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THE ROLE OF NATIONAL PUBLIC DEVELOPMENT BANKS IN FINANCING THE WATER AND SANITATION SDG 6, THE WATER RELATED GOALS OF THE PARIS AGREEMENT AND BIODIVERSITY PROTECTION

REPORT WITHOUT ANNEXES

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LIST OF ACRONYMS

ADB	Asian Development Bank
AFD	Agence Française de Développement
AFL	Agence France Locale
AfDB	African Development Bank
AWF	Africa Water Facility
BAD	Banque Africain de Développement
BANOBRAS	Banco Nacional de Obras y Servicios Públicos
BCIE	Banco Centroamericano de Integración Económica
BDE	Banco de Desarrollo del Ecuador
BEIF	Border Environment Infrastructure Fund
BNB	Banco do Nordeste do Brasil
BNDES	Banco Nacional de Desenvolvimento Econômico e Social
BOAD	Banque Ouest Africain de Développement
BSTDB	Black Sea Trade and Development Bank
CABEI	Central American Bank for Economic Integration
CAF	Banco de Desarrollo de América Latina
CAP	Community Assistance Program
CEB	Council of Europe Development Bank
CDC	Caisse des Dépôts et Consignations
CDG	Caisse de Dépôt et de Gestion
CDP	Cassa Depositi e Prestiti
DB	Development Bank
DFI	Development finance institution
DBSA	Development Bank of Southern Africa
DWA	Dutch Water Authorities
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EPA	Environmental Protection Agency
ESG	Environment, Social and Governance standards
EU	European Union
FAIS	Fondo de Aportaciones para la Infraestructura Social
FMO	Netherlands Development Finance Company
FNE	Fundo de Financiamento do Nordeste
FONPLATA	Fondo Financiero para el Desarrollo de la Cuenca del Plata
GAD	Gobierno Autónomo Descentralizado
GCF	Green Climate Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GSIF	Green Social Investment Fund
GWSP	Global Water Security and Sanitation Partnership
IADB	Inter-American Development Bank
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDB	Inter-American Development Bank
IDFC	International Development Finance Club
IFI	International Financial Institution
Ilbank	Iller Bankasi
IMTA	Mexican Institute for Water Technology
IsDB	Islamic Development Bank
IPCC	Intergovernmental Panel on Climate Change
KfW	Kreditanstalt für Wiederaufbau
LAC	Latin America and the Caribbean
LAIF	Latin American Investment Facility
LMIC	Low- and middle-income country
MDBs	Multilateral Development Banks
NADB	North American Development Bank
NPBDs	National Public Development Banks

NDCs	Nationally Determined Contributions under the Paris Agreement
NRW	Non-Revenue Water
NWB	Nederlandse Waterschapsbank
OECD	Organisation for Economic Cooperation and Development
OJK	Financial Services Authority
OO	Organismo Operador
PATGES	Programa de Asistencia Técnica para la Gestión de Servicios de agua y saneamiento
PDAM	Local Water Supply Utility (Indonesia)
PDB	Public Development Bank
PFF	Public Sector Financing Facility
PMOOA	Programa para la Modernización de Organismos Operadores de Agua
PPP	Private-Public Partnership
PT SMI	PT Sarana Multi Infrastruktur
SDGs	Sustainable Development Goals
SEDA	Société d'Eau Dessalée d'Agadir
SMAT	Societá Metropolitane Acque Torino
SME	Small and medium sized enterprise
SOE	State-owned enterprise
SPV	Special Purpose Vehicle
SWAP	Sector wide approach
TA	Technical assistance
TF	Trust fund
TrackFin	Tracking Financing to WASH
UfM	Union for the Mediterranean
VDB	Vietnam Development Bank
VGF	viability gap fund
WASH	Water, sanitation, and hygiene
WB	World Bank
WSP	Water and Sanitation Programme

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EXECUTIVE SUMMARY

BACKGROUND

This report is a global assessment of national public development banks' (PDBs) involvement in the water sector in its broadest sense. It was commissioned by the Agence Française de Développement (AFD) in the context of the Finance in Common Initiative, which seeks to enhance PDBs' role in financing countries' commitments to the Sustainable Development Goals (SDG) and the Paris Agreement.

PDBs are banks located within the public sphere by mandate, ownership or governance. PDBs have a specific mandate to deliver on public policy objectives that support the economic and social development of a country or region.

Historically, national PDBs have played a significant role in water sector development in high-income countries such as France, Italy and the Netherlands. Whilst there are examples that PDBs play a similar role in middle-income countries, it also appears that their involvement in the water sector has not yet reached its full potential.

The main hypothesis of the assessment was that **national public development banks are underused and that they have the potential to raise finance for achieving both the SDG 6 and the water-related Paris Agreement goals.**

To test this hypothesis, this research assessed: 1) the nature and extent of PDB involvement in financing water-related investments, and 2) the drivers and constraints for PDB involvement in the water sector. Finally, the assessment sought to define recommendations for enhancing PDBs' role in water-related investments, to see if the hypothesis could be confirmed.

In particular, the study focuses on national PDBs (operating at national and local level), though also considers regional PDBs (operating at multi-country level). It also questions the role of international financial institutions (IFIs) in financing the water sector through national and regional PDBs.

This study is based on a literature review (Annex 4); the analysis of PDBs' datasets commissioned by AFD; and an **in-depth review of 13 national PDBs, 16 IFIs, development finance institutions (DFIs) and multilateral development banks (MDBs), that are known to be active in the water sector.** The selection was based on their geographic spread, size and availability (Annex 2). The reviews of the PDBs, IFIs, DFIs and MDBs were based on interviews with senior technical and financial staff and were complemented by a documentation review, particularly of PDBs' annual and strategic reports.

The study focused on PDBs that were involved in financing water-related investments and excluded PDBs that did not work at all in the sector. This means that the research cannot draw conclusions on the reasons why PDBs are not involved in some countries at all.

NATURE AND EXTENT OF NATIONAL PDBS' INVOLVEMENT IN WATER

The study confirms that national PDBs are key players, both historically and currently, in financing water in the countries where they operate. Europe and the Latin American and the Caribbean (LAC) region host a number of national PDBs that are very active in the water sector. In other regions there are also countries which have national PDBs that finance water-related investments, but these are fewer. The subsectors to which most of the financing goes depend on the historical mandate of the national PDBs and the level of development or maturity of the water sector.

National and regional PDBs included in this study have a strong focus on financing sanitation and water supply services. PDBs predominantly fund sewerage and wastewater treatment expansion as well as large water treatment and desalination works. They are involved to a much lesser extent in water resources management, including stormwater and flood management.

Ecosystem and biodiversity protection does not seem to be specific areas of investment of national PDBs involved in the sector. Rather, biodiversity protection is often considered through a 'do no harm' lens or as a positive side-effect of investments (e.g., in wastewater treatment).

Water sector investments (in the broad sense) represent on average between 5% and 15% of PDBs' portfolio, though figures are not always available in a comparable manner. There are data limitations because PDBs' lending activities are either not always tracked according to sector, or the definitions of sectors is not consistent across PDBs, especially when funds are channelled to municipalities and used for multiple sectors.

As a result, the extent of funding for water channelled via PDBs compared to other sources and channels is also not clear, including at national level. There is very limited data on the absolute amounts invested by PDBs in water and how they compare with investments directly made by other key actors, including central government, commercial banks and MDBs.

The nature of national PDB involvement in the water sector includes one or more of the following financial instruments and services.

- Providing credit for infrastructure investments in different forms: 1) balance sheet credit; 2) credit to local governments and utilities for specific investments; 3) project finance, usually directed to private sector entities, which may set up dedicated Special Purpose Vehicles (SPVs). This is the core set of financial products of all PDBs reviewed in this study.
- Structuring project finance – including co-financing mechanisms and private-public partnership (PPPs) for the operation of water and sanitation services. Whereas the previous point referred to providing the credit, there is often technical assistance involved in structuring the financing and co-financing of the more complex investments.
- Project preparation, either grant-funded, or through loans that are repayable if the project preparation leads to a bankable project. The extent to which PDBs offer this service depends very much on the extent to which they have non-repayable funds available for this.
- Technical assistance (capacity strengthening) to utilities and local governments, oriented at their technical and financial performance improvement. This is done with the dual aim of making the utilities and local government more creditworthy, and of strengthening the sustainability of the investments. Whereas this service is considered very important, not all PDBs have the ability to provide it, as this is usually funded through non-repayable finance.
- Influencing sector reforms and sector dialogue for improving regulatory frameworks and funding related studies. Only a few PDBs were involved in national level reforms.
- Channelling central government transfers to local governments and utilities (from taxes or sovereign loans). Only a few PDBs mentioned this role.
- Administering dedicated trust funds for the water sector. In some cases, these are trust funds set up at the request of national government or external financiers. The PDBs may or may not replenish these funds out of their own profits. This was mentioned by only two PDBs.

Loans are the main financial instruments deployed by PDBs in the water sector.

- Through loans, national and regional PDBs:
  - finance investments, such as the large expansion of sewerage and treatment networks, potabilisation and desalination plants and sewerage treatment plants;
  - finance mid-sized towns and utilities which are more creditworthy than smaller municipalities and rural areas, but which are not able to negotiate favourable loans directly with IFIs or commercial banks. In several countries (e.g. Ecuador, Philippines, Brazil), larger utilities can obtain loans from commercial banks or IFIs at more favourable conditions, whereas smaller municipalities (and their utilities) are not creditworthy at all, not even for PDBs.
- Channel sovereign loans from IFIs to smaller municipalities and utilities.

- Finance climate change adaptation investments, with financing sourced from climate funds as a few PDBs are accredited to manage such funds.
- Where both financial markets and the water sector are mature, PDBs also support utilities accessing international capital markets through bond issuance.

CONSTRAINTS AND SUCCESS FACTORS OF PDBS' ENGAGEMENT IN WATER

The main constraints for national PDBs involvement in the water sector can be grouped in the demand for PDBs financing to the water sector and the supply of financing.

On the demand side

Historically, utilities and municipalities in many countries rely on central and/or local government funding for investments, which may inhibit demand for regional or national PDB financing for the water sector. In some countries, as financial regulations and strategies within the water sector evolve, public finance may primarily be directed to the poorest municipalities, and the mid-sized and larger utilities may be incentivised to take on loans for investments.

There are many risks related to the financial and operational performance of municipalities and utilities. In several countries, utilities face low revenues from tariffs, as either tariff levels are too low, or non-revenue water levels too high. This means the revenue flow to repay loans is seen as insufficient. This has led some PDBs to dedicate financing and programmes to improving the performance of utilities and municipalities as prospective borrowers. This is not the case everywhere. In high-income countries, the water sector is seen as low risk, exactly because there are frameworks in place that ensure stable revenue flows from tariffs.

There are limitations on the extent to which local governments can take on debt or spend more in the sector (fiscal space). Treasuries often set the amount of local government spending and debt and this constrains investments in the water sector which does not generate immediate returns.

The time it takes for projects to originate and source finance is another constraint. The combination of limited skills, knowledge, data and studies in the sector and the limited capacity of utilities/municipalities to formulate projects, means that it can take 3-5 years for projects to originate and source financing. In order to address this constraint, several PDBs have dedicated financing to project preparation.

A final constraint is the limited capacity for project execution. Borrowers also need the capacity to execute the projects, have processes in place for tendering, contracting, procurement, supervision of works etc. This capacity may differ between borrowers, with smaller municipalities and utilities typically having less capacity than mid-sized and larger utilities. For this reason, PDBs don't only finance the investment, but also provide technical assistance in execution where needed. Where the borrowers have the capacity –for example in the Netherlands – the role of the PDB is limited to providing finance only.

On the supply side

There is internal pressure to prioritise sectors in which investing is easier and more profitable. Whilst national PDBs are mandated to implement government policy and take on risks, they also need to balance their books. This means that they can be less proactive in sourcing projects in sectors deemed riskier, such as water, or those that are they less familiar with. Several interviewees commented on the fragmented nature of the water sector, given its decentralisation with roles spread between utilities and local government. This makes it more difficult to finance than sectors that are more centralised and concentrated in fewer institutions.

Currency risk was not mentioned as a major constraint (compared with all of the above) and it is not specific to the water sector, however it is a limitation mentioned by some of the PDBs. For PDBs that get finance from external sources on a foreign currency, there is always currency risk. Some IFIs offset this risk by lending in the local currency, but most of the currency risk is managed by PDBs and their swap teams.

Other critical factors on the PBD supply side include:

- a clear mandate to finance the water sector;
- the financial means to implement this mandate; and,
- in-house water sector knowledge and expertise.

Other relevant drivers include:

- strong relationships with the client base and contributions to improvements in the water sector;
- engagement in national dialogues on policy or regulatory reforms; and,
- taking on the risks of early-stage project preparation and then bringing other private investors and service providers on board.

In general, the difference between PDB financing and domestic private bank financing is related to the conditions offered and the non-financial instruments made available by national PDBs. Technical assistance to local governments and utilities is an added value of PDBs, as are the conditions for loan repayment. One of the most relevant aspects to the water sector is that PDBs are instrumental in implementing multi-sector projects that are cross-subsidising in nature. This allows for the mutualisation of risk between lower (i.e. larger utilities) and higher credit risk borrowers (i.e. smaller municipalities) and lower and higher risk sectors, enabling smaller borrowers to access more favourable conditions.

The other relevant aspect ¬– and difference with commercial banks – is that national PDBs use government and donor grants, concessional loans from IFIs and commercial loans from the local banking sector (blended finance). Moreover, they use specific funding tools for this purpose such as revolving funds. The blended finance is not only intended to increase financial resources to the sector, but also to lower the interest rates of loans to the local government and utilities.

IFI FINANCE TO THE WATER SECTOR THROUGH NATIONAL PDBS

IFI investments in the water sector through PDBs are not widespread. The channels of IFI financing to the water sector depend on how the water sector is structured. In many developing countries where the central government continues to play an important role in water sector funding, IFIs typically provide sovereign loans to a central ministry of finance, which then passes them on as grants/loans to line ministries and/or utilities and local governments. In other countries, where decentralisation is effective, some IFIs also provide sub-sovereign loans directly, typically to metropolitan utilities, local government and specific projects.

IFI financing for water through PDBs is conditional on the presence of national PDBs in the first place, and whether they have a clear mandate for water. Some countries either have no national PDB or only nascent PDBs. Some sub-regional IFIs operate in countries where there are no domestic PDBs. In these cases, IFIs provide loans directly to local governments or utilities. For example, none of the Central American Bank for Economic Integration's (CABEI) borrowing member countries have national PDBs that operate in the water sector. The same applies to most of the member countries of Fondo Financiero para el Desarrollo de la Cuenca del Plata (FONPLATA).

IFIs that do provide loans to national PDBs for the water sector, do so for on-lending to municipalities and service providers. Lending can be earmarked for water or for multiple-purpose municipal projects. The rationale for financing through PDBs is that they are able to reach a broader geographical scope and therefore reach more beneficiaries than IFIs. National PDBs can also target smaller municipalities and utilities and provide smaller loans while IFIs are often unable to provide loans under a certain amount. National PDBs can also provide credit lines in the local currency, which is often a limitation for IFIs.

Water sector loans provided through national PDBs are larger than other loans to the sector, with IFIs being able to shift most of the lending risks to PDBs, which are often backed by sovereign guarantees. PDBs manage the currency risk since most of the water projects are financed in local currencies while IFIs mostly finance in hard currencies.

