems of the Metropolitan Water District, of the Wells and Drills Sections of the Bureau of Public Works and of water projects of other government agencies. It was dissolved in 1971 and replaced with the Metropolitan Waterworks and Sewerage System, which was authorized to contract indebtedness and to issue bonds.

Presidential Decree 198, or the Provincial Water Utilities Act of 1973 (Presidency of the Philippines 1973b), further changed the public banks–public water ecosystem by authorizing provinces, cities and municipalities to create water districts to operate and maintain reliable and economically viable water supply and wastewater disposal systems for their respective population centres. That same year, the national government created the Lwua, whose primary task has been the promotion, development and financing of local water districts. The Lwua has been authorized to set the technical, financial and management standards for local water utilities, to monitor conformance to these standards, to provide technical assistance and institutional development support and to review water rates (Lwua 2022b). As discussed in further detail below, it also plays a public banking or financial institution role by providing loans for water supply projects using funds from the national government, from bilateral and multilateral sources and from internally generated revenues and second-generation income.

Further reforms in the WSS sector were introduced by the Letter of Instructions 683 (Presidency of the Philippines 1978a), which encouraged the formation of water districts, associations, cooperatives or corporations and systems directly operated and managed by local governments as well as self-help and self-reliant water supply projects. These reforms meant that:

a The Metropolitan Waterworks and Sewerage System would concentrate its operations in Metro Manila and adjacent areas.
b Lwua would promote water districts in cities and municipalities, and continue to provide institutional, technical and financing support.
c The erstwhile Department of Local Governments and Community Development would form water associations and cooperatives to operate and maintain community-level water systems and provide them with institutional, technical and financial support.

In 1980, the national government established the Rural Waterworks Development Corporation to provide institutional, technical and financial support to Rural Waterworks and Sanitation Associations, but it was dissolved a few years later, with its functions, assets and liabilities transferred to Lwua.

The state policy to attain complete coverage has given rise to a wide variety of water service providers (Dargantes and Dargantes 2007). By virtue of the 1991 Local Government Code (Republic of the Philippines 1991), the responsibility for facilities such as inter-municipal waterworks, drainage and sewerage, flood control and irrigation systems was transferred to provincial governments. Cities and municipalities were made responsible for small water impounding projects, artesian wells, spring development, rainwater collectors and water supply systems, drainage and sewerage, and flood control. Village-level governance units (*barangays*) were also to maintain water supply systems. The development of this infrastructure is funded using the

share of national taxes dedicated to LGUs, other local revenues, as well as support from the national government and government-owned or -controlled corporations.

In the face of such diversity, the Philippine Development Plan for 2011 to 2016 (Neda 2011) recognized that many small water districts and LGU-operated utilities encountered difficulty in sustaining operations and in generating capital for expansion because of inadequate financing and low technical capacity. Purportedly to rationalize the allocation and distribution of service areas, and to provide incentives for the development of infrastructure or for new, clean, efficient and ecological technologies, Senate Bill 2997 was introduced (Angara 2011). The bill also proposed the reorganization of the National Water Resources Board and the creation of local WSS companies. However, representatives of the Southern Tagalog Association of Water Districts and the executive vice president of the Philippine Association of Water Districts pushed back, arguing that the bill promoted privatization. They drew attention to the fact that water districts:

a Had not received any appropriation from the national government, but rather derived their funds by borrowing from banks and other financial institutions;
b Were established not to generate profits but to provide service, while generating income to pay their loans and to cover their costs; and
c Have proven their capacity to pay existing loans. (Silva et al. 2012).

The proposed bill did not pass.

As an alternative, the Department of the Interior and Local Government (DILG) (2017) launched the Adequate and Safe Water for All (Sagana at Ligtas na Tubig sa Lahat) or Salintubig Program, which targeted municipalities with low water service coverage and high incidences of water-related diseases and poverty. The programme covered 347 LGUs in 2013 with funding of US$25 million, 630 LGUs in 2014 with funding of US$49 million and 745 LGUs in 2015 with funding of almost US$59 million. Moreover, the programme endeavoured to enhance the capacities of LGUs in planning, implementation and sustainable operation and management of their respective facilities. Despite these efforts, Neda (2017) still categorized 337 municipalities, mostly located in the ten poorest provinces, as lacking access to safe water supplies, and the problems facing small water districts and LGU-operated utilities remained unresolved.

In view of these continuing challenges, the 2017–22 Plan proposed institutional reforms to encourage and guide investments in the WSS sector, to create an independent economic regulatory body, to enable more transparency and consistency, to formulate a unified financing framework and to consolidate and make more accessible all available financial resources to support water projects (Neda 2017). To improve the response from water districts and LGUs, the scope of the National Sewerage and Septage Master Plan was

expanded to include the provision of technical assistance to help operators improve service coverage and achieve operational efficiency (for example, how to reduce non-revenue water).

The COVID-19 pandemic brought new challenges to water districts and LGUs. Public health authorities recommended proper handwashing as a way to hinder the spread of the virus. Water operators had to face the critical burden of ensuring water availability to protect human health. In response, the government passed the Republic Act 11494 (Republic of the Philippines 2020), which tasked the DBP and the LBP with supporting economic recovery by providing funds that LGUs could use to subsidize interest payments for new and existing loans. This action is similar to the responses of other governments in the Global North and South that relied on existing public banks to help navigate the pandemic crisis (McDonald et al. 2020).

Confronted with the persisting challenges of poor water infrastructure planning, financing and management, the Philippine Development Plan for 2023–28 included in its strategic framework such interventions as investing in water infrastructure services provision and providing accessible financing for WSS projects. The 2023–28 Plan stipulates the rationalization of the economic regulatory environment, while tapping public–private partnerships (PPPs) to provide the needed water infrastructure facilities and services.

As of 2023, the amounts required for investing in water infrastructure service provision have not yet been specified in the 2030 Nationally Determined Numerical Targets for the SDGs (SDGs Secretariat 2023). This is because the estimated funding requirements for SDG 6 fall within the purview of the General Appropriations acts, which are formulated every year. The Public Investment Program (Neda 2023), however, provides a list of projects on water supply development that address Chapter 12: Expand and Upgrade Infrastructure of the Plan 2023–2028. Under this programme, water projects require investments of US$142 million to US$208 million per year for an aggregate of US$1.041 billion by 2028.