Investing in the water sector through national PDBs provides value for money to IFIs in terms of outcomes achieved relative to the size of loans they provide. By working with national PDBs, IFIs can also put in less time and resources in water project preparation. In these cases, IFIs work upstream with finance institutions and regulators and not directly with municipalities or service providers. It is then national PDBs that take on the responsibility for project preparation and ensure all sub-projects comply with IFIs standards and procedures.

National PDBs also provide a good solution for investments in the sector when IFIs do not have local offices. National PDBs can actively contribute to project origination, preparation and monitoring on behalf of IFIs. Additionally, the collaboration with PDBs contributes to capacity reinforcement and increases the autonomy of the countries' financial systems in terms of processes and international standards – which then benefits many other sectors.

From a national PDB perspective, working with IFIs also has benefits. IFIs often have a good credit rating and can therefore attract capital at interesting rates, which allows national PDBs to on-lend at lower rates. Other attractive benefits include the potentially large size and long tenure of IFI financing. What common happens is that PDBs co-finance larger and complex projects jointly with IFIs.

However, in some contexts, national PDBs have access to cheaper finance from local capital markets. This is the case in some LAC and Asian countries (e.g. Brazil, Philippines) where local capital markets are well-developed. The combined effect of IFIs' lending procedures, conditionalities (which represent opportunity costs for national PDBs) and currency risks can incentivise them to seek finance locally, although size and tenure may be smaller.

CONCLUSIONS

The main hypothesis of the study has been confirmed. Namely, that PDBs are underused in the sector and that there is a potential to further enhance their role.

National PDBs can play an important role in achieving both the SDG 6 targets and the water-related Paris Agreement goals. Globally, PDBs are key players in financing investment, with PDB financing representing 8% to 10% percent of global investments. Financial data on the extent of financing for water channelled through PDBs is lacking, but there is historic evidence of the role PDBs have played to support water sector development at scale (and continue to do so) in some countries. In addition, current experience indicates a well-established role for national PDBs in the water sector in certain regions (Europe and LAC in particular).

National PDBs are able to provide a unique range of financial instruments and services. This study confirmed different types of loans that PDBs can provide for infrastructure investments. PDBs are able to provide these at better terms and conditions than commercial banks, particularly to mid-sized utilities and local governments that have a reasonable level of financial performance and capacity to formulate and execute projects. In addition, they provide a range of services for project preparation, performance improvement and technical support in project execution. They are also able to structure and provide co-finance mechanisms with commercial banks and IFIs. This has allowed them to cater for both financial and technical gaps in the sector, at least in certain segments.

Considering the large financing needs of the water sector, there is room for both national PDBs and IFI finance. The study suggests opportunities for IFIs to collaborate with PDBs to reach broader water sector development outcomes. In turn, IFIs' expertise, particularly on project appraisals, can help build PDBs' capacities. This is particularly needed for boosting investments in ecosystem and biodiversity protection.

There is also room for both commercial finance and PDB finance. As discussed, the products and services offered are different. PDBs, for example, can extend a range of technical assistance services and some also extend long maturity loans. There is also some evidence that PDBs can play an active role in mobilising private capital for water. They support the project preparation process – and take on very early-stage risks – and assist with financial transactions and bond structuring/issuance. More research in this area is needed to better understand the role PDBs can play in mobilising private capital for the sector.

There are still many countries where national PDBs either do not have a mandate in the sector or only have a nascent/limited role, suggesting an untapped opportunity for increasing finance for water. A number of key factors are determinant for enhancing their engagement in the sector, particularly a clear mandate with financial allocation and in-house water sector expertise.

Finally, national PDBs are well-placed to address some of the wider challenges in the water sector which limit the ability to mobilise finance. They can provide technical assistance and non-repayable finance for programmes focused at improved performance and enhanced creditworthiness of utilities and local governments. They can also play a significant role in project preparation and support the dialogue on tariffs and cost-recovery. As public institutions, PDBs are well-placed to engage in these types of dialogues, where they can bring compelling evidence to invest in the sector through their financial and technical expertise.

RECOMMENDATIONS FOR ENHANCING PDBS' ENGAGEMENT IN THE WATER SECTOR

The overall recommendations are for governments and IFIs to strengthen PDBs' capacity to prepare and appraise water sector projects and to allocate financing and funding to PDBs earmarked for water investments. At the same time, boosting PDBs' engagement requires supporting demand creation for water financing and addressing water sector inefficiencies and constraints. Specific recommendations are provided for three groups of actors: 1) national PDBs themselves (thereby differentiating between PDBs that already operate in the water sector and seek to enhance that role, and ones that are only involved to a limited extent); 2) governments; and, 3) IFIs. In addition, there are recommendations for further research.

Recommendations for PDBs that are investing in the water sector and seek to enhance that role are to focus on: 1) removing demand-side constraints at sector level; 2) removing demand-side constraints at PDB level; and, 3) increasing supply-side measures. Specifically, this study recommends PDBs to:

- contribute to policy dialogues on sector financing strategies;
- support consultations with clients and sector organisations to help lift some of the important barriers to project bankability;
- adopt a programmatic approach, including the standardisation of processes and contracts, and finance water projects with different risk levels; and,
- articulate an approach towards mitigation and adaptation in the water sector.

Recommendations for PDBs that have the mandate but are not, or only to a limited extent, investing in the water sector are to: 1) ensure that the water sector is seen as a sector of opportunities in the internal strategy of the PDB; and, 2) develop the capacity to finance water sector investments. Specifically, this study recommends PDBs to:

- recognise and map the specific needs and opportunities of the water sector. There are financing needs exist across the sector, from water to sanitation, and across geographical settings;
- articulate the contributions that financing water investments can make to SDG and climate-related targets;
- establish dedicated windows or programmes for project preparation, utility performance improvement and/or technical support in project execution; and,
- develop internal sector expertise, including through South-South cooperation.

Recommendations for national government entities, such as water sector line ministries and agencies, water sector regulators, as well as ministries and regulators in charge of finance are to: 1) enable PDB finance in the sector; 2) strengthen PDB capacity to engage in, and provide finance for, the water sector; and, 3) address water sector inefficiencies through regulatory measures. Specifically, the study recommends government entities to:

- formulate sector financing strategies and define PDB's roles in them;
- engage PDB staff in sector finance strategies;
- provide political leadership for guiding PDB's mandates in the water sector;
- allocate public funds to initiate PDBs to provide water sector investments;
- start with small projects, as a basis for standardising processes;
- have flows of non-repayable finance for certain segments and/or co-financing;
- develop policy and regulatory measures to improve the efficiency and performance of water sector institutions; and,
- develop regulatory measures that incentivise investment and enable private investments.

Recommendations for IFIs are to: 1) support PDBs and governments to implement the recommendations mentioned above for as far as it is within their power and mandate; and 2) direct their financing to the water sector in collaboration with PDBs. Specifically that would include:

- supporting the policy dialogues around sector finance strategies that include defining the role of PDBs;
- supporting evidence and narrative creation on the nexus between the water sector and climate change adaptation and mitigation;
- supporting capacity building in PDBs in the water sector, including by facilitating South-South cooperation;
- channelling loans via PDBs, particularly when PDBs are relatively new to the water sector;
- providing grants, concessional finance and technical assistance to overcome a number of water sector related constraints;
- co-financing larger investment projects with PDBs; and,
- channelling funds for water sector investments through PDBs in local currencies.

RECOMMENDATIONS FOR FURTHER RESEARCH

The findings of the study also raise additional questions. **This section lists important gaps that this report either did not address or did not find detailed answers for.** It is recommended that these be taken up in either country-specific research or more global research. These include:

- measures to increase PDBs' involvement in the water sector in specific countries;
- complementarities between PDBs and commercial banks in the water sector; and,
- attractiveness of ecosystem and biodiversity protection for PDBs.

For a summary of the recommendations see page 37 >

This global report is accompanied by a stand-alone report on Latin America where PDBs have played an important role in supporting the water sector.

PART 1
OVERVIEW & FINDINGS

1. INTRODUCTION

This report is a global assessment of public development banks' (PDBs) involvement in the water sector. It was commissioned by the Agence Française de Développement (AFD) in the context of the Finance in Common Initiative, which seeks to enhance PDBs' role in financing countries' commitments to the Sustainable Development Goals and the Paris Agreement.

1.1 PURPOSE

Reaching SDG 6 and any water-related goal of the Paris Agreement requires significant investments and optimising of public funding allocations. The water sector is presently underfunded and underfinanced.

There is an estimated financing gap of US$ 114 billion to only achieve universal coverage for water and sanitation. This does not include the need to repair and replace ageing infrastructure or the costs of projected population growth, urbanisation and climate change (Hutton and Varughese, 2016; UNESCO, 2019; Biswas and Seetharam, 2008).

New estimates from the World Bank suggest that achieving SDG targets 6.1 and 6.2 will cost low and middle-income countries US$ 198 billion a year, with a further US$ 103 billion required for flood protection (World Bank, 2019).

Achieving universal access to safely managed sanitation services by 2030 will require a fourfold increase in current rates of progress (15 times in least developed countries and nine times in fragile contexts) while achieving universal access to safely managed water services by 2030 will require a fourfold increase in current rates of progress (10 times in least developed countries and 23 times in fragile contexts) (WHO/UNICEF, 2021). See Table 1.

The finance gap for implementing the countries' Nationally Determined Contributions (NDCs) under the Paris Agreement related to water and sanitation is unknown. With regards to water-related ecosystem protection, a recent report recommends an increase in financial flows to watershed protection programmes from US$ 27 billion to US$ 104-138 billion annually by 2030 (Deutz et al., 2020).

Table 1: Water supply and sanitation services: the size of the challenge

Sanitation	Water
3.6 billion people lack safely managed services	2 billion people lack safely managed services
Two thirds of people who still lack even basic services live in rural areas. Nearly half of them live in sub-Saharan Africa.	Eight out of 10 people who still lack even basic services live in rural areas. Around half of them live in least developed countries (LDCs).

Source: WHO/JMP 2021

Recognising the potential of national public development banks (PDBs), this study highlights what specific roles PDBs can play in supporting governments to achieve SDG 6 and reaching their commitments under the Paris Agreement.

The main hypothesis of the study is that national public development banks are underused and there is a lot of potential for them to raise finance for achieving both the SDG 6 targets and the water-related Paris Agreement goals.

In order to confirm this hypothesis, the study seeks to understand:

- the extent and nature of national PDBs' operations in the water sector and confirm whether they fulfil the roles mentioned above;
- the drivers and constraints of their involvement, including mandates, water sector needs and the structure of water sector markets; and
- if the hypothesis is confirmed, what can be done for national PDBs to fulfil their potential and enhance their operations in the water sector.

The results of the study will help inform a future course of action for IFIs, PDBs, national and local governments and other development partners seeking to support PDBs in the water sector.

The report contains recommendations on:

- actions to address water sector constraints that limit national PDBs' involvement;
- actions to enhance national PDBs' capacity to deliver financial products for water; and
- what other technical assistance would be useful to mobilise water sector finance via national PDBs.

This report is accompanied by a stand-alone report on Latin America where regional and national PDBs have played an important role in supporting the water sector.

1.2 SCOPE AND DEFINITIONS

What are public development banks?

PDBs are banks located within the public sphere by mandate, ownership or governance. This dynamic definition comprise what public banks do, how they operate and why (WB 2018, FDC 2020, McDonald et al., 2021).

Unlike other kinds of state-owned financial institutions, such as state-owned commercial banks or insurance companies, PDBs have a specific mandate to deliver on public policy objectives that support the economic and social development of a country or region. In some cases, PDBs may also engage in commercial lending and lend to individuals.

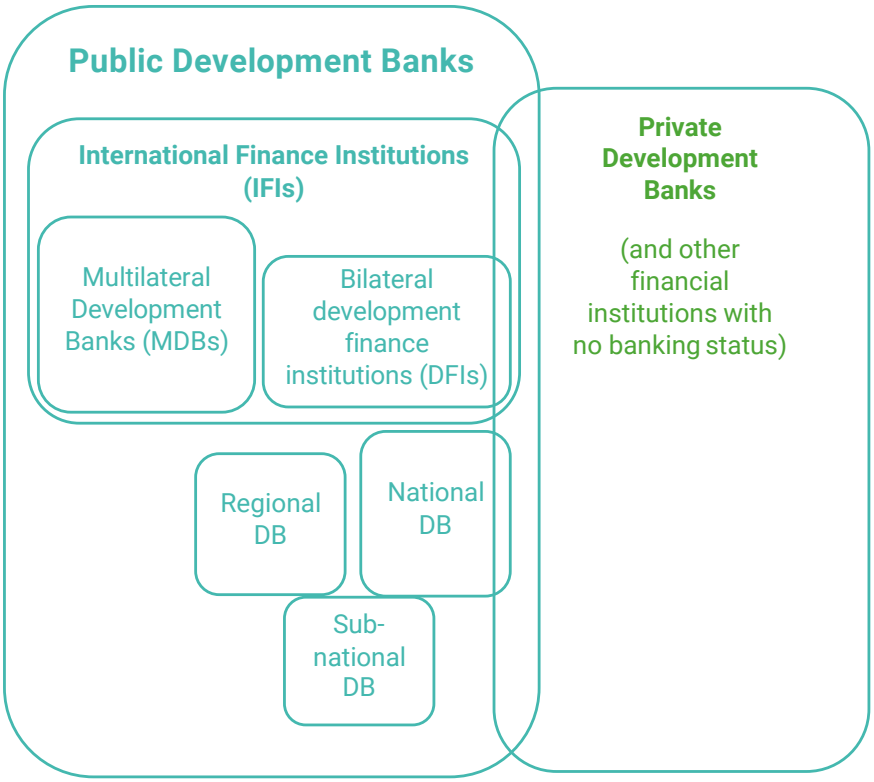
There are an estimated 452 PDBs worldwide (AFD 2020a), 80% is fully government owned and they finance US $2.3 trillion annually representing 8% to 10% of global public and private investments (UN, 2021).

PDBs can be international, regional, national or sub-national (Figure 1, Box 1). Their sizes vary, but the average assets for both multilateral and bilateral banks are US$ 149 and US$ 139 billion respectively; for regional PDBs US $12 billion; national US$ 15 billion; and subnational US$ 12 billion (WWF et al., 2021).

The study particularly focuses on national PDBs (operating at national and local level), but also considers regional PDBs (operating at multi-country level). It also interrogates the role of IFIs in financing the water sector through national and regional PDBs.

Annex 4 compiles the literature review on what is known about who they are, their mandates, the benefits, the challenges and their potential role in financing the water sector.

Figure 1: Public development banks: an overview



Source: authors

Box 1: Definitions of public development banks

Public development banks include international financial institutions (IFIs) conducting development-oriented finance on a bilateral (DFIs) or multilateral basis (MDBs).

> **Multilateral development banks (MDBs)** are public or private sector arms of international financial institutions (IFIs) that have been established by more than one country, and hence are subject to international law (i.e. World Bank, Asian Development Bank).

> **Bilateral development finance institutions (DFIs)** are either independent public institutions, such as the Netherlands Development Finance Company (FMO) or the Agence Française de Développement (AFD), or part of larger bilateral development banks (i.e. Kreditanstalt für Wiederaufbau (KfW) Germany, Cassa Depositi e Prestiti (CDP) Italy).

National, regional or local development banks are government owned financial institutions that provide financing for economic development. In this study we focus on national and regional public development banks and call them national PDBs for simplification. In some literature they are also called domestic development banks.

Source: OECD (n.d.)

The main difference between PDBs and commercial banks is usually the target beneficiaries (e.g. municipalities) which are not covered by commercial banks and the ability to provide longer tenor loans, non-reimbursable finance and lower interest rates. PDBs also offer more diversified financial and

non-financial products such as guarantees, policy based loans, technical assistance to local governments etc. For a summary of the discussion on public development banks vs commercial banks see Annex 4 which contains the literature review.

At a more limited scale, the report also considers non-banking institutions that deliver financial services where their activities are complementary to PDBs. For example, it reflects on the role of Water Agencies (Agences de l'Eau) in France, which provide both technical assistance and financial assistance to help deliver government water sector policy objectives.

What is considered the water sector?

This study considers the water sector at large, i.e. the water and sanitation infrastructure (production, distribution) and services, multipurpose infrastructure (irrigation canals, agriculture, flood protection) and water resources management, including nature-based solutions as well as water-related ecosystem protection, which contribute to achieving SDG 6 and the Paris Agreement (see Box 2 for definitions).

It also takes into account investments contributing to biodiversity protection where this is achieved through water-related investment, such as the development of wastewater treatment facilities.

Box 2: Definition of key terms considered under the broader 'water sector'

Water services. Activity of planning, developing, distributing and managing access to sufficient, safe, physically accessible, and affordable water to all the people in a defined service area.

Sanitation services. Sanitation services refer to the management of excreta from the facilities used by individuals, through emptying and transport of excreta for treatment and eventual discharge or reuse.

Water resources management. Activity of planning, developing, distributing and managing the optimum use of water resources. Might include drought management and flood control.

Water-related ecosystem protection. Activity related to restoring and protecting water-related mountains, forests, wetlands, rivers, aquifers and lakes.

Nature-based solutions. Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience (European Commission definition).

Multipurpose infrastructure. Encompasses all constructed water systems, including dams, dikes, reservoirs and associated irrigation canals and water supply networks, which may be used for more than one purpose for economic, social and environmental activities.

Biodiversity protection. Action of protecting the variety of life on Earth, including plants, animals, fungi, microorganisms, the habitats in which they live and ecosystems they form.

1.3 FOR WHOM IS THIS DOCUMENT?

Public policy and financial stakeholders are the main audience for this study. They include staff of PDBs as well as other non-water experts, particularly ministries of finance and treasury.

The study provides suggestions on how to advance PDB support, including support to the enabling environment of the water sector, i.e. support to the institutions and the regulatory and policy environment in which PDBs operate and incentives linked to financing mobilisation.

The study also targets water-specialised institutions such as water sector regulators, public water operators, municipal water managers and ministries responsible for water, to raise awareness of the potential role of national PDBs and bring them up to date on how to raise domestic resources via PDBs. The study makes recommendations on how water-specialised institutions' roles can be more impactful on PDBs and help shape their agenda for the future.

The findings are also relevant for PDBs themselves. As the study highlights PDBs' activities in the water sector, it also describes enabling operational modalities, the role of central government and international finance institutions (both MDBs and DFIs) and therefore holds lessons for PDBs seeking to increase their operations in water.

1.4 RATIONALE FOR THE STUDY

Historically, national PDBs have played a significant role in water sector development in high-income countries such as France, Italy and the Netherlands (Box 3). PDBs also play a key role in several upper middle-income countries that are part of this review (see Annex 1 Case Studies).

From the post World War Two era to the beginning of the structural adjustment period, development banks were regarded as the centrepiece of a development strategy even if they were often providing mixed results (Wagner, 2020).

This role has also been highlighted in the Addis Ababa Agenda for Action on financing sustainable development agreed in July 2015 (UN, 2015). In its roadmap for the financing of the SDGs, the UN made it a priority to strengthen its engagement with national development banks so as to enhance their role in SDG and climate finance. This means supporting them to identify SDG investment opportunities, strengthen their capacity to issue SDG bonds and similar financial products and promote the implementation of Environment, Social and Governance (ESG) standards (UN, 2019).

As financial institutions with a public mandate, PDBs can play a role in increasing and improving financial allocations to the water sector (see literature review in Annex 4). PDBs can fulfil this role in multiple ways, including by:

- channelling finance to sectors that bring social, environmental and economic returns that are not attractive to commercial banks;
- acting as a catalyst in policy dialogue for SDG goals achievement;
- tailoring financial products suitable for the water sector, which often requires long-term capital with favourable terms and tailor made arrangements;
- channelling funds and expertise for project preparation in order to bring water projects to bankability stage;
- designing financial products able to attract third parties, particularly private sector investors and commercial banks.

PDBs have proven to provide a countercyclical role contributing to restoring the financial and economic stability. This happened during the 2008/9 global financial crisis and more recently during the Covid-19 crisis. Development banks have been able to provide urgent support to health systems and economic activity more generally, with some doubling their funding volumes to support the most affected sectors (UN, 2021).

In the water sector, the largest IFIs have made repayments more flexible and created specific credit lines. PDBs are able to play this role because of their longer time horizons and more stable funding sources.

Box 3: A historical perspective: the cases of CDP (Italy) and NWB (Netherlands)

Cassa Depositi e Prestiti (CDP), Italy. CDP was established in 1850 with the main purpose of mobilising private savings managed by the State for financing public works. As of 2021, 83% of its share capital is owned by the Italian Ministry of Economy and Finance, the 16% is held by various banking foundations, while the remaining 1% is in treasury shares. Since its creation, CDP has played a major role in financing local development, especially through the provision of debt to municipalities. Compared to other institutions, CDP offered better interest rates, duration times spread according to the nature of works and long tenures (up to 50 years). This made CDP a key financial partner for Italian municipalities looking to expand basic infrastructure, including water and sanitation services. In Milan for example, CDP's involvement dated as far back as 1906 when it provided 35-50 years payback period loans to the city of Milan for multiple sectors, including water. At that time, the Italian Central Government did not provide any transfers to municipalities who had to finance infrastructure development from their own resources (primarily local taxes) and repayable finance. At the time CDP also provided short-term debt to the municipality to cover interest rates payments from loans contracted from commercial banks.

Nederlandse Waterschapsbank (NWB), Netherlands. The NWB Bank was officially established in 1954, with a mandate to provide the Dutch Water Authorities (DWA) with funding for investments at the lowest possible cost. In its first five years, the NWB issued 323 long-term and 919 short-term loans. The NWB was capitalised mainly through private loans provided by institutional investors and banks, allowing the DWA to attract resources on relatively favourable terms. In 2021, 81% of the NWB is owned by the DWA, 17% by the Dutch state and 2% by the provinces. The NWB provides the DWAs with: i) long-term loans; ii) financial services; iii) a central treasury function; iv) centralised financial expertise; and v) low interest rates. Nowadays the NWB does not focus only on the water sector: 63% of its investments are on social housing and 14% in water authorities. In 2006, the NWB established the NWB Fund to finance support to water management projects in developing countries (Dutch Water Authorities, 2015).

Source: Crespi Reghizzi, 2012; Havekes & Dekking, 2014; and Dutch Water Authorities, 2015)

1.5 DATA SOURCES AND LIMITATIONS TO THE STUDY

This study is mostly based on grey literature review (Annex 4) and the analysis of PDB datasets commissioned by AFD (2020a and 2020b). The datasets provide a quantitative insight into the number and nature of existing PDBs in the world, the size of their assets and an indication if they are involved in SDG 6 related financing.

In addition, the study included in-depth reviews of 13 national public development banks and 16 IFIs, development finance institutions (DFIs) and multilateral development banks (MDBs), that are known to operate in the water sector. The selection was based on their geographic spread, size and availability to take part in the study (Annex 2). The reviews were based on interviews with senior technical and financial staff and complemented with documentation reviews, in particular PDBs' annual and strategic reports.

For more in-depth information, case studies were written up on the PDBs, the context in which they operate and their operations in the water sector. These case studies are presented in Annex 1. A separate report on PDBs in the water sector in Latin America is also available as this region has some of the best-known cases of PDBs involved in the water sector.

Specific challenges and opportunities of national water sectors were also quickly scanned to highlight factors that currently contribute to PDBs' involvement. These factors include water sector needs (which provide project opportunities for banks), water and sanitation services institutions and sector market structures, all of which influence the degree of service decentralisation and private sector participation (either as investor or service provider) in the delivery of services.

Despite this broad coverage, the study does have some important limitations. Time and resource constraints limited the depth of the assessment of the financial context, particularly issues related to financial regulations, debt servicing, liquidity and competition.

The study is also constrained by data availability. Not all the reviewed PDBs were able to precisely disclose or disaggregate the volume of investments and other financial/non-financial services going to the water sector. Many were able to share the order of magnitude of their investments in water, but more detailed information was not always available. This is the case when PDBs do not track water investment separately, but as part of overall infrastructure investments, municipal services and/or environmental services. PDBs may also be reluctant to fully disclose the nature of their activities for confidentiality reasons. As a result, the case studies presented in Annex 1 vary in the level of detail presented.

The study focused on PDBs that were involved in financing water-related investments and excluded PDBs that were not involved in the sector at all. To answer the research questions, the study had to select PDBs currently working in the water sector. This means that the research cannot draw conclusions on the reasons why PDBs are not involved at all in some countries.

Interviews with AFD staff were carried out on PDBs in two additional countries, but the PDBs were excluded as case studies given their limited involvement in water. Some lessons from these cases are highlighted in section 3.4.

1.6 REPORT STRUCTURE

The structure of this report strives to target different audiences, ranging from more generalist to more specialised as follows.

Part 1 Overview and findings

- Section 1 sets the purpose, scope, audience, rationale and limitations of the study.
- Section 2 presents a global landscape of national PDBs and their involvement in water.
- Section 3 brings together the main findings of the study based on the PDBs case studies.
- Section 4 summarises the findings and interviews with the IFIs.
- Section 5 presents the conclusions.
- Section 6 formulates recommendations on the way forward for different stakeholders.

Part 2 Analysis

- Section 5 takes a closer look at national PDB activities in the sector, drawing on case studies of selected PDBs.
- Section 6 discusses how, at present, IFIs interact with national PDBs in the water sector.

Part 3 Case studies, methodology, terminology and references

- Annex 1 includes the selection of case studies.
- Annex 2 presents the methodology and the list of organisations and individuals interviewed as part of the study.
- Annex 3 describes key banking and finance terminology used in this report.
- Annex 4 contains findings from a literature review that addresses the different areas of the report.

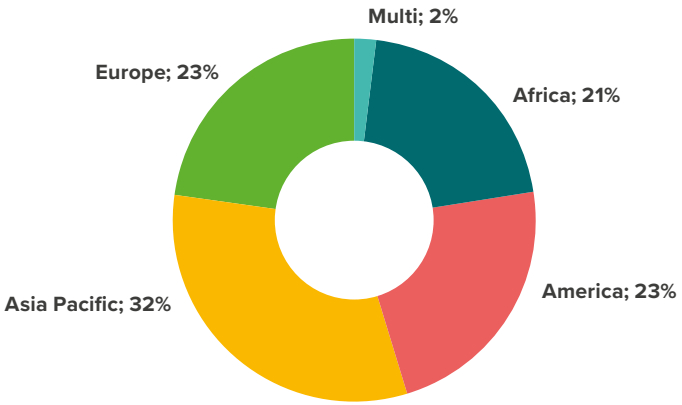
2. PUBLIC DEVELOPMENT BANKS: A GLOBAL LANDSCAPE

This section provides an overview of PDBs globally and their roles in implementing government agendas related to the SDGs and Paris Agreement. It draws primarily on the analysis of the AFD PDB database (2020a).

2.1 GEOGRAPHICAL SPREAD

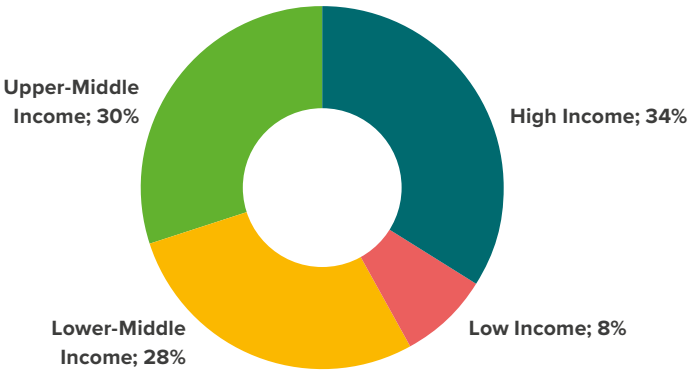
The AFD (2020a) database has identified 452 PDBs globally. These include national PDBs as well as regional and international institutions. The oldest PDB is Caisse des Dépôts et Consignations (CDC) created in France in 1816. The newest is the Scottish National Investment Bank created in 2020. The majority of PDBs are based in the Asia Pacific (Figure 2) and in high-income and upper middle-income countries (Figure 2).

Figure 2: PDBs geographical spread



Source: AFD database (2020a)

Figure 3: PDBs per countries' level of income

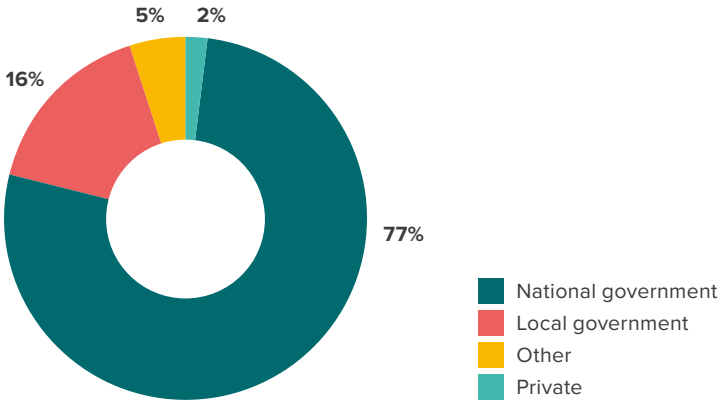


Source: AFD database (2020a)

2.2 OWNERSHIP

The large majority (80%) of the PDBs is 100% government owned, either by national governments (66%) or local government (14%). The breakdown of primary ownership (more than 50%) is illustrated in Figure 4.

Figure 4: PDBs primary ownership (more than 50%)



Source: AFD database (2020a)

2.3 ASSETS

In total, in 2020, PDBs owned US$ 11,586,088 million in assets, with net profits of US$ 48,178 million (AFD, 2020a). Most of the assets and net profits are from PDBs located in Eastern Asia PDBs (Table 2). The top 10 PDBs own 59% of overall PDBs assets, the top 20 PDBs own 75% of overall assets.