Financing public water in the Philippines

Advocating for more strategic and effective collaboration between public banks and public water operators does not sidestep the challenges of realizing it effectively, accountably and in the public interest. Such advocacy acknowledges that collaboration takes time to test at a systemic level and at the national scale. It does not imply, however, an endorsement of the "cascade approach," whereby public money is used to de-risk private investments in public infrastructure, an ideological agenda which is promoted by the World Bank and multilateral organizations (Duarte 2017). PPCs are an alternative to this approach and offer better potential to achieve the SDGs targets on water (McDonald et al. 2021).

For some time already, Philippine public financial institutions and banks have been building the foundations that allow for a scaling up of public

finance for public water and sanitation. To date, the potential of Philippine public banks to better support the funding requirements for clean, equitable and sustainable public water has not been adequately studied. Case studies from the Global North, such as that by the Assembly of First Nations (2019) and from the Global South (McDonald et al. 2021; Marois & McDonald 2022), demonstrate that public banks can have a catalytic impact on financing public water and sanitation services. As such, we now turn to the roles of the three most important public financial institutions and banks that have been tasked with helping local governments obtain water financing to support operations and infrastructure development in the Philippines: the Lwua, the DBP and the LBP.

The Local Water Utilities Administration

Based on a national policy that prefers the local operation and control of water systems, the Lwua (Presidency of the Philippines 1973b) was given powers around water standards, procedures, design, construction, monitoring and evaluation, systems integration, investments, annexation and de-annexation and personnel training vis-à-vis water provisioning. Significantly, the Lwua also functions as a specialized government lending institution for local water operators. Lwua is permitted to borrow funds, which it can relend through its Revolving Loan Fund to qualified water districts. In short, Lwua functions like a public development bank.

In granting loans, Lwua takes as collateral authorized bonds or other evidence of debt from a water district, including mortgages on its properties. To access loans from Lwua, a local water utility must have:

a A certificate of conformance from Lwua;
b A feasibility study for the proposed project;
c Documents that outline the procedures that ensure payment and avoid default; and
d A programme of expenditure of the loan amount to ensure project completion.

In case of default in payment, Lwua is authorized, without the need for a judicial process, to take over and operate the water district until all overdue accounts have been paid, all reserve requirements satisfied, and all causes of default addressed.

As a government-owned public entity mandated to support water districts, Lwua is not without challenges and contradictions. For example, Lwua claims to be "the only lending institution […] with the financial, technical and institutional development competence to enable a water district's water supply project to generate return-on-investments" (Lwua 2022a). At the same time, Lwua considers rural water supply development as a "developmental endeavour" to assure communities of a reliable and sustainable water

supply (Ibid.). There appears a possible contradiction between the Lwua aim to make profits and to deliver on its pro-poor development objective.

The Lwua gets financial resources from the national government, from bilateral and multilateral sources, and from internally generated funds and retained earnings (Lwua 2022b). For example, Lwua requested a $60 million loan from the Asian Development Bank (ADB) for the Water District Development Sector Project. The ADB loan, which included a US$2 million grant, helped to finance the extension and rehabilitation of water supply systems and the construction of new sanitation facilities in water districts. This form of PPC among multilateral and national-scale public banks to fund public infrastructure has emerged as a promising option within global finance for sustainable development (Marois et al. 2023). More recently, however, different public financial institutions (as well as private banks)—which traditionally were inaccessible to water districts—have been providing funds. Lwua in turn releases these funds as loans to water districts at competitive terms or as grants. Simultaneously, Lwua works with water districts to help them achieve creditworthy status to better access non-traditional sources of funds.

In the past, the Neda (1994) mandated that Lwua should implement only financially viable projects and specifically target large commercially viable service areas for privatization. This commercialization policy led private corporations to enter into joint venture agreements with water districts operating in commercially viable service areas. Moreover, the Neda rule prohibited Lwua from intervening in projects, which have been deemed to be not financially viable, while delegating that responsibility to LGUs. This rule affected the Borongan water district, as discussed below, which was categorized as "non-creditworthy" (Lwua 2012, 2013), and thus had to access funds through "non-traditional financing" mechanisms, which effectively reduced subsidies to poor consumers (see for example, Agwwas & PSIRU 2005; Dargantes et al. 2013). Since Lwua loans bear higher interest rates, the smaller water districts have been clamouring for Lwua to charge interest rates that are at par with, or even lower than, what public banks offer—a step that could be beneficial to their operational performance and would help to overcome limitations in water sector financing.

In response to the Philippine Development Plan of 2017–22, Lwua (2020) committed to expand water supply coverage to provide 95.37 per cent of households with access to safe water. Considering that Lwua support is through water districts, the projects it has financed contributed to the installation of 4.762 million household service connections, equivalent to a service coverage of 61.35 per cent. The increase from the 4.582 million households with service connections in 2018 to the 2019 level of coverage was achieved by providing US$95 million in financial assistance to 122 water districts, US$59 million in loans to 120 water districts, and by reducing the interest rates on existing loans from 8.2 to 0–4 per cent. However, the reduced interest

Table 10.1 Lwua basic financial information, US$1000

Basic information	*2022*	*2021*	*2020*	*2019*	*2018*
Loans & receivables	127,546	136,825	134,114	127,762	122,501
Net income	-742	4	-4,561	14,732	-735
Total assets	276,875	300,6545	322,250	295,419	283,825
Return on average assets (%)	-0.270	0.001	-1.438	4.991	-0.254

Sources: COA (2019a, 2020a, 2021a, 2022a, 2023a) and BSP (2023a, 2023b).

rates have been introduced as part of restructuring agreements covering past-due loans of debtor water districts.

As of 2022, Lwua extended loans of nearly US$128 million (see Table 10.1). In the four preceding years, the Lwua loan quantities fluctuated between US$122 million and nearly US$137 million. Lwua income fluctuated between losses of over US$4 million and earnings of nearly US$15 million. Lwua incurs losses related to financial difficulties experienced by water districts, which could involve defaults on interest and principal payments of loans and to deteriorating economic conditions (Commission on Audit [COA] 2023b). Government backing has helped sustain Lwua as a public financial institution, without which financial losses could lead to the collapse of Lwua.

Between 2018 and 2022, the return on average assets (ROAA) of Lwua fluctuated from negative 1.438 per cent to positive 4.990 per cent for a five-year average of 0.251 per cent. The negative 1.438 ROAA reported in 2019 could be mainly attributed to the forgiveness of interest payments by water districts with past-due loans. By 2022, Lwua recorded a negative 0.27 per cent ROAA mainly because of reported losses for the year. Nonetheless, Lwua also reported a decrease in total assets, which had been affected by the impairment of financial assets brought about by financial difficulties experienced by debtor water districts, including the probable bankruptcy of the debtor water districts.

In view of the broad mandate given to Lwua under Presidential Decree 198 (Presidency of the Philippines 1973a), it has had to contend with the burgeoning financing requirements of water districts. If the 2022 level of loans and receivables of Lwua is maintained throughout the 2023–28 period of the current Philippine Development Plan, Lwua may only be able to provide, on average, 0.07 per cent of the investment requirements for water supply development. A significant increase in the financial support to Lwua can improve its contribution to the investment programme for the WSS sector and can strengthen debtor water districts or even pull some of them out of bankruptcy.

The Development Bank of the Philippines

The DBP was founded in 1958 as a 100 per cent publicly owned bank. Based on the ranking made by the Philippines Central Bank (BSP 2023b), the DBP

Table 10.2 DBP basic financial information, US$1000

Basic Information	*2022*	*2021*	*2020*	*2019*	*2018*
Loans & receivables	400,908	360,261	367,302	355,652	234,283
Net income	69,386	83,157	73,749	110,439	108,540
Total assets	18,643,285	22,879,082	21,700,495	15,001,644	12,699,871
Return on average assets (%)	0.382	0.460	0.448	0.797	0.855
Number of employees	3,433	3,600	3,594	3,454	3,251

Sources: COA (2019b, 2020b, 2021b, 2022b, 2023b) and BSP (2023a, 2023b).

is the country's eighth-largest bank overall and second-largest public bank in the Philippines.

According to the COA, in 2022, the DBP had total assets of nearly $19 billion, an almost 47 per cent increase over the previous five years, and provided more than $400 million in loans, a 71 per cent increase in lending over five years (see Table 10.2). However, net income in 2022 declined to $69 million or a –36.07 per cent drop in net earnings over the same five-year period. ROAA has ranged from 0.38 to 0.8 per cent, which is in line with most public development banks (Marois 2021). The lower earnings have been reflected in fewer employees, which decreased to 3433 in 2022 from a high of 3600 in 2021. Fitch Ratings (2023a) has assigned the DBP a stable outlook and a "BBB" credit rating. This is equal to the BBB rating assigned to the Philippine government given the high likelihood of state backing should the DBP require financial support.

The history of the DBP links back to the now-defunct National Loan and Investment Board, which was created in 1935 to invest government funds and to make these funds available for loans (National Assembly of the Philippines 1939). This public financial institution then evolved into the Agricultural and Industrial Bank (National Assembly of the Philippines 1939) whose core purpose was to grant agricultural, industrial and real estate loans. It evolved again into the Rehabilitation Finance Corporation (Republic of the Philippines 1946) to support postwar reconstruction through loans to subnational governing authorities. In 1958, the government converted the Rehabilitation Finance Corporation into the DBP (Republic of the Philippines 1958). This final evolution marked a break from rehabilitation and reconstruction financing to the provisioning of intermediate and long-term public credit to provincial, city and municipal governments for infrastructure, including waterworks. The Philippines was not alone in the shift of public development banks from postwar reconstruction efforts to long-term support for infrastructure. For example, the German public development bank, the Kreditanstalt fuer Wiederaufbau, underwent a similar postwar transformation (Marois 2024).

With the initial capital stock of US$250 million fully subscribed by the Philippine government, DBP expanded its operations and established

branches throughout the country. With its mandate to issue bonds, debentures, securities, collaterals and other obligations, DBP tapped foreign and local sources of funds to complement its capital resources and directly obtained credit from international financial institutions (Development Bank of the Philippines 2022b). In 1963, the capitalization of DBP was increased to about $513 million, and its borrowing capacity raised to ten times its paid-in capital and surplus (Ibid.). By 1966, DBP became an investment bank aimed at establishing a broad and prosperous securities market.

The 1970 Philippines peso devaluation forced the DBP to cut domestic lending and suspend most of its new guarantees. During the oil and debt crises across the Global South in the late 1970s and early 1980s, agriculture remained a top priority with lending directed towards food production, and industrial lending to industries that utilized agricultural raw materials and products. Although Presidential Decree 195 (Presidency of the Philippines 1973a) increased the capitalization of DBP to PhP 3 billion, this amount came to only US$444 million, which was less than its pre-devaluation capitalization. Nonetheless, the DBP took on a role of crisis management by offering refinancing for shipping, mining, cement, hotels and telecommunications while financing new energy and transport services (Development Bank of the Philippines 2022b). This counter-cyclical role of public banks, or lending during moments of economic crisis, is widely regarded as supportive of establishing economic stability amidst financial instability (Marois 2021; Griffith-Jones & Ocampo 2018).

Public banks absorbing the costs of economic crises is not without complications or contradictions (Marois & Güngen 2016). By 1986, Executive Order No. 816 (Presidency of the Philippines 1982) revised the DBP charter and ordered a clean-up of its financial operations, a staff reorganization and an infusion of an initial operating budget. This restored DBP's financial viability and allowed it to resume lending operations. With the transfer of non-performing assets and liabilities to the Philippine government, DBP was able to revise its credit processes and implement a training programme on its new lending thrusts.

As DBP resumed full development banking operations, it got accredited as a participating financial institution in the Industrial Guarantee and Loan Fund, which was established through an agreement between the US and Philippine governments with fund assistance from the International Bank for Reconstruction and Development and from the ADB. As a participating financial institution, DBP is able to access credit for relending to eligible borrowers. By 1995, the DBP attained universal banking status, meaning it could perform both retail/commercial operations and development bank lending. In 1997, its 50th year, DBP returned a dividend of $34 million to the national government. The following year, the government again increased DBP-authorized capital stock to $856 million (Republic of the Philippines 1998).

Not until 1999 did the DBP jump into financing water infrastructure. The DBP did so by launching the LGU–Urban Water and Sanitation Project

to strengthen service provisioning among provincial water utilities and to improve and sustain the delivery of water services to urban populations. The project included bulk water supply, treatment and transmission; water district rehabilitation and expansion; sanitation and drainage; as well as technical assistance (Lucero 2008). Over the next six years or so, DBP approved 12 projects under the LGU–Urban Water and Sanitation Project with a total commitment of US$14 million.