Table 2: Top regions, PDB asset ownership and net profits

Region	Assets (%)	Net Profit (%)
Eastern Asia	43%	44%
Western Europe	24%	23%
Multi	8%	5%
South America	7%	6%
Southern Europe	5%	8%
North America	3%	2%
Western Asia	2%	3%
Central America	2%	1%
South Eastern Asia	1%	4%
Southern Asia	1%	3%
Eastern Europe	1%	-4%
Northern Africa	1%	1%

Source: AFD database (2020a)

Table 3: Top 20 PDBs in the World (measured by assets, million US$)

Country	Bank	Acronym	Mandate	Assets (mln US$)
China	China Development Bank	CDB	General	2,352,293
China	Agricultural Development Bank of China	ADBC	Agriculture	996,287
Multi	European Investment Bank	EIB	General	636,687
China	Export-Import Bank of China	ChinaExim	Export/ Import	609,695
Germany	Kreditanstalt für Wiederaufbau	KfW	General	560,899
Italy	Cassa Depositi e Prestiti	CDP	General	486,953
Multi	International Bank for Reconstruction and Development	IBRD	General	403,056
Brazil	Caixa Econômica Federal	CAIXA	Housing	325,863
Canada	Caisse de Dépôts et Placement du Québec	CDPQ	General	256,518
Korea	Korea Development Bank	KDB	General	233,562
Brazil	Banco Nacional de Desenvolvimento Econômico e Social	BNDES	General	206,787
Multi	International Development Association	IDA	General	201,591
Japan	Japan Finance Corporation	JFC	Micro, SMEs	192,210
Multi	Asian Development Bank	AsDB	General	191,860
France	Caisse des Dépôts et Consignations	CDC	General	186,727
Germany	Development Bank of Hessen-Thuringia	HELABA	Micro, SMEs	186,688
Germany	North Rhine-Westphalia Development Bank	NRWBank	Micro, SMEs	170,801
Japan	Japan Bank for International Cooperation	JBIC	General	164,172
Netherlands	BNG Bank Nederlandse Gemeenten	BNG	Local	157,523
Japan	Development Bank of Japan	DBJ	General	154,512
			Total	**8,674,684**

Source: AFD database (2020a)

3. NATIONAL PDBS INVOLVED IN THE WATER SECTOR: FINDINGS FROM THE CASE STUDIES

3.1 OVERVIEW OF NATIONAL PDBS IN THE CASE STUDIES

In total, 13 national and regional PDBs with operations in the water sector, have been interviewed and reviewed (Table 4). All but one are 100% publicly-owned. CDP Italy is the only one with a share of privately owned capital (17%). The PDBs vary significantly in size, with assets ranging from US$ 2 billion (Banco de Desarrollo del Ecuador) to US$ 487 billion (Cassa Depositi e Prestiti, Italy). See Annex 2 for the criteria for selecting these PDBs.

Table 4: Overview of national and regional PDBs case studies (organised per asset ownership). All data are from 2019

Country	Bank	Acronym	Assets (mln US$)	Level of Income	Year established	S&P credit rating
Italy	Cassa Depositi e Prestiti	CDP	486,953	High	1850	BBB
Brazil	Banco Nacional de Desenvolvimento Econômico e Social	BNDES	206,787	Upper-Middle	1952	BB-
France	Caisse des Dépôts et Consignations	CDC	186,727	High	1816	AAA
Netherlands	Nederlandse Waterschapsbank	NWB	95,900	High	1954	AAA
Mexico	Banco Nacional de Obras y Servicios Públicos	BANOBRAS	42,918	Upper-Middle	1933	BBB+
Morocco	Caisse de Dépôt et de Gestion	CDG	26,255	Lower-Middle	1959	n.a.
Brazil	Banco do Nordeste do Brasil	BNB	15,107	Upper-Middle	1952	BB-
Vietnam	Vietnam Development Bank	VDB	14,018	Lower-Middle	2006	n.a.
South Africa	Development Bank of Southern Africa	DBSA	6,202	Upper-Middle	1983	AA+
Turkey	Iller Bankasi	IIBank	6,093	Upper-Middle	1933	n.a.
Indonesia	PT Sarana Multi Infrastruktur	PT-SMI	4,344	Lower-Middle	2009	AA
France	Agence France Locale	AFL	3,623	High	2013	AA
Ecuador	Banco de Desarrollo del Ecuador	BDE	2,371	Upper-Middle	2015	n.a.

Source: AFD database (2020a)

Most national PDBs included as case studies have relatively good international ratings. This indicates a strong financial position and a capacity to mobilise finance in general, and for water specifically, from multiple sources. Credit rating data is, however, not available for all of them.

National PDBs in the cases studies represent a mix of young and old institutions. CDC (France) and CDP (Italy) are the oldest ones, with operations dating back to the late nineteenth century. At the opposite end, BNB (Brazil) and AFL (France) have only been in operation since 2015 and 2013 respectively. Such young institutions may face the constraints of limited liquidity, product offering and credit lines as well as limited market knowledge and experience. By contrast, older institutions have strong ties with their client base and can have a stronger capacity to deploy new products.

3.2 WHAT IS THE EXTENT OF NATIONAL PDB INVOLVEMENT IN THE WATER SECTOR?

The case studies confirm that national PDBs are key players, both historically and currently, in financing water in the countries where they operate. Europe and Latin America and the Caribbean (LAC) have very active PDBs in the sector. They channel finance directly to water sector investors, local governments, public utilities and projects operated by public and private operators. They also play a role in attracting private investors through project structuring support and co-financing for project finance and blended finance vehicles.

While fewer in number, some countries in other regions also have national PDBs that finance water-related investments.

The sub-sectors to which most of the financing goes depend on the historical mandate of the national PDBs and the level of development or maturity of the water sector.

The national and regional PDBs included in this study have a strong focus on financing sanitation and water supply services. PDBs predominantly fund sewerage and wastewater treatment expansion as well as large water treatment and desalination works. They are involved to a much lesser extent in water resources management, including stormwater and flood management.

Ecosystem and biodiversity protection does not seem to be areas of investment of national PDBs in the sector. Rather, biodiversity protection is usually considered through a ‘do no harm’ lens or as a positive side-effect of investments (e.g. in wastewater treatment).

The extent to which PDBs are engaged in providing water-related financing can be measured in two ways.

- **Water-related investments as a percentage of the PDBs’ overall portfolio.** Though comparative figures are not always available, this ranges from a few percent up to 37% (BDE - Ecuador). The relative size is as much a result of a PDB’s historical and current mandate, as a reflection of the demand. Water sector investments in a broad sense represent on average between 5% and 15% of PDBs’ portfolios.

- **PDB financing as percentage of all investment flows in the water sector.** This number is available only for two countries (Brazil and the Netherlands) and is estimated to be around 10%. In both these countries, tariffs are the main source of finance for the sector and are used by local governments and utilities for ‘regular’ investments, such as the gradual expansion of services. Tariffs also represent the revenue flow against which local governments and utilities can take on loans. Public finance is a key financial flow for investments in the water sector, particularly for investments in low-income areas or where the municipalities and utilities are small.

There is very limited overall data available on the absolute amounts invested by or the size of investments of PDBs in the water sector compared to other sources of financing and funding for the sector.

3.3 WHAT IS THE NATURE OF NATIONAL PDB INVOLVEMENT IN THE WATER SECTOR?

Based on the case studies (Annex 1), the nature of national PDBs involvement in the water sector includes one or more of the following.

- Providing credit for infrastructure investments in different forms: 1) balance sheet credit; 2) credit to local governments and utilities for specific investments; 3) project finance, usually directed to private sector entities, which may set up dedicated Special Purpose Vehicles (SPVs). This is the core set of financial products of all PDBs reviewed in this study.
- Structuring project finance – including co-financing mechanisms and private-public partnerships (PPPs) for the operation of water and sanitation services. Whereas the previous point refers to credit provision, technical assistance is often involved in structuring the financing and co-financing of more complex investments.
- Project preparation, either grant-funded or through loans that are repayable if the project preparation leads to a bankable project. The extent to which PDBs offer this service depends very much on the extent to which they have non-repayable funds available.
- Technical assistance (capacity strengthening) to utilities and local governments, oriented at their technical and financial performance improvement. This is done with the dual aim of making the utilities and local government more creditworthy, and of strengthening investment sustainability. While this service is considered very important, not all PDBs have the ability to provide it as it is usually funded through non-repayable finance.
- Influencing sector reforms and sector dialogue for improving regulatory frameworks and funding related studies. Only a few PDBs were involved in national level reforms.
- Channelling central government transfers to local governments and utilities (from taxes or sovereign loans). Only a few PDBs mentioned this role.
- Administering dedicated trust funds for the water sector. In some cases, these are trust funds set up at the request of national government or external financiers. The PDBs may or may not replenish these funds out of their own profits. This was mentioned by only two PDBs.

Loans are the main financial instruments deployed by PDBs in the water sector. Some of the ways in which PDBs use this type of financial instrument include the following.

- Through loans, national and regional PDBs:
  - finance investments, such as the major expansion of sewerage and treatment networks, potabilisation and desalination plants and sewerage treatment plants;
  - finance mid-sized towns and utilities which are more creditworthy than smaller municipalities and rural areas, but are not able to negotiate favourable loans directly with IFIs or commercial banks. In several countries (e.g. Ecuador, Philippines, Brazil), larger utilities can obtain loans from commercial banks or IFIs on more favourable conditions, while smaller municipalities and their utilities are not creditworthy at all, not even for PDBs.
- PDBs can channel sovereign loans from IFIs to smaller municipalities and utilities.
- PDBs can finance climate change adaptation investments with financing sourced from climate funds, given that few PDBs are accredited to manage such funds.
- In cases where both the financial markets and the water sector are mature, PDBs also support utilities to access international capital markets through bond issuance.

Whilst PDBs have the mandate to address climate change – and some do access international funds for this purpose ¬– water is either not yet seen as a key priority area in this regard, or is incipient. The link between climate adaptation and mitigation finance for the water sector is not clear for PDBs who allocate funds to more 'classic' renewable energy projects. For example, BDE (Ecuador) is in the process of being accredited to source climate funds. It is seeking to use these in the water sector, but is still identifying how adaptation projects need to be formulated and defined in the water sector.

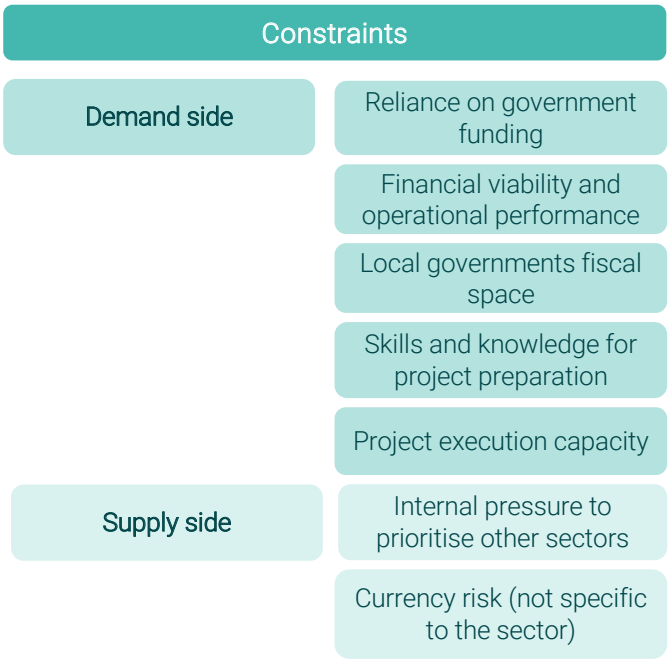
In middle-income countries such as Turkey, South Africa, Brazil and Mexico, PDBs play a critical role early on in the project preparation stage. Not only are PDBs proactive in generating demand for water projects, but they can also finance feasibility studies or small pilot projects that can be replicated at scale. Sector expertise and knowledge acquired by PDBs enable them to support the implementation of large-scale water projects through to completion. These PDBs have dedicated technical departments with water specialists.

From the sample in this study and interviews, it appears that the main segment that PDBs cater for are intermediate water utilities. In several countries (e.g. Brazil, Philippines), experts commented that larger utilities can get loans from commercial banks or IFIs at more favourable conditions, whereas smaller utilities are not creditworthy at all, not even for PDBs.

3.4 WHAT ARE THE CONSTRAINTS FOR NATIONAL PDBS INVOLVEMENT IN THE WATER SECTOR?

Constraints have been identified from the demand side of finance from PDBs to the water sector and from the supply side, on the availability of finance (Figure 5).

Figure 5: Summary of constraints for national PDB involvement in the water sector



On the demand side

In some countries, national PDBs' role in the water sector is only now emerging given the historical reliance of utilities and municipalities on central and/or local government funding. This is the case for Indonesia, Morocco, Southern Africa and others. In these countries/regions, until recently the bulk of water sector investments was mobilised via national and/or local government funding and IFI financing, which has limited PDBs' opportunities. Historical reliance on central government funding has also made the water sector a lesser priority investment area, therefore inhibiting demand. In Indonesia, for example, PT SMI has not requested financing for water projects through its public finance facility.

'Demand for water sector financing is relative – if we have a higher level of projects there will be other projects and collaboration as the portfolio grows – but someone needs to start' – National PDB

There are many risks related to the financial and operational performance of municipalities and utilities. Lower middle-income countries' PDBs face additional constraints which limit their involvement in the water sector. Many countries do not have cost-reflective water and sanitation services tariffs, nor a regulatory framework to enforce such tariffs, whilst also facing service provision inefficiencies (e.g. poor revenue collection, high non-revenue water). This is the case in Mexico. This means the revenue flow to repay loans is seen as insufficient. For that reason, some PDBs have dedicated financing and programmes to improve the performance of utilities and municipalities as prospective borrowers. This is not the case in all countries. In high-income countries, the water sector is seen as low risk, exactly because there are frameworks in place that ensure a stable revenue flow from tariffs.

Most countries set limits on local government debt or spending in the sector through fiscal discipline legislation (also known as fiscal space). Several PDBs note strict caps on local government debt as one of the factors affecting investments in the water sector. This particularly affects smaller municipalities which typically have lower revenue flows to take on debt.

Limited skills, knowledge, data and studies in the sector, combined with the limited capacity of utilities/ municipalities to formulate projects, mean that it can take three to five years for projects to originate and source financing. To address this constraint, several PDBs have dedicated financing to project preparation.

Limited capacity for project execution. Borrowers also need to have the capacity to execute projects and have processes in place for tendering, contracting, procurement, supervision of works etc. This capacity may differ among borrowers. Generally, smaller municipalities and utilities have less capacity than mid-sized and larger utilities. For that reason, PDBs do not only finance the investment, but also provide technical assistance in execution where needed. Where the borrowers have the capacity – for example in the Netherlands – the role of the PDB is limited to providing finance.

On the supply side

There is internal pressure to prioritise sectors in which investing is easier and more profitable (e.g. energy and transport). Whilst national PDBs have the mandate to implement government policy and take on risks, they also need to balance their books. This means that they can be less proactive at sourcing projects in sectors deemed riskier, such as water, or with which are they less familiar. Several interviewees commented on the fragmented and decentralised nature of the water sector, with roles spread among utilities and local government. This makes it more difficult to finance than sectors that are more centralised and concentrated in fewer institutions. PDBs are also aware of the strong political influence in the water sector in their countries and question the financial security of water providers and water projects.

Currency risk was not mentioned as a major constraint and it is not specific to the water sector. However, it is a limitation mentioned by some of the PDBs. There is always currency risk for PDBs that get finance from external sources in a foreign currency. Some IFIs offset this risk by lending in the local currency, but most of the currency risk is managed by PDBs and their SWAP teams.

Box 4 provides additional insights into factors limiting PDBs' involvement in water.

Box 4: Potential factors limiting PDBs' involvement in water

PDB involvement in the water sector is almost non-existent in some countries. Interviews carried out in these countries mentioned the following contributing factors.