The DBP intervention into water brought financial benefits to local water operators, albeit not without contestation. For example, in 2006, the DBP refinanced a US$28 million Lwua loan to the Metro Cebu Water District. The deal enabled Lwua to recycle the repayments on the loan to the Metro Cebu Water District to then on-lend to smaller water districts. The Metro Cebu Water District also used the savings from the cheaper DBP loan to improve water service delivery. The Metro Cebu Water District Employees Union supported the refinancing. However, water districts affiliated with the Alliance of Government Workers in the Water Sector (Agwwas) expressed concern that the DBP project favoured larger water districts, that is, those with at least 30,000 service connections (Department of Budget and Management 2011). Smaller Agwwas-affiliated water districts could only access Lwua financing, which charged higher interest rates than the DBP. Agwwas argued that the DBP should extend its more favourable lending programme to include all water districts or, as noted above, that Lwua offer similarly favourable terms.

In a parallel development in the 1990s, the Philippines institutionalized private sector participation in infrastructure and development projects (Asian Development Bank 2020). The government enacted such laws as the Build-Operate-Transfer (BOT) Law (Republic of the Philippines 1990) and the Implementing Rules and Regulations of the BOT Law (Republic of the Philippines 2012, 2023). These laws serve as the legal and regulatory framework for governing PPPs in the Philippines. The 2011–16 Philippine Development Plan (Neda 2011) highlighted infrastructure development as a top priority, with PPPs as a major conduit for generating investments. For its part, DBP was able to raise US$300 million in global dollar notes as its contribution to the US$4.736 billion in PPP projects. This includes a development project in Philippines' premiere tourist destination, Boracay Island, that involved the expansion of local water infrastructure (see Manila Water Philippine Ventures 2015).

In 2016, the government tried to mandate a merger of the DBP with the LBP, making the future of the DBP uncertain. Nonetheless, the DBP continued to position itself as the country's main infrastructure bank capable of advancing sustainable and inclusive development. Moreover, DBP continued to pursue initiatives like DBP Forest, which aims to rehabilitate watersheds as critical sources of water supply, and DBP Water. DBP Water aims to provide local governments financing for developing municipal and bulk water supply; water transmission and/or distribution systems; water

treatment facilities; operational infrastructure; and climate change adaptation technologies (Development Bank of the Philippines 2022b, 2022c). No immediate action was taken on the proposed merger.

Even with the onset of the COVID-19 pandemic, the DBP (2022a) reported that the DBP Water Program increased water supply capacity by 103 million cubic metres per day in 2020, and by another 104 cubic metres per day in 2021. Such an increase in water supply capacity was accompanied by the installation of more than 2000 kilometres of pipelines in 2020 and an additional 12,000 kilometres in 2021. During the height of the pandemic, the DBP Water Program financed the construction of 114 groundwater source facilities, with an aggregate capacity of 335,025 cubic metres per day, and 29 surface water sources facilities, with an aggregate capacity of 200,033 cubic metres per day.

In 2024, the government decided not to implement the merger mandate with the LBP. The DBP continues to finance capital investments, which include working capital requirements, waivers on interest on loans during construction, refinancing of existing loans and consultancy and project development costs (Development Bank of the Philippines 2022a). These initiatives, carried out within the Assistance for Economic and Social Development (Asenso) for LGUs Financing Program, have financed LGU projects that accelerate infrastructure and socio-economic development (Development Bank of the Philippines 2022b). In addition to meeting the objectives of the Philippine Development Plan and targets of the SDGs, the Asenso for LGU Financing Program has operationalized the LGU's mandate to provide water supply systems and facilities provided by earlier legislation (Republic of the Philippines 1991). In effect, this programme allows the DBP to continue to provide water infrastructure financing as a matter of public policy.

The DBP 2022 Annual Report shows that it has used the funds provided by Republic Act 11494 (Republic of the Philippines 2020) for COVID-19 response and recovery interventions to accelerate the recovery of the Philippine economy and improve the country's water supply situation. However, if DBP continues to provide loans at a level equivalent to its 2022 lending performance for the period 2023–28, its resources can only address between 0.16 and 0.28 per cent of the investment requirements for the WSS sector. For DBP to significantly contribute to the investment programme for SDG 6, it should generate additional financial resources for relending in its Asenso Program and the DBP Water and DBP Forest programmes.

The Land Bank of the Philippines

The LBP was founded in 1963 via the Philippine Agricultural Land Reform Code (Republic of the Philippines 1963) with the purpose of financing the acquisition of agricultural estates for resale and distribution to small landholders. The LBP was not, however, mandated to provide credit to cooperatives and to smallholder farmers. At that time, the colonial legacy of land ownership generated social tension and violent conflict, resulting in the

underperformance of the rural economy. Redistributive land reforms became the main strategy of government to address colonial distortions (Ballesteros et al. 2017), with the LBP being given the task of financing agrarian reform. Initially, the LBP was authorized to be capitalized at US$385 million, but it received an initial infusion of $513 million. The funds were used to purchase private agricultural lands devoted to rice and corn under share-crop or lease-tenancy arrangements for transfer to tenant-farmers as part of wider agrarian reforms (Presidency of the Philippines 1972).

The first decades of LBP operations were difficult. Citing inadequacies in capitalization and in the organizational structure of the LBP under its original mandate, the government transformed the LBP into a government corporation with the mandate to provide timely and adequate financial support for the advancement of agrarian reform (Presidency of the Philippines 1973a). As a 100 per cent state-owned financial institution, the government increased its authorized capital to US$444 million and restructured the LBP into a universal bank (a bank which combines development with commercial operations, such as deposit taking). LBP supports rural development, which includes subsidizing agrarian land transfers; lending to small farmers, fishers and cooperatives to facilitate production; marketing of crops and acquisition of essential commodities; and financing industrial and housing projects. These supports were in step with other Global South governments that created or nationalized banks within their borders, tasking these public universal banks to support national development ambitions, often focused on agriculture (for example, in Turkey, India, Brazil and China) (Marois & Güngen 2016). The political intention was to adopt an integrated approach to the provision of financial assistance to farmers.

To solidify its position as the agricultural bank of the country, the LBP absorbed the Agricultural Credit Administration, its assets and its functions of supporting small farmers (Presidency of the Philippines 1982). In the 1990s, the LBP then assumed the government responsibility of determining land values. The Republic Act 10374 (see Republic of the Philippines 2012) extended the corporate life of LBP for a period of 50 years, renewable for another 50 years. The Act established the LBP as an official government depository with the mandate to issue Agrarian Reform Bonds to help fund land transfer payments. In 1998, the authorized capital of LBP was increased to more than US$611 million; by 2016, authorized capital reached US$7.8 billion in order to support the Philippines' sustainable and inclusive growth agenda.

As a state-owned institution, the COA reported that, as of 2022, the LBP had total assets of US$56 billion, a 57.7 per cent increase from 2018 (see Table 10.3). The LBP is now the second-largest bank overall and the largest public bank in the Philippines (BSP 2023b). Loans were more than US$19 billion in 2022, which grew significantly since 2018, by just under 30 per cent. Correspondingly, LBP generated a net income of more than US$690 million in 2022. LBP ROAA was 1.488 per cent in 2022, which is comparable to many private commercial banks. As LBP grows in size, so too

Table 10.3 LBP basic financial information, US$1000

Basic information	*2022*	*2021*	*2020*	*2019*	*2018*
Loans & receivables	19,472,371	17,005,259	17,040,563	16,288,388	15,029,036
Net income	690,723	491,526	474,671	368,279	58,062
Total assets	56,131,859	51,085,197	49,219,651	40,100,515	35,602,393
Return on average assets (%)	1.488	1.117	1.140	0.973	0.852
Number of employees	12,662	9,790	9,680	9,298	8,599

Sources: COA (2019c, 2020c, 2021c, 2022c, 2023c) and BSP (2023a).

does its employee numbers, which increased from 8599 in 2018 to 12,662 in 2022. Fitch Ratings (2023b) rated the LBP as stable in 2023 from negative, with a "BBB" credit rating, matching the credit ratings of the government of the Philippines and the DBP.

In the context of COVID-19, the Republic Act 11494 (Republic of the Philippines 2020) authorized LBP to allocate US$3 billion to subsidize interest payments for new and existing loans of LGUs affected by the pandemic. Through its 2020 "Rise Up LGUs" programme, LBP has supported LGU responses to COVID-19 (LandBank 2020). Moreover, the LBP supported other government financial institutions and banks through co-lending arrangements, and it financially supported domestic industries and businesses impacted by the pandemic.

In terms of water lending in the COVID-19 era, the LBP "Water Program for Everyone" financed water and sanitation projects, including water system development and distribution, expansion and rehabilitation. In 2021, outstanding loans for water projects reached more than US$3 billion, representing 17.9 per cent of loans to all sectors (LandBank 2022). The Rise Up LGUs LBP programme also supported local government efforts through financing for priority services, including water system development, distributions and expansion (Dominguez 2022). By the end of 2021, the LBP had provided loans to 34 water districts totalling US$75 million for water system development, distribution and expansion under the "Water Program for Everyone" (LandBank 2022). For its part, LBP (LandBank 2020) envisions becoming the leading universal bank that promotes inclusive growth through innovative financial products and services, accessible and best technology solutions for timely and responsive financial services and support to LGUs, and the promotion of sustainable development anchored on good governance.

Key informants from the case study sites disclosed that the loans granted by the LBP have about the same terms as those of the DBP. The LBP, however, has attained a "proximity and accessibility advantage" considering that

the LBP loan officer has been based in Borongan City while the DBP Lending Center has been based in Tacloban City. Furthermore, LBP personnel from the Borongan branch have visited the case study sites and conducted orientation seminars regarding the lending programmes.

The amount of loans provided by the LBP in 2022, if sustained for the period 2023 to 2028, can contribute between 9.35 and 13.72 per cent of the public investment requirements for the WSS sector. Allocating more funds for the Rise Up LGUs LBP programme can significantly boost the fulfilment of SDG 6, as well as the attainment of the objectives for the WSS sector enunciated in the Philippine Development Plan for 2023 to 2028.

Promising lessons: Borongan City, Jipapad and Arteche

The Local Government Code (Republic of the Philippines 1991) has vested LGUs with the responsibility of ensuring universal access to safe, affordable and sustainable water. LGUs therefore must confront the major stumbling blocks of inadequate financing, and of potentially low technical capability among their respective personnel. The case studies from Borongan City, Jipapad and Arteche in the province of Eastern Samar provide insights into some of the opportunities and challenges that water districts and LGUs encounter when trying to access public financing for public local water services. Most of the information narrated in the following sections have been gathered during the meetings with respondents listed in the appendices.

Improving water services in Borongan City

The Borongan City case study portrays an example of an initially fragmented partnership between a water district, an LGU and a public financial institution (Lwua). Over time, the two water operators came to mutually recognize the need for supportive public financing of public water after realizing that public finance is cheaper, more accessible and involves fewer risks than private financing. Nevertheless, there is room for improvement in how Lwua operates.

The City of Borongan, the capital of the Province of Eastern Samar, has a history of inadequate water supply for domestic use from the Borongan water district. This has generated a growing number of complaints from water consumers, who could only access limited quantities via their service connections, and from local commercial and business establishments, which could not get connections from the water district. Confronted with this situation, the Borongan City LGU established and operated its own water supply facilities to serve areas that were not being covered by the Borongan water district. By early 2021, Borongan City LGU formally offered to sell water in bulk to the water district, but the management of the water district declined.

Even with the establishment of its own water supply facilities, the Borongan City LGU was still beleaguered by citizen complaints over inadequate water

supply. In mid-2021, the National Irrigation Administration turned over six communal irrigation systems to the Borongan City LGU. Despite the heavy costs and responsibility involved with managing the irrigation systems, they were seen as key infrastructure to support the "Dukwag Agrikultura" programme, a developmental initiative of the Borongan City LGU that aims to achieve water, food and energy security by producing water for domestic consumption and to generate power, in addition to irrigation. An initial assessment conducted by LGU personnel revealed that two of the six irrigation systems were producing more water than needed by the local agricultural sector. The LGU began to explore sources of public financing to support the project.

During a multi-stakeholder forum held in November 2021 on water issues affecting the city, a representative from the Borongan water district revealed that they had not increased the number of service connections, which has been pegged at about 2500 for the entire service area. The representative further disclosed that private investors had talked to the water district management about a possible PPP, even though it had fewer than 3000 service connections and was therefore classified as non-creditworthy (Lwua 2013). Reportedly, some members of the water district's board of directors opposed the idea, but neither did the private investors further pursue the initiative.

Several months later in June 2022, representatives of the LBP branch in Borongan City and the LBP "Rise Up LGUs" lending programme gave city officials an orientation on options for financing. Meanwhile, the city's mayor was scouting for international partners to provide financing for the water project. In late 2022, the city's mayor travelled to Sweden to meet with business representatives to explore the possibilities of forming a partnership in the development of the irrigation facilities as sources of water supply.