- Water sector market structure: in many countries, central government is still actively involved in planning and directly funding investments, even though local governments have been devolved the responsibility for the sector. As a result, the market for PDBs in that sector is non-existent. This is the case in Egypt, for example, where water security is a key strategic investment area for the national government. In these contexts, private sector investments are also limited.
- PDBs' financial position and credit rating: PDBs with a weak financial position and low credit rating are not in a good position to attract investments and therefore have less liquidity, limiting their ability to expand to sectors which they are not traditionally familiar with.
- Weak environmental regulations: sanitation investments, such as for the improvement of wastewater discharged by industries, are potentially low-hanging fruit for PDBs already familiar with these industries. However, in contexts of weak environmental regulations, incentives to carry out such investments are also weak, implying limited opportunities in this area.
- Water sector risks: water projects' financial viability is a concern for PDBs where tariffs do not reflect the costs of the services provided.

3.5 WHAT ARE THE DRIVERS FOR NATIONAL PDB INVOLVEMENT IN THE WATER SECTOR?

The case studies (Annex 1) highlight some 'success factors' or drivers behind PDBs' active role in water. The most critical factors are discussed in this section.

PDBs need a clear mandate in the water sector and the financial means to implement this mandate. This means that water needs to be a key strategic objective, and that there needs to be allocation of financial and human resources to support and develop projects in the water sector. Caisse des Dépôts (France) and DBSA (South Africa) have, for example, dedicated financial products to the sector. Caisse des Dépôts' Aqua Prêt has been allocated an envelope of EUR billion 2 to be spent by the end of 2022. DBSA approaches water programmatically with a clear policy objective and a matching financial envelope.

If they are to play an active role in water, PDBs need to develop sector expertise. This expertise includes the type of financial products appropriate to the sector and how to generate demand for and build portfolios on bankable projects. This needs to be done across all branches of the PDBs and institutionalised through standardised approaches and procedures. Several of the revised PDBs in Latin America have sector experts among their staff and/or dedicated units responsible for water projects.

The PDBs most involved in the water sector mentioned other relevant drivers. One of these is that PDBs involved in the water sector have a strong relationship with their client's base and contribute to improvements in the water sector. Some PDBs offer financial products either tied to operational performance conditionalities (i.e. Caisse des Dépôts' Aqua Prêt, France) or which specifically target improvements in service efficiency (i.e. DBSA's non-revenue water programme, South Africa).

Some PDBs are actively engaged in national dialogues on policy or regulatory reform. PDBs offer their perspectives on financial products, policy and regulatory constraints and project viability and can ultimately help tailor solutions, including the development of national programmes for water (i.e. Caisse des Dépôts in France, BNDES in Brazil, BANOBRAS in Mexico and DBSA in South Africa).

Some PDBs are attracting private sector finance. PDBs are taking on the risks of early-stage project preparation (PT SMI, Indonesia), but are also providing credit enhancement products (e.g. guarantees) to facilitate access to commercial finance (DBSA, South Africa).

In general, the difference of PDB financing as opposed to that of domestic private banks concerns the conditions offered and the non-financial instruments made available by national PDBs. Technical assistance to local governments and utilities is an added value, as are the conditions for loan repayment. One of the most relevant aspects to the water sector is that PDBs are instrumental in implementing multi-sector projects that are cross-subsidising in nature. This allows for the mutualisation of risk between lower (larger utilities) and higher credit risk borrowers (smaller municipalities), and lower and higher risk sectors too, enabling smaller borrowers to access more favourable conditions.

The other relevant aspect of PDB compared to commercial bank financing is that national PDBs use government and donor grants, concessional loans from IFIs and in some cases commercial loans from the local banking sector (blended finance). Moreover, they use specific funding tools such as revolving funds for this purpose. The blending is not aimed only at increasing financial resources to the sector but also lowering the interest rates of loans to the local government and utilities.

4. IFIS FINANCE TO THE WATER SECTOR THROUGH NATIONAL PDBS

This section draws on interviews with 16 of the largest multilateral international and regional development banks to cover regional representation (Table 5). The total assets of these 16 banks amount to 18.6% of the assets of all PDBs (AFD, 2020a). Representation from Asia is weak in the sample as the research team had difficulties in establishing contacts.

The institutions covered in the study include:

- bilateral development financial institutions focused at global level: KfW, AFD;
- multilateral banks focused at global or continental scale. These have always had a very broad multi-sectoral mandate: IDA/WB, AfDB, ADB, IsDB, EIB, IBRD, EBRD, CAF;
- sub-regional banks that historically have a broad multi-sectoral mandate: CABEI, BOAD, CEB;
- sub-regional and binational banks with historically specific geographical or sectoral mandates: FONPLATA and NADB.

Table 5: List of IFIs interviewed for the study (organised by assets)

Region	Bank	Acronym	Assets (mln US$)
Western Europe	European Investment Bank	EIB	636,687
Western Europe	Kreditanstalt für Wiederaufbau	KfW	560,899
Multi	International Bank for Reconstruction and Development	IBRD	403,056
Multi	International Development Association/World Bank	IDA/WB	201,591
Multi	Asian Development Bank	AsDB	191,860
Latin America	Inter-American Development Bank	IADB	129,459
Western Europe	European Bank for Reconstruction and Development	EBRD	70,853
Western Europe	Agence Française de Développement	AFD	49,107
Multi	African Development Bank	BAD	46,960
Latin America	Banco de Desarrollo de América Latina	CAF	40,014
Western Asia	Islamic Development Bank	IsDB	30,658
Western Europe	Council of Europe Development Bank	CEB	27,892
Latin America	Banco Centroamericano de Integración Económica	CABEI	10,850
Western Africa	Banque de Développement des Etats de l'Afrique de l'Ouest	BOAD	4,485
North America	North-American Development Bank	NADB	1,959
Latin America	Fondo Financiero para el Desarrollo de la Cuenca del Plata	FONPLATA	1,043

Source: AFD database (2020a)

IFIs investments through PDBs in the water sector are not widespread. The channels of IFI financing to the water sector depend on how the water sector is structured. In many developing countries where the central government continues to play an important role in water sector funding, IFIs typically provide sovereign loans to a central ministry of finance, which then passes them on as grant/loans to line ministries and/or utilities and local governments. In other countries, where decentralisation is effective, some IFIs also provide sub-sovereign loans directly, typically to metropolitan utilities, local government and specific projects.

IFIs' financing for water through PDBs is conditional on the presence of national PDBs in the first place, and whether they have a clear mandate for water. Some countries either have no national PDB in place or only nascent PDBs. Some sub-regional IFIs operate in countries where there are no domestic PDBs. In these cases, IFIs provide loans directly to local governments or utilities. For example, none of the borrowing member countries of the Central American Bank for Economic Integration (CABEI) have national PDBs that are involved in water. This also applies to most of the member countries of Fondo Financiero para el Desarrollo de la Cuenca del Plata (FONPLATA).

IFIs that provide loans to national PDBs for the water sector do so for on-lending to municipalities and service providers. Lending can be earmarked for water or for multiple-purpose municipal projects. The rationale for financing through PDBs is that they are able to reach a broader geographical scope and therefore reach more beneficiaries than IFIs would. National PDBs can also target smaller municipalities and utilities, extending smaller loans while IFIs often cannot extend loans below a certain amount. National PDBs can also provide credit lines in the local currency, which is often a limitation for IFIs.

Water sector loans provided through national PDBs are larger than other loans to the sector, with IFIs being able to shift most of the lending risks to PDBs (often backed by sovereign guarantees). PDBs manage the currency risk since most of the water projects are financed in local currencies while the IFIs mostly finance in hard currencies.

Investing in the water sector through national PDBs gives value for money to IFIs in terms of outcomes achieved relative to the size of the loans they provide. By working with national PDBs, IFIs also put less time and resources into water project preparation. In these cases, IFIs work upstream with finance institutions and regulators and not directly with municipalities or service providers. It is then national PDBs that take on the responsibility for project preparation and ensure that all sub-projects comply with IFI standards and procedures.

National PDBs are also a good solution for investments in the sector when IFIs do not have local offices. National PDBs can actively contribute to project origination, preparation and monitoring on behalf of IFIs. Additionally, the collaboration with PDBs contributes to capacity reinforcement and increases the autonomy of the countries' financial systems in terms of processes and international standards – which then benefits many other sectors.

From a national PDB perspective, working with IFIs also has benefits. IFIs often have a good credit rating, and can therefore attract capital at interesting rates, which allows national PDBs to on-lend at lower rates. Other attractive benefits include the potentially large size and long tenure of IFI finance, and that PDBs co-finance larger and complex projects with IFIs.

However, in some contexts, national PDBs have access to cheaper finance from local markets. This is the case in some LAC and Asian countries (e.g. Brazil, Philippines) where local capital markets are well developed. The combined effect of IFIs lending procedures and conditionalities (which represent opportunity costs for national PDBs), and currency risks can incentivise PDBs to seek finance locally, even though size and tenure may be smaller.

5. CONCLUSIONS

The main hypothesis of the study was confirmed: namely that PDBs are underused in the sector and that there is a potential to further enhance their role.

National PDBs can play an important role in achieving both the SDG 6 targets and the water-related Paris Agreement goals. Globally, PDBs are key players in financing investment, with PDB financing representing 8% to 10% of global investments. There is little financial data on the extent of financing for water channelled through PDBs, but there is historic evidence of the role PDBs have played and continue to play in supporting water sector development at scale in some countries. In addition, current experience points to a well-established role for national PDBs in the water sector in certain regions such as Europe and LAC.

National PDBs provide a unique range of financial instruments and services. This study confirmed different types of PDB loans for infrastructure investments. PDBs are able to provide these at better terms and conditions than commercial banks, particularly to mid-sized utilities and local governments that have a reasonable level of financial performance and capacity to formulate and execute projects. In addition, they provide a range of services for project preparation, performance improvement and technical operational support. They are also able to structure and provide co-finance mechanisms with commercial banks and IFIs. These advantages have enabled them to cater to both financial and technical gaps in the sector, at least in certain segments.

Considering the large financing needs of the water sector, there is room for both national PDBs and IFI finance. The study identifies opportunities for IFIs to collaborate with PDBs to reach broader water sector development outcomes. In turn, IFIs' expertise, particularly on project appraisal, can help build PDBs' capacities. This is particularly needed for boosting investments in ecosystem and biodiversity protection.

There is also room for both commercial finance and PDB finance. As discussed, the products and services offered are different. PDBs, for example, can extend a range of technical assistance services and some also extend long maturity loans. There is also some evidence that PDBs can play an active role in mobilising private capital for water. They support the project preparation process – and take on very early stage risks – and assist with financial transactions and bond structuring/issuance. More research in this area is needed to better understand the role PDBs can play in mobilising private capital for the sector.

There are still many countries where national PDBs either do not have a mandate in the sector or only have a nascent/limited role, indicating an untapped opportunity for increasing finance for water. A number of key factors such as a clear mandate with financial allocation and in-house water sector expertise are determinant in enhancing their engagement in the sector.

Finally, national PDBs are well-placed to address some of the wider challenges in the water sector which limit finance mobilisation. They can provide technical assistance and non-repayable finance for programmes focused on improving the performance and enhancing the creditworthiness of utilities and local governments. They can also be involved in project preparation and support the dialogue on tariffs and cost-recovery. As public institutions, PDBs are well-placed to engage in dialogue and can bring compelling evidence for investing in the sector through their financial and technical expertise.

6. RECOMMENDATIONS: HOW CAN NATIONAL PDBS BE SUPPORTED TO ENHANCE THEIR OPERATIONS IN THE WATER SECTOR?

Given the potential of PDBs in mobilising finance for water, the main recommendations to increase the supply of PDBs' finance to the sector are for governments and IFIs to strengthen PDBs' capacity to prepare and appraise water sector projects, and to allocate financing and funding earmarked for water investments to PDBs. At the same time, boosting PDBs' engagement requires supporting demand creation for water financing and addressing water sector inefficiencies and constraints.

In order to operationalise these broad recommendations, this section presents specific recommendations for 1) national PDBs, 2) governments, and 3) IFIs. The recommendations are based on examples of measures already being taken or considered by these actors in the various case studies in order to address constraints. This makes us believe that these recommendations are both realistic and actionable. An overview of the constraints, measures to address them, and specific recommendations for the three groups of actors are presented in Figure 6 and are further elaborated below. In addition, we provide recommendations for further research.

Figure 6: Overview of constraints, measures and recommendations

Constraints		Measures	Recommendations		
			For national PDBs	For Governments	For IFIs
Demand side	Reliance on government funding	Finance strategies / regulation that target role of PDBs	Contribute to policy dialogues in the water sector and support the development of finance strategies	Develop finance strategies that target public finance to utilities / municipalities that most need them	Support policy dialogues and finance strategies for the sector that include explicitly PDBs Provide TA to pre-project identification and advocacy
	Skills and knowledge for project preparation	Skills development and dedicated funds for project preparation	Develop sector expertise / Make more use of South-south cooperation (I.e. staff exchanges and secondments) Support smaller projects and standardisation of processes	Pro actively engage PDBs technical staff in relevant sector finance meetings	Strengthen/ support PDBs capacities and skills in the water sector
	Local governments fiscal space	Evidence on economic and social returns	Clearly articulate the specific contributions they make to the SDGs and climate-related targets through their investments	Develop a climate narrative for the sector finance strategies	Proactively discuss water sector projects within a climate narrative with PDBs Increase cooperation between climate/environmental and water departments
	Financial viability and operational performance	Dedicated financing and programmes to improve performance	Support consultations with national and local gov can lift some of the barriers to creditworthiness	Develop and enforce water sector regulations to enhance (financial) performance of utilities.	Ensure that grants, concessional finance and TA provided to overcome the constraints in project preparation, utility performance and technical support Provide TA to project implementation
	Project execution capacity	TA for project execution			
Supply side	Internal pressure to prioritise other sectors	Dedicated mandate and funds for the sector	Establish dedicated windows or programmes for 1) project preparation, 2) utility performance improvement, and 3) technical support in project execution	Provide public finance for: 1) project preparation, and 2) utility performance improvement	Pilot operations where IFIs/PDBs co-finance a water project Support smaller projects and standardisation of processes
	Currency risk	Lending in local currency	Recognise the opportunities of the water sector	Political leadership for guiding PDBs mandate in the water sector	Channel funds specifically for water sector investments through PDBs (in local currency)

6.1 RECOMMENDATIONS FOR NATIONAL PDBS

This section presents recommendations for two groups of PDBs: 1) PDBs that are already involved in the water sector, but seek to enhance their role; and, 2) PDBs whose mandate includes the water sector, but who are currently not, or only to a very limited extent, providing finance to that sector.

PDBs that are investing in the water sector and seek to enhance that role should focus on: 1) contributing to sector processes to remove demand-side constraints; 2) take actions within their power to alleviate demand-side constraints; and, 3) increase supply-side measures. Specifically, this study recommends these PDBs do the following.

- Contribute to policy dialogues on sector financing strategies. Such strategies should then clarify which segments of the water sector and which type of investments should be financed by PDBs, and how this finance is interrelated with other funding flows.
- Support consultations with clients (particularly local governments) and sector organisations to help lift some of the important barriers to project bankability. PDBs are uniquely placed to highlight where project viability is threatened by low tariffs, poor performance of utilities and other demand-side constraints. Moreover, PDBs can provide evidence from across projects to sector dialogues so as to advocate for structural measures to address the barriers at sector level.
- Adopt a programmatic approach (including standardisation of projects and contracts) and finance water projects with different risk levels. A multi-project approach also allows PDBs to target weaker or less attractive municipalities/utilities – often the poorest – with risks balanced across the portfolio.
- Articulate an approach towards mitigation and adaptation in the water sector. PDBs need to be more proactive in placing water and sanitation within a climate narrative. They face ongoing constraints in accessing concessional resources for water sector from adaptation and mitigation funds. PDBs can provide evidence and narratives on how water projects can address adaptation needs and contribute to mitigation. This will require interdepartmental conversations to collaborate more, have standard approaches to the sector to access climate funds and start taking measures to reduce the time that it takes for climate funds to be approved.