By early 2023, the city's mayor appointed new members of the board of directors of the water district, with whom the LGU held a series of meetings to discuss ways to strengthen service delivery. The new management reported that the deterioration of the water district's performance was aggravated by a rate hike related to the terms of the restructuring of a 2018 loan from Lwua, the costs of which were passed on to users. Managers from the LGU and water district speculate that when negotiating the new terms, the Lwua did not provide adequate technical support or conduct a due diligence check on the capacity of users in the water district to pay the proposed higher water rates. The water district's financial situation was made worse by the fact that some of the existing consumers were no longer paying their water bills because they could not get adequate quantities of water.

Moreover, controversies emerged over the lack of third-party oversight in contracting processes and the costs of drilling wells. Together with the restructured loan, Lwua provided a grant of almost US$450,000 for system improvement. Of that amount, around US$100,000 was paid to test-drill deep wells. Lwua also prepared the detailed engineering design and the documents for the bidding process. The water district awarded a private contractor the

contract, who drilled the wells. The contractor bills the water district, which conducts the inspection of the actual accomplishment as basis for payment. The new management of the water district has expressed reservations about whether drilling wells is the most cost-viable option considering the availability of abundant surface water.

An in-house assessment by the Borongan water district also pointed out that the main source of revenue losses come from non-revenue water. The assessment estimated that about 40–50 per cent of total water produced is lost due to leaks, an amount that represents US$89,000 per month in lost revenue. The new management negotiated with the Borongan City government to share the cost of replacing the old asbestos pipes to improve operational efficiency and to minimize threats to public health.

As of the time of writing, the Borongan City LGU and the water district management were still looking into possible interventions to improve water service provision. Both entities have also explored the possibility of collaborating with the Eastern Samar State University Borongan Campus to conduct feasibility studies, which will eventually be required when the Borongan City LGU and/or the Borongan water district files the application for financing.

Rehabilitating the Jipapad water system

The Jipapad experience shows an example wherein a public bank and an LGU can collaborate to deliver public financing for a stable and favourable delivery of public services. The Jipapad LGU sought to enhance the operations of its water system using financing provided by the LBP under the "Rise Up LGUs" lending programme.

Jipapad, a landlocked municipality in the northern tip of the province of Eastern Samar, has a population of 8439 inhabitants. Heavy rainfall and mountainous terrain have contributed to a high level of flooding risk for the residents. In 2019, the newly elected mayor shared his developmental aspirations of transforming the nearby Sanizi Falls into a source of domestic water supply, a source of hydro-electric power, and a tourism destination, in addition to reducing the risk of flooding. Some municipal officials reckoned that managing the water at the source could somehow divert water from the town and eventually minimize the cost of flood damage, which has depleted the very limited LGU financial resources.

Some 10 years ago, the Jipapad LGU established and operated a water system for domestic use. However, in view of the distance of the water supply source to the town, the amount allocated by the LGU could not sufficiently cover the cost of the system. In 2017, the LGU applied for inclusion in the Assistance to Disadvantaged Municipalities under the Salintubig Program (Department of the Interior and Local Government 2017), which approved US$477,000 for the project. The amount covered the cost of nine community water systems with water treatment facilities, transmission and distribution lines, storage tank and service connections with water meters. However,

the systems reached only 11 of the 13 *barangays* of the town, albeit not all households in the *barangays* were provided with service connections.

The LBP "Rise Up LGUs" lending programme offered a new opportunity to access financing for water systems development. Even though the loan from LBP could barely cover the cost of laying the main water transmission line and the distribution pipes for the households in the various settlements, the Jipapad LGU pursued its application for the financing of a water system that was also hoped to provide water not only to Jipapad but also to downstream municipalities, many of which have been experiencing inadequate water supply.

In March 2023, the LBP extended a US$3.6 million loan to the Jipapad LGU. A total of $891,000 was allocated for the rehabilitation of the existing water system, but most of the money has been assigned to the construction of an evacuation centre, the acquisition of equipment for use during flooding events and the building of a multipurpose centre. All of these projects have been deemed urgent in view of the disastrous consequences of the recurring floods.

Key informants reported that they find the terms of the 15-year loan with LBP favourable. In the first three years, the municipality only had to pay the interest (thus freeing up liquid capital for other development projects). From the 4th to the 15th year, the municipality will pay the principal amount plus 5.5 per cent interest. By this time, the water system is expected to generate revenues from projected water sales.

Moreover, the Jipapad LGU has formalized an agreement with Eastern Samar State University for the conduct of onsite assessments needed for the implementation of the water system project, as well as studies for the establishment of a micro-hydro power plant and for the preparation of a tourism development plan with the Sanizi Falls as the centrepiece tourism destination. These interventions, if realized, are expected to contribute to the overall revenue stream, which can lighten the loan repayment burden of the LGU.

Improving management of the Arteche water system

The Arteche experience shows the interactive dimension of public financing and of the need for local technical and organizational capacities for the establishment and operational viability of water systems. In this case, the problem is not the lack of financing, but rather the water operator's lack of capacity to execute the project.

Arteche is a coastal town of Eastern Samar with a population of 16,360. Much of the town's territory is classified as a forest watershed area. Most residents obtain their water supply from the Bulnod River and the Katingulan Spring, and from shallow tube wells.

In 2016, Arteche experienced a severe drought, which, according to local key informants, highlighted the deficiency of local water service delivery. That same year, the Coca-Cola Company started the construction of a water storage facility in *barangay* Casidman, but for some reason, the project

was abandoned. The lack of clean water further exacerbated the increasing number of children affected by diarrhoea and schistosomiasis. The inadequacy of medical facilities contributed to the dire situation experienced by local residents. To address these problems, the LGU proposed the establishment of a water system with assistance from the Payapa at Masaganang Pamayanan (Pamana) programme of the national government. The water system project was approved with an allocation of US$54,000 (Department of the Interior and Local Government 2017).

Two years after the installation of the water system, the Arteche LGU aspired to enhance the municipal waterworks. Municipal Ordinance No. 18-04, authorized the LGU to borrow US$1.7 million. A feasibility study, a requirement for the loan application, was commissioned to assess the sustainability of the identified water source. However, the LGU lacked expertise in making the assessment and in preparing the feasibility study, so the LGU hired expensive external experts to conduct the study and to prepare the detailed engineering design, thus draining the LGU of financial resources. The DBP found the project proposal compliant with the application requirements and approved the loan.

Project implementation faced several challenges during the COVID-19 pandemic, particularly in relation to the mandated restrictions on various economic activities. The situation worsened during the recurring floods caused by typhoons and heavy rains, further exhausting the financial resources of the LGU. Faced with these disasters, the LGU has also not been able to focus on setting up an organizational structure to manage the water project.