"If we want to stay relevant, our added value is in the innovation and in the enabling work upstream. To become a knowledge bank, to promote coordination between different MDBs." – MDB water sector

PDBs that have the mandate but are not, or only to a limited extent, investing in the water sector are recommended to: 1) ensure that the water sector is seen as a sector of opportunities in the internal strategy of the PDB; and, 2) develop the capacity to finance water sector investments. Specifically, this study recommends these PDBs do the following.

- Recognise and map the specific needs and opportunities of the water sector. Financing needs exist across the sector, from water to sanitation, and across geographical settings. PDBs' expertise in project origination and preparation is particularly relevant for a sector facing a dearth of bankable projects. But it requires the PDBs to map where specific opportunities lie for them.
- Articulate the contributions that financing water investments can make to SDG and climate-related targets. In order to convince the highest authorities of PDBs, as well as the main investors of the PDB, it is important to articulate how investments in water can contribute to the SDG targets and climate-related targets. Water is at the forefront of climate change adaptation and mitigation, whilst water and sanitation services represent important social sectors.
- Establish dedicated windows or programmes for: 1) project preparation; 2) utility performance improvement; and/or 3) technical support in project execution. Where the water sector has been traditionally and historically financed through central governments and IFIs, PDBs need to be proactive in sourcing projects. Dedicated project preparation windows or programmes are a proven mechanism for project sourcing. Windows or programmes for utility performance improvement and technical support in project execution are also relevant to ensure that prospective borrowers are able to take on credit and execute projects adequately.

- Develop internal sector expertise, including through South-South cooperation. This means building up internal capacity and knowledge about the water sector, about public-private partnerships and consulting with potential clients in designing adequate products. PDBs need to allocate resources for building their internal capacity to source, manage and support water projects. This means recruiting dedicated staff, providing training where necessary, and making more use of South-South cooperation. PDBs have a lot to learn from each other and knowledge sharing can be facilitated. This is highly effective and similar to South-South Water Operator Partnerships which have been invaluable for capacity building in water utilities.

6.2 RECOMMENDATIONS FOR GOVERNMENTS

The following recommendations are directed at national government entities, such as water sector line ministries and agencies, water sector regulators, and ministries and regulators in charge of finance. This study recommends them to do the following.

Enable PDB financing in the water sector. This involves creating the enabling policy and strategy framework for PDB financing in the water sector. This is recommended to be done by taking the following three steps.

- Formulate sector financing strategies and define PDBs' roles in them. Case studies indicate that certain segments of the sector – mostly large and medium sized towns and their water service providers – are able to access repayable finance from PDBs to make investments. That potentially frees up non-repayable public finance for investments in harder to reach areas such as rural areas and poorer urban settlements. Sector institutions therefore need to develop overall sector finance strategies so that further clarity is shed on where repayable finance from PDBs can play a role, and where non-repayable finance is needed.
- Engage PDB staff in sector finance strategies. In developing these strategies, it is key to include the insights from PDBs so that specific constraints can be understood and addressed.
- Provide political leadership for guiding PDB mandates in the water sector. Where PDBs have historically not been involved in the water sector, there may be a certain hesitance. Furthermore, in some countries there may be resistance to using debt for financing the water sector. In these cases, governments need to provide political leadership in defining where PDB mandates in investing in the sector lie, and how they complement other sources of funding.

Strengthen PDBs' capacity to engage in, and provide finance for, the water sector. Once the enabling policy and strategy framework is in place, more direct support should be provided to PDBs so they have the technical and financial capacity. This could be done by taking the following measures.

- Allocate public funds to initiate PDB water sector investments. Where PDBs face funding constraints (e.g. limited access to financial markets), governments should consider allocating funds for PDBs to develop water sector products. A dedicated envelope for water may in turn encourage PDBs to be more proactive in sourcing water projects. This thus entails an upfront investment.
- Start with small projects as a basis for standardising processes. Where PDBs are new to the water sector, it is recommended to start small (projects of US$ 1 million) and have flexible instruments that can grow and develop over time while capacities are being built and relationships being developed. This also allows PDBs to be equipped with standardised approaches in terms of aspects such as feasibility studies, procurement, and environmental impact assessments.
- Have flows of non-repayable finance for certain segments and/or co-financing. Certain segments of the water sector will not be ready to take on repayable finance in the foreseeable future, particularly the rural and small-town subsector or some of the poorest municipalities. Governments can serve them by channelling part of public finance flows through PDBs, either as a full grant or as co-finance to loans. This will not only mean that this segment will get access to finance, it will also strengthen the capacity of the PDB in managing water sector projects and engaging with prospective clients. Moreover, public finance should go to those activities that are more difficult to finance from loans, such as project preparation and utility performance improvement.

Address water sector inefficiencies and constraints by supporting regulatory and sector reforms. PDB finance is not a solution to water sector inefficiencies. Rather, efficient and well-performing institutions are a condition for PDBs to engage in financing the sector. Governments can do this in different ways, including the following.

- Develop policy and regulatory measures to improve the efficiency and performance of water sector institutions. This is usually the domain of sector regulatory bodies and include performance monitoring and benchmarking; establishing penalties, incentives and enforcement mechanisms; and developing tariff regulation.
- Develop regulatory measures that incentivise investment and enable private investments. Particularly where municipal governments face commercial borrowing constraints, private investments should be enabled. This not only entails addressing tariff issues, but also the legal framework (contracts, procurement procedures). Through implementing new legislation in the water sector, Brazil will provide important learning opportunities throughout 2021/22.

6.3 RECOMMENDATIONS FOR IFIS

This research has identified two groups of recommendations for IFIs.

The first group is essentially to support PDBs and governments to implement the recommendations mentioned above, for as far as it is within their power and mandate. This includes:

- supporting the policy dialogues around sector finance strategies that include defining the role of PDBs;
- supporting evidence and narrative creation on the nexus between the water sector and climate change adaptation and mitigation; and,
- supporting capacity building of PDBs in the water sector, including by facilitating South-South cooperation.
- The second group of recommendations revolves around how IFIs can direct their financing to the water sector in collaboration with PDBs. The specific recommendations are:
- to channel loans via PDBs, particularly when PDBs are relatively new to the water sector. This would allow PDBs to become more familiar with the sector and build up the necessary technical expertise;
- to provide grants, concessional finance and technical assistance to overcome a number of water sector related constraints. Where concessional finance and grants are deployed, they are best used for those investments that are normally more difficult to finance through loans. That would specifically include the following investments: pre-project identification, project preparation, utility performance improvement and technical support to project execution;
- to co-finance larger investment projects with PDBs. PDBs and IFIs have their own strengths and weaknesses. Co-financing certain investment projects, particularly the larger ones, draws on the specific strengths of both parties; and,
- to channel funds for water sector investments through PDBs in the local currency. Though currency risks are not specific to the water sector, they still need to be taken on by the PDB. Using local currency lending can reduce the risks to the PDB.

6.4 RECOMMENDATIONS FOR FURTHER RESEARCH

The findings of the study also raise additional questions. This section lists important gaps that this report did not address or did not find detailed answers to, and that it recommends being taken up in either country-specific research or more global research.

Research into measures to increase PDBs' involvement in the water sector in specific countries.

While the research identified generic trends in the extent, constraints and opportunities for PDB involvement in the water sector, the measures that can be taken will differ between countries. The research questions below should guide country-specific research.

- What is the relative size of PDB investment in the water sector compared to other sources of funding?
- What are the specific niches or segments in the water sector where PDBs have a competitive advantage in providing finance?
- What is an approximate maximum expected market share for PDB finance in the water sector?
- What are the factors constraining the achievement of that market share?
- What specific internal factors enhance PDBs' capacity to invest in water?
- What specific activities should be carried out by PDBs to boost demand for financial services in the sector?
- Local authorities can create their own PDB by being its shareholder (eg. Agence France Locale, Kommuninvest in Sweden, KBN in Norway, MuniFin in Finland). Water utilities can either be part of these initiatives or can create their own mutual PDB (as is the case of NWB in the Netherlands). To what extent can this be reproduced in other countries? Are there benefits to local government/ utility owned PDBs for the water sector compared with central government owned PDBs?

Complementarities between PDBs and commercial banks in the water sector.

The research found complementarity between PDBs and IFIs. Some references were obtained, though only limited insights were obtained into the complementarity and competition between PDBs and commercial banks. To gain greater understanding of this, research should be undertaken, preferably in countries with reasonably mature financial markets for the water sector. The research questions below should guide this process.

- Can PDBs take more risk than commercial banks in the water sector, or should they simply offer more products and services?
- What instruments can PDBs deploy to facilitate commercial lending to the sector, such as credit enhancement products?
- In what areas do PDBs create the most added value?

Attractiveness of ecosystem and biodiversity protection for PDBs.

The research found that only a small amount of PDB financing in the water sector is specifically on ecosystem and biodiversity protection. Further research should focus on whether and how this can be made more attractive, and if so, under what conditions?

- What is the role of central government and IFIs in enhancing PDB investments in this area?
- What specific instruments are suitable for these kinds of investments?

This research could be carried out in association with national and regional PDBs. It could involve those that are already heavily involved in the water sector so as to highlight enabling factors, and those that are less involved so as to understand their needs and what governments and IFIs can do to address them.

PART 2
ANALYSIS

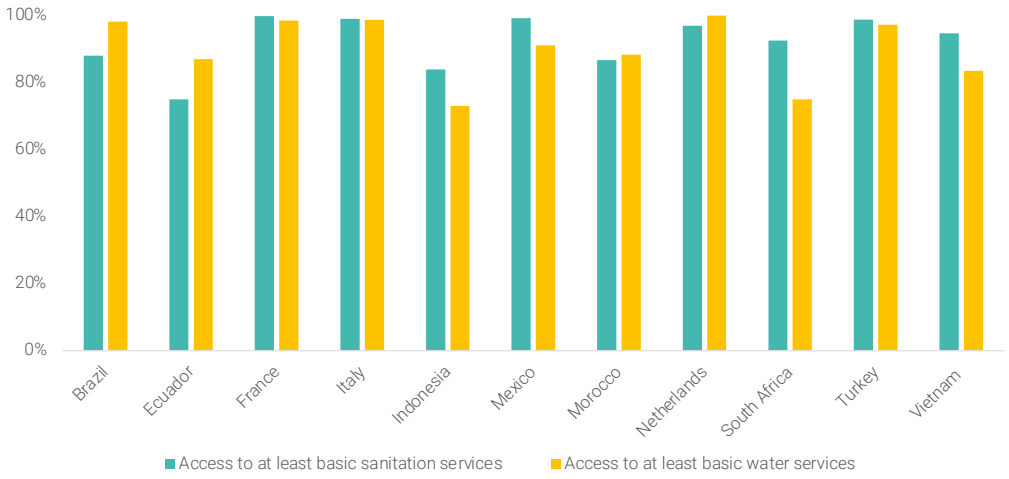
7. NATIONAL PDBS' RESPONSE TO WATER SECTOR CHALLENGES

This section takes a closer look at PDBs' activities in the sector, drawing on the case studies of selected PDBs (Annex 1).

7.1 PDBS WATER SECTOR CONTEXT

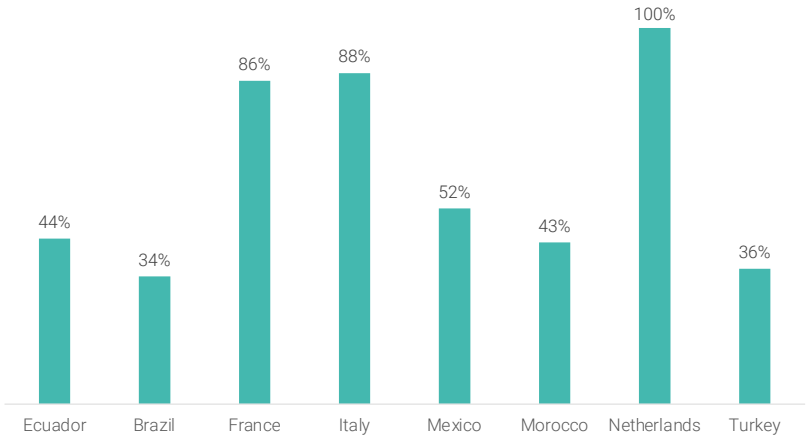
The countries from which PDBs have been selected face different as well as common, water sector challenges. These are all lower to middle and high-income countries where access to at least basic water and sanitation services is high. Some of the countries still need to extend access to water and sanitation services to reach SDG 6 (Figure 7), and almost all need to invest resources in adequate sewerage and wastewater treatment facilities (Figure 8).

Figure 7: Access to basic water and sanitation services (selected countries)



Source: WHO UNICEF (2019)

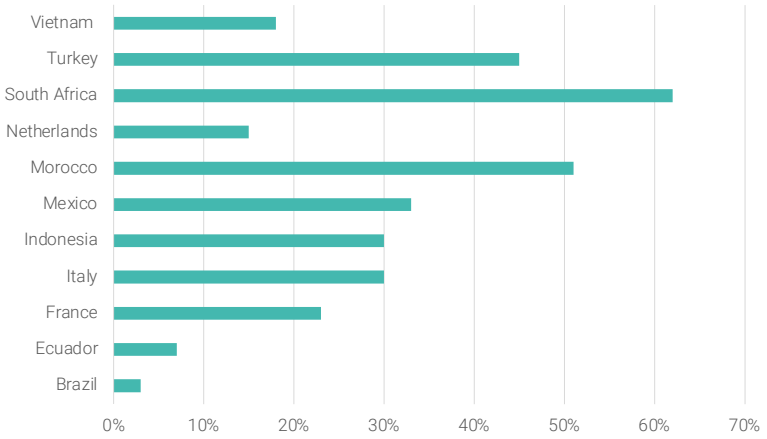
Figure 8: Percentage of wastewater treated services (selected countries)



Source: UN Water SDG 6 data (Note: data not available for Vietnam, South Africa and Indonesia)

Countries also face different levels of water stress, with some facing severe water shortages. South Africa, Morocco and Turkey present the most acute water stress level among the nine countries (Figure 9). However, all the countries face some degree of water stress which calls for a more efficient use of available water, including water loss reduction and pollution controls.

Figure 9: Water stress levels



Source: UN-Water

Note: The level of water stress is defined as the ratio between total freshwater withdrawals by all economic activities and total available freshwater resources, after taking into account environmental flow requirements. Environmental flow requirements are essential to maintaining ecosystem health and resilience.

With regards to institutions, most countries are highly decentralised, with responsibilities for water and sanitation devolved to local governments. This means that local governments have the responsibility to ensure service delivery in their areas of jurisdiction. They typically appoint or contract a service provider, in the form of a public or private utility. These utilities are responsible for operating and maintaining the infrastructure and administering the service. The responsibility for investments in expanding and improving the infrastructure is often shared between the local government and the utility, whereby a utility is typically responsible for the gradual expansion of its network and services, but a local government may contribute to the expansion or improvement of service levels.