As of 2023, the incipient LGU-operated waterworks of Arteche have not yet been fully operational due to the lack of personnel. Only one person had been hired to oversee the implementation of the project and the management of the system. The LGU had not yet created a specialized home unit needed to operationalize the establishment of the water system. No new positions were identified for hiring, and no budgetary allotment was proposed to execute the project. Subsequently, the staffing complement as recommended by the Department of Budget and Management (DBM) (2011) has not been implemented.

In the course of conducting the case study, the Arteche LGU initiated a collaborative endeavour with the Eastern Samar State University, which has responded positively by providing research and community extension support on water system establishment and on organizational development. Faculty members have expressed interest in working with the LGU as part of their respective official workload. University management has favourably endorsed the collaboration especially that an improved water system would also benefit the Arteche Campus of the university.

The future of public banks–public water in the Philippines

The Philippine Development Plan for 2023–28 recognizes that the effective provisioning of water service continues to suffer from poor planning and

financing of infrastructure (Neda 2022). Nonetheless, public bank–public water collaborations can play in important role in addressing these challenges, provided that some key problems are addressed, specifically LGU's lack of technical capacity and restrictions on financing determined by public policy.

First, the technical capacity of LGUs is uneven. The decision to invest in raising capacity requires the political will of local leaders. In the case of Borongan City, for example, the complaints regarding poor access to safe drinking water for domestic and commercial uses inspired LGU leaders to mobilize local resources to establish its own source of water supply, to organize from among its personnel a technical working group to formulate a plan to provide adequate and accessible water supplies to residents and local businesses and to conduct capacity-building sessions for technical working group members. Financially strapped LGUs like Jipapad and Arteche, on the other hand, have not allocated sufficient funds needed to build the capacity of their respective personnel to increase the knowledge and expertise necessary to implement and manage local water systems. This situation is somewhat surprising given the fact that the mayors in both cities are medical professionals who have raised concerns about the negative effects of the lack of safe water supply on public health and the municipal budget.

Raising capacity will require the implementation of sound management practices in water service delivery through the application of appropriate technologies. Such practices could allow the LGUs to raise funds for the improvement of service quality and for the expansion of coverage. Active involvement of local public universities could provide opportunities to financially strapped LGUs to gain technical competence for the preparation of studies and assessments needed in loan and/or grant applications.

Second, to attain universal access, the national government needs to create an enabling environment that allows for the adequate financing of water operators. The national government should increase the financing options available for LGUs that serve low-income and remote areas where cost-recovery mechanisms would make water inaccessible. Operationally, this could mean financing LGUs with existing plans to provide water to underserved rural communities, as well as urban low-income and peri-urban areas.

In 2017, access to public financing was facilitated by Joint Memorandum Circular No. 2017-1 (Department of the Interior and Local Government & Department of Budget and Management 2017), which identified the construction or rehabilitation of local government-owned potable water supply systems as "Allowable Development Projects Chargeable Against the 20 per cent Development Fund." The legislation stipulated that amortization of loans for development projects is subject to a 20 per cent debt service cap prescribed under RA No. 7160 (Republic of the Philippines 1991), which serves as a control against overspending. This limitation, however, has adversely affected the financing of municipal water systems and the attainment of full service coverage in the LGUs. The formulation of a definancialization policy (see Marois 2021), which could allow public banks to provide financing to water

projects based on a set of financial and economic viability criteria and ecological sustainability criteria (and not based on the amount allocated by the national government as LGU share of national taxes), could be embedded in the rules governing the lending programmes of the DBP and the LBP.

On a more positive note, the Joint Memorandum Circular included environmental management projects that promote water quality, as well as the productivity of freshwater habitats and forest lands for conservation and for possible wastewater reuse as allowable projects. It is important to underscore the fact that public financing of public water does not stop with the establishment of networked infrastructure, but it must also include projects that ensure the sustainability of critical sources of water supply.

Conclusion

During the sixth edition of the Philippines Water Conference and Exposition, President Marcos admitted that the country had been experiencing a water crisis (Bajo and GMA Integrated News 2023), but he did not even mention public banks despite the important role they play in financing public water. Worldwide, public banks have shown that they can mitigate and reverse tendencies towards short-term, high-return financing because they do not have to operate according to a profit-maximization motive (Marois 2021; Fonseca et al. 2021; McDonald et al. 2021; Marois & McDonald 2022). They can undertake coordinated lending to reduce the cost of borrowing and generate cost savings for public water providers. Nonetheless, public banks only do so as a matter of explicit mandate and policy support, given the prevailing political will.

At times, there are attempts to facilitate the incursion of private investors and to turn public water into yet another bankable asset class. The case studies of the three LGUs have demonstrated that local authorities can resist this commercialization agenda based on the principles of sustainability and social equity. LGUs perceive public lending institutions to be more friendly in terms of providing the financing needed by public water utilities. But in order to make it easier to access public funds, the national government must play its part. The government should allow public banks to grant loans to LGUs based on the financing requirements of a project as determined by the feasibility study prepared for the purpose. If the total amount of financing needed goes beyond the mandated debt service cap, that amount could be covered using other forms of sovereign guarantee from the national government.

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Appendix A: Position/designation and institutional affiliation of key informants

Position/Designation	*Institutional Affiliation*	*Address*
President	AGWWAS	Cebu City
Deputy Secretary-General	AGWWAS	Cebu City
Municipal Mayor	Arteche Municipal LGU	Arteche, Eastern Samar
Local Disaster Risk Reduction and Management Officer	Arteche Municipal LGU	Arteche, Eastern Samar
Municipal Engineer	Arteche Municipal LGU	Arteche, Eastern Samar
City Planning and Development Officer	Borongan City LGU	Borongan City, Eastern Samar
City Cooperatives Development Officer	Borongan City LGU	Borongan City, Eastern Samar
Human Resources Management and Development Officer	Borongan City LGU	Borongan City, Eastern Samar
Executive Assistant Office	Borongan City LGU	Borongan City, Eastern Samar
Project Management Officer	Borongan City LGU	Borongan City, Eastern Samar
Senior Agriculturist	Borongan City LGU	Borongan City, Eastern Samar
City Agricultural Officer	Borongan City LGU	Borongan City, Eastern Samar
Senior Cooperative Development Specialist	Borongan City LGU	Borongan City, Eastern Samar
Assistant City Engineer	Borongan City LGU	Borongan City, Eastern Samar
Engineer 1	Borongan City LGU	Borongan City, Eastern Samar
City Environment and Natural Resources Office Administrative Aid	Borongan City LGU	Borongan City, Eastern Samar
Forester 1	Borongan City LGU	Borongan City, Eastern Samar
Environmental Management Specialist	Borongan City LGU	Borongan City, Eastern Samar
City Tourism Office Administrative Aid	Borongan City LGU	Borongan City, Eastern Samar
Department of Social Welfare and Development Office Officer-in-Charge	Jipapad Municipal LGU	Jipapad, Eastern Samar
Head, Training and Education Services Office	Eastern Samar State University	Borongan City, Eastern Samar