Countries have different service delivery models. Many have large metropolitan utilities that serve the capital and other major cities. Others have regional service providers serving millions of customers (such as state level utilities in Brazil and Mexico), or provincial utilities (The Netherlands). In most countries, these utilities serve a large number of smaller municipal utilities, including rural municipalities or even direct service delivery by the municipality itself (i.e. through non-corporatised utilities). In some countries, utilities may further contract out certain processes.

There is a degree of private sector participation in water infrastructure management and financing, although to a limited extent. Private sector participation (including financing) is well-developed in France and Italy across the water management cycle. In other countries such as Brazil and Mexico, concessions are given to private companies mostly for certain parts of the water cycle, such as drinking water production or wastewater treatment. These types of contracts are also emerging in Vietnam, Morocco and Indonesia.

In all the countries, funding for the water sector comes from a mix of public finance and tariff revenues. Water and sanitation services delivery is financed according to the following broad lines.

- Development of infrastructure in areas where there are currently no services: this is generally done through public finance. This may be done by local government through the transfers they receive from the treasury or central government. In some cases, public funds (which may have been obtained as sovereign loans from IFIs) in the form of grants are channelled through PDBs (Ecuador).
- Expansion and improvement of existing water, sanitation and wastewater infrastructure: this is usually a shared responsibility between utilities, local governments and financiers. Utilities are

usually responsible for funding the gradual expansion of their networks out of the revenue they generate from tariffs. Utilities, central government, local government and financiers (whether PDBs or other lenders) need to join forces in investments that imply a step change in expansion or service levels.

- Operation, maintenance and capital maintenance: this is the responsibility of utilities for which they need to levy tariffs. In practice, tariff levels are too low in some countries to cover these costs. Local governments sometimes fill the gap by using their revenues (e.g. fiscal revenues or government transfers) to cover operational costs of utilities. Whether sufficient or not, it reduces the creditworthiness of the local government, as observed for example in Mexico.
- Development and uptake of innovative infrastructure and approaches: central governments, national agencies, IFIs and PDBs extend grants for boosting the uptake of technical innovations, whether for conducting studies, works (e.g. enhancing treatment capacity or bulk water quality) or social interventions – see for example Council of Europe Development Bank's (CEB) Green Social Investment Fund (Box 5).
- Capacity building investments – for example utility performance improvement programmes – are usually financed through public finance or by development partners.

Box 5: Council of Europe Development Bank's Green Social Investment Fund (GSIF)

The CEB established the GSIF in March 2020 to help accelerate its member countries' transition towards low carbon and climate resilient economies. It has been endowed with an initial contribution of € 5 million, allocated from the Bank's annual profit. CEB member countries have also been invited to provide grant contributions to the Fund. The Fund is used to:

- scale up the decarbonisation and climate proofing of social infrastructure; and
- make climate action measures more socially affordable and accessible to vulnerable groups.

It can finance technical assistance and investment grants for projects with high social benefits which enhance climate resilience and aim for climate neutrality. Projects must be aligned with the countries' commitments to Agenda 2030 for Sustainable Development and the Paris Agreement.

7.2 WHAT ARE THE MANDATES OF NATIONAL PDBS IN THE WATER SECTOR?

All PDBs included in the case studies have the explicit mandate to contribute to water sector development, but they do so in reference to different frameworks. Some strategic and business plans make explicit reference to SDG 6. For example, CDP (Italy) recognises the SDGs as a key area of focus in its role of promoting public infrastructure. Examples of national PDBs that explicitly refer to SDG 6 in their planning and reporting include NWB in the Netherlands and BNDES in Brazil. In other PDBs' reports, the SDGs are not referred to, but their mandate is given by national development priorities, such as BANOBRAS in Mexico.

Some PDBs sit at the heart of water policy development. This is clearly the case with Caisse des Dépôts (France) which helped shape French Government policy on water management in recent years (Box 6). Similarly, DBSA (South Africa) plays a critical role in sector dialogues and provides the rationale and data required for policy and regulatory changes where these are necessary. DBSA participates in sector initiatives such as the Government's Sustainable Infrastructure Development Symposium Technical Working Groups which supports public and private sector sponsors to create a pipeline of bankable projects.

Box 6: French national water consultations (Assises de l'Eau)

Caisse des Dépôts took part in the water sector national consultations (Assises de l'Eau) held from 2018-2019. Gathering local authorities and service providers as well as financial institutions, these consultations aimed to address the emerging issue of water quality and availability. A first phase, carried out from April to August 2018, dealt with public water and sanitation services. It resulted in new measures to strengthen the sustainability of water sector investments focused on water leakage reduction, in particular in rural areas, improving water services' quality and enhancing customers' trust in public utilities. A second phase, from November 2018 to July 2019, focused on water resources management particularly in water catchment, water sharing and preservation, and aquatic ecosystems' protection. Following on from the Assises de l'Eau, the French Government committed to provide additional resources and support to local communities, including through Caisse des Dépôts.

Source: www.ecologie.gouv.fr

In order to fulfil their mandates and contribute to policy implementation, PDBs have also set up dedicated business lines, departments or programmes for the water sector. Among these PDBs are Caisse des Dépôts (France), CDP (Italy), BNDES (Brazil) and DBSA (South Africa). Dedicated business lines take different forms, but at their heart lies specific sector expertise, which enables the institution to offer tailored and standardised approaches. Caisse des Dépôts (France) has set-up a dedicated product, the Aqua Prêt (Aqua Loan), which offers large and long-term loans for local authorities meeting certain conditions (see section 5.7). DBSA (South Africa) has set up dedicated water programmes (Box 7). BNDES (Brazil) has a dedicated department with specific lines of credit and non-reimbursable funds for social investments, which includes infrastructure in the water sector. For more details see Annex 1.

Box 7: DBSA water programmes in South Africa

DBSA (South Africa) works programmatically across sectors. The primary objective of the programme approach is to prepare projects, and facilitate and mobilise funding for the implementation of projects at scale. Each programme has different funding options, structures and solutions. The approach has multiple benefits, including:

- the ability to address complexities associated with infrastructure planning and delivery;
- providing customised funding solutions to support the implementation of a specific asset;
- a balanced portfolio and strong pipeline of projects in terms of risks profile, which is often more effective in attracting investment from the private sector.

A programmatic approach is enabled by centralised sector expertise. Programme specific management offices are in charge of project preparation, procurement, incorporating best practice, vetting new technologies, and monitoring and reporting on implementation.

DBSA is responding to the call to action in the National Water and Sanitation Master Plan and is designing a National Water Programme which comprises various sub-programmes including a:

- Non-revenue Water Programme;
- Water Reuse Programme; and
- Private Sector Participation Model.

These three programmes have been positioned as blended finance programmes under the Infrastructure Fund, a fund managed by DBSA aimed at attracting private sector investment in infrastructure in South Africa.

Source: DBSA

However, PDBs also operate within the water sector's policy and regulatory constraints. For example, over the course of project preparation, while a PDB can advise that tariffs should be increased for a project to be viable, local governments retain authority over this. Similarly, PDBs may advise the government to accelerate the involvement of private operators and investors, but they have little influence over the pace of sector reforms (see for example the BNDES case study).

7.3 WHAT DO NATIONAL PDBS FINANCE IN THE WATER SECTOR?

Most water sector projects benefiting from PDB finance relate to water and sanitation infrastructure development. In high-income countries such as France and Italy, ageing infrastructure calls for investment to reduce water and sanitation services inefficiencies and keep up service levels. Flood protection is also a major area of investment. In middle-income countries, the focus of PDBs is both on services extension (as in Turkey with IIBank and Brazil with BNDES) and on making supporting services more efficient through dedicated loan programmes for Non-Revenue Water (NRW) reduction, as offered by DBSA (South Africa). In the Latin American countries, most projects relate to large infrastructure components, such as desalinisation and wastewater treatment plants.

PDBs' investments appear to benefit both urban and rural areas. Discussions with PDBs show that rural areas and smaller municipalities are also receiving finance and funding. For example, Caisse des Dépôts' Aqua Prêt benefits primarily rural municipalities. In Latin America, it is mainly the mid-sized cities and utilities that access finance from domestic PDBs. The large metropolitan utilities can obtain loans directly from IFIs, or even from commercial sources. The small municipal companies often lack the creditworthiness to access loans.

There were limited examples of water resources management financing. These are mostly projects that include source protection and catchment improvements. There are also examples of stormwater drainage and local flood protection. But these projects remain limited in the water portfolio. Water and sanitation make up 37% of the portfolio of loans of BDE in Ecuador, and water resources management was only 6%. The difficulty in financing water resources management services is that these activities do not have a clear revenue stream as these are usually funded by general municipal taxes and not ring-fenced tariffs.

Investments in water ecosystem protection and biodiversity, such as wetland restoration, appear limited to non-existent. Even in high-income countries, projects require incentive schemes for local governments to prioritise them. However, interviewees argued that by investing in wastewater treatment, important contributions are made to ecosystem restoration and environmental quality. However, ecosystems are not the driver behind these investments. The main arguments for these investments are made from a public health and sanitary perspective.

7.4 PRODUCTS AND SERVICES AVAILABLE FROM NATIONAL PDBS TO THE WATER SECTOR

Of investment products for water, long-term loans are the most readily available. All PDBs included in this review provide long-term loans, in the case of the Caisse des Dépôts, up to 60 years. This French institution is the only one reviewed that has developed a loan product dedicated to water, the Aqua Prêt or Aqua Loan (Box 8). Equity investments are not commonly used in the water sector.

Box 8: CDC's Aqua Prêt

Caisse des Dépôts' Aqua Prêt is granted under certain conditions related to water supply and sanitation asset management. Aqua Prêt loans are granted if prospective borrowers have carried out a diagnostic of their assets and have developed a five-year water investment strategy. The loan was introduced to improve the sustainability of water sector investments in line with government directives. Other key features of Aqua Prêt are that it:

- targets construction and rehabilitation of water and sanitation services, flood prevention and water ecosystems preservation projects;
- extends loans from 25 to 40 years, and up to 60 years for water and sanitation networks; and
- its interest rate for Livret A (national savings) is currently set at 0.5% per year (from February 2020) + 0.60% per year.

Source: Caisse des Dépôts

Most PDBs provide funding for project preparation, but do so as grant funding or as a component of the loan. In South Africa, DBSA boasts an integrated approach to infrastructure and water sector development. It intervenes across the infrastructure value chain, from the planning of projects up to maintaining and improving infrastructure performance. At planning and preparation levels, DBSA provides support in project identification and carries out feasibility assessments and financial structuring services. Others, such as BANOBRAS in Mexico also fund project preparation. It does this either through grant funding (which it in turn funds from its own profits) or as a highly concessional loan. In some cases, if the project preparation leads to a project that eventually gets financed, at least part of the project preparation costs are recovered through the loans.

Whilst some PDBs can provide grants for project preparation, others only provide funding as part of the loan package. This the case with Caisse des Dépôts (France). One rationale for subsidising project preparation is to work with borrowers to gradually build up bankable projects. DBSA in South Africa provides grants for the purchase and testing of equipment (e.g. bulk meters) to control NRW. If the approach is successful in one service area, it can be scaled-up to a wider service area.

Some PDBs provide funding for technical assistance for utility performance improvement. The latter is a key step in the project cycle as improving the performance of the utility or local government puts them in a better position to provide sustainable services. BANOBRAS provides grant funding for this purpose through its PMOOA programme. The PMOOA programme is not necessarily linked to BANOBRAS' credit programmes, but there is an implicit expectation that as utilities improve their performance – including financially – they make become more credit-worthy to take on loans.

Where Public Private Partnerships (PPP) are being sought, particularly for some of the large-scale investments in desalination or wastewater treatment, PDBs are well placed to take on project preparation risks. Project preparation carries the inherent risk that the project will not take-off and it thus requires intensive resources for carrying out technical and financial feasibility and consensus building among stakeholders. By taking on these early stage risks, PDBs can facilitate private sector participation. In Indonesia, PT SMI has been a key player in the preparation of large-scale PPP bulk water projects in recent years (Box 9). In Brazil, BNDES also plays a key role in structuring loans with public and private players, as does BANOBRAS in Mexico.

Box 9: PT SMI support to PPPs in Indonesia: the West Semarang Water Supply PPP project

PT SMI acts on behalf of the Government of Indonesia and its involvement in the water sector mainly relates to project preparation and advisory services in PPP schemes for bulk water supplies. The central government tasks PT SMI to assist in project preparation and the tendering of the PPP.

One such flagship project is the West Semarang Water Supply PPP project. The project enhances production access to drinking water and expands the service coverage of the Local Water Supply Utility (PDAM), while reducing land subsidence from excessive groundwater abstraction. The project is planning to provide output capacity of 1,000 litres per second to meet the clean water demand from one third of the population of Semarang City (300,000- 350,000 inhabitants) in five zones within the three districts of West Semarang, Ngaliyan, and Tugu. The Government Contracting Agency delivers the project under the Build Operate Transfer agreement. Under the PPP Scheme, the role of the private sector role is to: 1) build and operate a water treatment plant, transmission pipeline, main reservoir, and distribution reservoir; and, 2) operate and maintain these facilities and raw water unit facilities (intake) along with their related facilities. The total cost of the Project was estimated at IDR 1.19 trillion (~US$ 85 million) with the PPP scope amounting to IDR 417 billion (~ US$ 29.78 million). This includes the IDR 147 billion (~US$ 10.5 million) viability gap fund (VGF) provided by the Ministry of Finance. Private sector revenues are to come from the bulk water sales to PDAM. Besides fiscal support from the Ministry of Finance, the Indonesia Infrastructure Guarantee Fund, a state-owned enterprise (SOE) providing guarantee for contingent liabilities, also provided a guarantee to serve as credit enhancement for the implementing business entity or special purpose vehicle in the face of the PDAM's default risk. PT SMI, through its Project Development Facility, assisted the Semarang City PDAM in project preparation and transaction to reach financial close. The project financially closed in 2019, and the asset is targeted to start operating in May 2021. Due to prudent project preparation, PT SMI successfully increased the competition level by encouraging the winning bidders to limit their return in order to win the Project. This resulted in a VGF of IDR 0 (no VGF) and an additional tariff discount proposed by the winning bidder in the proposal, setting a precedent for PPP water projects in Indonesia (with no VGF and Tariff Discount). Aside from the VGF IDR 0, the Project is also considered as one of the fastest PPP Projects with a total duration of 19 months from official assignment to financial close.

Source: PT SMI

7.5 SIZE OF NATIONAL PDBS' INVESTMENTS IN WATER

Many PDBs are unable to disclose or disaggregate the size of water-related investments compared to their overall portfolio. Several factors account for this.

- PDBs do not specifically track water-related investments as these tend to fall within the wider infrastructure, social and environmental investment categories.
- PDBs lend to local governments according to the latter's balance sheets and not on a project-basis. This means that local governments can invest in water, but the information is not systematically shared with PDBs.
- Some PDBs will not share the information externally as it is considered confidential.

For the PDBs that did disclose the information or had figures available, water-related investments represent between 5% and 37% of their portfolios. In the case of the Vietnam Development Bank (VDB), water and sanitation loans represent 6.3% of its outstanding loans. In the case of the IlBank (Turkey), this represented 19% of its outstanding loan portfolio in 2019. Of the 366 projects IlBank financed and completed in 2019, 57 were related to water and 34 to sanitation. In Indonesia, PT SMI estimates water and sanitation to

represent 7% of its total financing in 2020. In Ecuador, 37% of BDE's portfolio is in water and sanitation. In Brazil, the water sector represents about 5% of overall loans but is expected to increase substantially in the coming years with the new regulatory framework. These different levels in part also reflect the historical mandates that PDBs have and are not necessarily a reflection of demand.