Position/Designation	*Institutional Affiliation*	*Address*
Head, Disaster Risk Reduction and Management Office	Eastern Samar State University	Borongan City, Eastern Samar
University President	Eastern Samar State University	Borongan City, Eastern Samar
Head for Training Services, Training and Education Services Office	Eastern Samar State University	Borongan City, Eastern Samar
Technical Expert, Information Technology Support Office	Eastern Samar State University	Borongan City, Eastern Samar
Campus Dean	Eastern Samar State University – Arteche Campus	Arteche, Eastern Samar
Local Disaster Risk Reduction and Management Officer	Jipapad Municipal LGU	Jipapad, Eastern Samar
Municipal Mayor	Jipapad Municipal LGU	Jipapad, Eastern Samar
President	Surok Irrigation Association	Borongan City, Eastern Samar
LBP Department Manager	Land Bank of the Philippines Borongan City Branch	Borongan City, Eastern Samar
In-Charge, LBP Rise-Up LGUs Program	Land Bank of the Philippines Borongan City Branch	Borongan City, Eastern Samar
DBP Executive Vice President	Development Bank of the Philippines Catbalogan Lending Center	Tacloban City
DBP Administrative Officer	Development Bank of the Philippines Catbalogan Lending Center	Tacloban City
General Manager	Borongan Water District	Borongan City, Eastern Samar
Head Administrative Section	Borongan Water District	Borongan City, Eastern Samar
Senior Engineer	Borongan Water District	Borongan City, Eastern Samar
Corporate Budget Analyst	Borongan Water District	Borongan City, Eastern Samar

Appendix B: Position/designation and institutional affiliation of participants of focus group discussions and stakeholder workshops

Position/Designation	*Institutional Affiliation*	*Address*
National Auditor	AGWWAS	Baguio City
Vice President for Southern Luzon	AGWWAS	Legazpi City
Vice President for Eastern Visayas	AGWWAS	Baybay, City
Vice President for Southern Mindanao	AGWWAS	General Santos City
Vice President for North Luzon	AGWWAS	Baguio City
Vice President for Central Visayas	AGWWAS	Cebu City
Chairperson, Committee on Youth	AGWWAS	Koronadal, South Cotabato
Chairperson, Committee on Welfare and Benefits	AGWWAS	Toledo City, Cebu
Chairperson, Committee on Women	AGWWAS	Legaspi City
Deputy Secretary-General	AGWWAS	Cebu City
Chairperson, Committee on Local and International Networking	AGWWAS	Calumpit, Bulacan
National Treasurer	AGWWAS	Cebu City
Chairperson, Committee on Environment & Sustainability	AGWWAS	Baguio City
Municipal Mayor	Arteche Municipal LGU	Arteche, Eastern Samar
Local Disaster Risk Reduction and Management Officer	Arteche Municipal LGU	Arteche, Eastern Samar
5 Municipal Staff Members	Arteche Municipal LGU	Arteche, Eastern Samar
5 Staff Members of the Office of the City Mayor	Borongan City LGU	Borongan City, Eastern Samar
City Cooperatives Development Officer	Borongan City LGU	Borongan City, Eastern Samar
2 Staff Members of the Office of the City Vice Mayor	Borongan City LGU	Borongan City, Eastern Samar
Project Management Officer	Borongan City LGU	Borongan City, Eastern Samar
8 Staff Members of the City Agriculture Office	Borongan City LGU	Borongan City, Eastern Samar
Senior Cooperative Development Specialist	City Coop Borongan City LGU	Borongan City, Eastern Samar
Assistant City Engineer	City Engineering Office Borongan City LGU	Borongan City, Eastern Samar
Engineer 1	City Engineering Office Borongan City LGU	Borongan City, Eastern Samar
Administrative Aid	City Environment and Natural Resources Office Borongan City LGU	Borongan City, Eastern Samar

Position/Designation	*Institutional Affiliation*	*Address*
Forester 1	City Environment and Natural Resources Office Borongan City LGU	Borongan City, Eastern Samar
Environmental Management Specialist	City Environment and Natural Resources Office Borongan City LGU	Borongan City, Eastern Samar
Administrative Aide	City Tourism Office Borongan City LGU	Borongan City, Eastern Samar
Officer-in-Charge	Department of Social Welfare and Development Office Jipapad Municipal LGU	Jipapad, Eastern Samar
6 Faculty Members	Eastern Samar State University	Borongan City, Eastern Samar
Head, Training and Education Services Office	Eastern Samar State University	Borongan City, Eastern Samar
Head, Disaster Risk Reduction and Management Office	Eastern Samar State University	Borongan City, Eastern Samar
University President	Eastern Samar State University	Borongan City, Eastern Samar
Head for Training Services, Training and Education Services Office	Eastern Samar State University	Borongan City, Eastern Samar
Technical Expert, Information Technology Support Office	Eastern Samar State University	Borongan City, Eastern Samar
4 Faculty Members	Eastern Samar State University – Arteche Campus	Arteche, Eastern Samar
Campus Dean	Eastern Samar State University – Arteche Campus	Arteche, Eastern Samar
3 Scientific Advisory Team Volunteers	Environmental Legal Assistance Center	Palo, Leyte
Local Disaster Risk Reduction and Management Officer	Jipapad Municipal LGU	Jipapad, Eastern Samar
Municipal Mayor	Jipapad Municipal LGU	Jipapad, Eastern Samar
3 Committee Chairpersons	Metro Cebu WD Employees Union	Cebu City
President	Surok Irrigation Association	Borongan City, Eastern Samar
General Manager	Borongan Water District	Borongan City, Eastern Samar
Head Administrative Section	Borongan Water District	Borongan City, Eastern Samar
Senior Engineer	Borongan Water District	Borongan City, Eastern Samar
Corporate Budget Analyst	Borongan Water District	Borongan City, Eastern Samar

Index

Note: Page numbers in *italics* indicate figures and in **bold** indicate tables on the corresponding pages.