There is limited data concerning the size of PDBs investments in relation to the total financing of the water sector. The TrackFin exercise in Brazil showed that repayable finance from public and commercial banks accounted for 12% of all financial flows in the sector (WHO, 2014). Combining various figures on financial flows in the Netherlands, it is estimated PDBs account for 6% of investments in the sector (Annex 1).

7.6 WHO DO NATIONAL PDBS FINANCE?

Local governments and public utilities are PDBs' main clients. In many countries, the responsibility to invest and ensure water services and environmental protection has been devolved to local governments. Local governments may not necessarily directly provide services and may enter into contractual arrangements with services providers. In some cases, such as in France, Spain and Italy, PPP arrangements can shift investment responsibilities – and therefore risk – to private concessionaires. Local government owned PDBs (IIBank in Turkey and AFL in France) provide financial services to local governments, though NWB in The Netherlands can also provide financial services to publicly-owned utilities. IIBank can provide loans to utilities, but only when backed by a local government guarantee (Box 10). BNDES in Brazil provides finance to all entities, public or private, and directly to municipalities.

Box 10: Turkish municipalities access IIBank loans for water infrastructure

IIBank (Provincial Bank) is a development and investment bank owned by the Turkish state and subject to the provisions of private law. Turkish municipalities are able to use loans from IIBank to finance the infrastructure facilities that they need within the framework of existing legislation and their municipal investment programmes. IIBank provides loans from its own resources and acts as an intermediary in mobilising external credits from international financial institutions. In 2011, IIBank initiated a programme (SUPAK) to finance municipal investments in water supply and sanitation infrastructure. IIBank can lend 100% of investment costs to large municipalities (populations above 25,000) and 50% to small municipalities (populations below 25,000) which, subject to approval by the Higher Planning Council, can get a grant of 50% of investment costs funded from the central budget. By August 2018, the SUKAP programme had mobilised EUR 1.5 billion, of which EUR 572 million were grants and EUR 892 million were loans.

Source: Government of Turkey in Union for the Mediterranean, 2020.

Where private sector participation in the water sector is developed, PDBs have also been able to finance private investors. In France, for example, CDC also offers loans to private companies under different terms. In Morocco, CDG Capital has provided equity through a joint venture with Spanish investors for the construction and operation of a desalination plant in Agadir (Box 11). In Italy (CDP) and in Mexico (BANOBRAS), financing to private parties mainly happens in the form of project finance. In these cases, Special Purpose Vehicles are established which takes out the loans but also needs to bring in a certain percentage of the finance. Similar vehicles are supported by BNB in Brazil.

Box 11: The role of CDG in the Agadir desalination project

In 2017, ONEE in Morocco, signed a public private partnership contract with the Société d'Eau Dessalée d'Agadir (SEDA), a joint venture set up by InfraMaroc and the Spanish company Abengoa (desalination specialist), with 49% and 51% shared ownership respectively. The joint venture was set up in response to a call for tenders by ONEE.

CDG Group provided equity through InfraMaroc, an investment fund sponsored by CDG, as well as advisory services for structuring the transaction through CDG Capital Infrastructures, the fund's management company. The MAD 4 billion (€ 365 million equivalent) project with two components (drinking water and water for irrigation) raised debt financing from a consortium of local banks led by BMCE Bank of Africa and that included CDG Capital. Under the contract, SEDA is responsible for constructing and operating the desalination plant for the drinking water component. The total production capacity of the plant will be 400,000 m3/day, eventually including 200,000 m3/day for drinking water supply. The project is expected to benefit about 1.2 million water users and about 3,000 farmers.

Source: CDG Capital (2020); Agadir desalination plant and La ViéEco (2017) Interview with CDG Investment Director; https://www.bankofafrica.ma/fr

Loans to individual households or community associations are rare. BNB in Brazil is able to provide loans to individual households and farmers for small-scale on-site water infrastructure, such as private wells, rainwater harvesting tanks, on-farm irrigation systems, and small dams. The FIDEAGUA trust fund (TF) provides funding to community-based organisations through financial intermediaries to improve or build water supply infrastructure. In this case, the role of the PDB is to administer rather than capitalise the TF. But as the TF is part of the institution, the PDB has say in how it allocates its resources.

In many countries, opportunities for private sector participation in financing the water sector remains limited. This also means limited investment opportunities for PDBs through private recipients. Some countries are introducing reforms to address this gap. The new regulatory framework in Brazil for water and sanitation approved in July 2020 has opened the water sector to private concessionaires. This has led to an increase in demand for funds from PDBs across the country.

7.7 HOW DO NATIONAL PDBS SOURCE THEIR WATER PROJECTS?

PDBs that have a significant water portfolio appear to source water projects proactively. They consult local authorities and service providers to design and offer products and services suitable for water. Caisse des Dépôts, DBSA, IIBank and BNDES are very proactive in project origination. DBSA often works with municipalities from project concept up to the formulation of a bankable project. The PDBs can provide funding for project preparation which is eventually capitalised in the loans contracted by municipalities or utilities. DBSA seeks to work with any municipality (including those in weaker financial positions) to accompany them towards project formulation.

PDBs that are proactive in the water sector have a strong mandate, are considered key partners in water sector development and have also secured specific envelopes for water. This is the case of several PDBs in this study. CDC (France), CDP (Italy), and DBSA (South Africa) are examples of institutions that have strong water sector mandates supported by financial resources.

A proactive stance is particularly relevant and important in countries where the water infrastructure expansion has traditionally been funded through the central government. In these cases, local governments may not initiate water projects as they are potentially deemed of lesser priority than other sectors. This seems the case in Indonesia where PT SMI does not provide any water-related investment under its municipal finance products due to the lack of demand.

In practice, PDBs require a strong regional and local presence to develop water projects at scale. PDBs with strong involvement in water have shared water sector knowledge across their institutional branches. Where PDBs do not have a strong presence at the regional and local level, they collaborate with regional PDBs. This is the case with BNDES.

7.8 RISK ASSESSMENTS DONE BY NATIONAL PDBS

PDBs are banks and above all they assess the financial risks. Financial risks are assessed in two ways: balance sheet (corporate finance) or project-based (project finance).

In countries where clients are known to have strong balance sheets (France, the Netherlands) and get balance sheet financing, the risk assessment done by the PDB is minimal. In some of the Latin American countries, there are strict limitations on the level of debt that local governments can take on. These limits are set within the framework for public management and fiscal space. In these countries, the PDB itself does not do the financial risk assessment, but uses those of the relevant ministry of finance. In the case of larger projects, the risk assessment is done on the basis of the project.

In France, Caisse des Dépôts considers financial risks to be minimal: its main clients are municipalities with high credit ratings and strong balance sheets. In other countries where municipalities do not have strong balance sheets, PDBs are likely to favour project-based loans depending on the projected future cash flows. In Italy, for example, CDP only provides corporate (or balance sheet) loans if the entity has a strong balance sheet. This means that smaller utilities cannot easily access this type of financing. Corporate loans to utilities are generally unsecured and have a relatively short tenure (less than 10 years). In contrast, project finance transactions require stable projected cash flows, are usually secured and have a longer tenor.

Closely related to the above, is the institutional risk assessment. Some of the PDBs in Latin America, such as BDE (Ecuador) and BNDES (Brazil), not only assess the finances of the local government or utility, but also their institutional capacity to implement the project. The PDBs look at whether they have the proper tendering and contracting rules in place, the skills and capacity in house to manage complex infrastructure projects, the composition of the members of the board etc.

PDBs also assess non-financial risks. In addition to social and environmental impact assessment routinely associated with project appraisal, some PDBs specifically consider whether projects are fully aligned with their sector mandate. This is particularly the case when PDBs have developed specific sector programmes (or envelopes) which prospective borrowers can access only under specific conditions that may not necessarily be financial. In France, Caisse des Dépôts' Aqua Prêt, which provides large and long-term loans for water investments, is only available for local governments that can demonstrate that the project will contribute to the sustainable management of water assets. Local governments must have carried out a diagnostic of their water and sanitation assets to access loans from Aqua Prêt. If they do not meet the conditions, they may access loans with different terms as a loan product.

7.9 SOURCES OF FUNDS TO THE WATER SECTOR

PDB investments in the water sector come from multiple sources. These include international capital markets (NWB, CDP, AFL), national financial markets, national savings (épargnes, CDC France), public funds from national and state governments (Mexico, Brazil), IFIs and other sources (e.g. revenues from toll roads) as well as their own funds and sovereign loans (BDE in Ecuador and IIBank in Turkey).

Financing sources depend on the maturity of the financial markets in which PDBs operate. In France, the Netherlands and Italy, PDBs have successfully issued water and environment-related bonds (Box 12). PDBs with high credit ratings can raise funds on competitive terms, enabling its borrowers to significantly reduce the cost of the loans they take out to finance social and environmental projects such as water projects.

Box 12: CDP sustainability 'Hydro' Bond in Italy

A testimony to its long-term engagement in the sustainable development of Italy's infra-structures, in 2018 CDP issued the Sustainability 'Hydro' Bond, the first of its kind launched on the international capital market by an Italian issuer. The Bond was dedicated to supporting the financing of the construction, development and modernisation of Italy's water infrastructure, which is characterised by a significant infrastructural gap and an average annual per capita investment that is substantially lower than those of other European countries. The Sustainability 'Hydro' Bond has € 500 million and the proceeds were used to finance the water-related public infrastructure projects of 1,212 public entities through loans. The Bond has improved the efficiency of the water system, which has reduced the water dispersion by at least an estimated 40 million cubic metres, and has created and retained an estimated 10,000 full-time jobs.

Source: CDP (2021)

Global development funds set up to tackle climate change remain under-used for water. Many PDBs have access to funds created to boost climate-friendly investments such as the Green Climate Fund (GCF). However, discussions with PDB representatives showed that water-related investments are likely to only represent a small share of climate-friendly investments as PDBs tend to divert these funds towards the energy sector. The main reason for doing this is that to access 'climate funds', PDBs have to justify how their investments lead to decarbonisation. The energy sector has more obvious links to climate mitigation and adaptation. That link is harder to demonstrate with water-related investments unless a local context specific due diligence is made. According to CDC France, which accesses funds from the European Investment Bank, water investments on their own are not considered climate-friendly according to EIB's taxonomy – they need to be linked to energy savings.

Several of the interviewed PDBs, such as BDE and BANOBRAS, are still in the process of being accredited to manage Green Funds. They consider these funds to be an additional way of financing adaptation. But as they are in process, they could not comment on how they plan to use the funds in the water sector.

7.10 CO-FINANCING AGREEMENTS BETWEEN PDBS AND OTHER STAKEHOLDERS

All the PDBs in low and middle-income countries that we reviewed have been long-term partners of IFIs, multilateral development banks (MDBs) and bilateral development finance institutions (DFIs) in implementing large-scale water projects. In Turkey, İlBank benefited from € 390 million in loans from the World Bank for on-lending to municipalities specifically for water and sanitation projects between 2005 and 2016. By 2017, 14 municipalities had benefited from the project, giving 2.95 million people access to improved water sources and 1.5 million people improved sanitation. İlBank's involvement from sub-project design to implementation and monitoring largely contributed to the project's success (Box 13).

BDE (Ecuador), BANOBRAS (Mexico), BNB and BNDES (Brazil) all report that they frequently collaborate with the WB, Inter-American Development Bank (IDB) and CAF. They do so in different ways such as co-financing infrastructure, sharing different parts of the costs (e.g. one of the IFIs providing concessional finance for project preparation and the PDB providing the credit), and technical support (e.g. in structuring project finance). In El Salvador, the IDB provided technical support in establishing the FIDEAGUA trust fund for water service providers which is administered by BANDESAL, the national PDB. Section 6 discusses IFI investments through PDBs in the water sector.

Box 13: IIBank and the implementation of a large-scale water and sanitation project in Turkey

The Municipal Services Project was the first project financed by IIBank using IFI finance. Approved in 2005 for an initial amount of € 212 million, the Municipal Services Project benefited from an additional € 178 million in 2010 to meet the high demand from municipalities. IIBank borrowed the funds under sovereign guarantee from the state and acted as a financial intermediary between the World Bank and municipalities. The project emerged in the context of high urbanisation rates and Turkey's ambition to join the EU, which made environmental services a priority for the Government of Turkey. The objectives of the project were to support the development of municipal infrastructure to improve the environment and quality of water, wastewater, and solid waste management service and to support municipalities strengthen their financial position. It also included an institutional strengthening component for IIBank itself. In line with these objectives, the project has three main components.

- Physical investments in building and rehabilitating water and wastewater networks, constructing new treatment plants and solid waste management.
- Support to sub-borrowers to carry out feasibility studies, urban planning, the preparation of design and bidding documents and other projects documents.
- Strengthen IIBank's institutional capacity as this project was the first of its kind for the Bank.

IIBank implemented the project by on-lending World Bank loan proceeds to qualifying municipalities. Criteria to identify eligible sub-borrowers included: no overdue payments to the Treasury; sector debt service ratio coverage of at least 1:2; and, satisfactory institutional arrangements for sub-project implementation.

In total 14 municipalities benefited from the project. In these municipalities, 2.95 million people benefited from access to improved water sources in urban areas; 3.5 million people benefited from the industrial and municipal waste disposal capacity created; and 1.5 million people were provided with access to improved sanitation.

The main reasons for the successful completion of the project included: the existence of a strong pipeline of sub-projects at municipal level; feasibility studies carried out prior to project approval to confirm demand; and, IIBank's longstanding relationship with municipalities which reduced the risk of insufficient demand.

Source: World Bank (2017): Municipal Services Project. Implementation Completion and Results Report

Increasingly, as governments are realising the scale of water sector financing needs, PDBs are tasked to crowd in private finance. In South Africa, DBSA is increasingly looking to enable private sector participation through blended finance. South Africa's infrastructure sector has predominantly been funded through central and local government funds. However, the scale of the needs is pushing the Government to crowd in private sector investment and expertise.

This comes at a time when there is an increased appetite from the private sector for SDG and ESG compliant projects. In this context, DBSA's role is to support project preparation (including via grants, other forms of project preparation funding and technical assistance) and enhance projects' creditworthiness through means such as providing credit enhancement products. In Italy, CDP successfully supported a public service provider in international bond issuance (Box 14).

Box 14: CDP's role in Societá Metropolitane Acque Torino (SMAT) bonds issuance, Italy (2017)

SMAT is the public company that manages water services in the Turin Metropolitan Area that covers 2.2 million inhabitants across 291 municipalities. CDP acted as the anchor investor of the bond issuance operation to attract other international institutional investors. The operation represented SMAT's debut on the international bond market, with proceeds planned to be used to finance water and sewerage networks and expand and modernise plants. The bond issuance secured € 135 million with CDP as the principal subscriber.

Source: CDP

Some countries have dedicated water agencies to boost specific investment areas. Their role appears complementary to that of PDBs as they provide technical assistance and financial assistance to targeted sub-sectors that receive less attention from utilities/local governments. In France, for example, local governments can benefit from substantial grants covering up to 70% of project costs from dedicated river basin water agencies for wetland restoration. These agencies are mandated to accelerate the implementation of Government policies with regard to the water sector by providing financial incentives for investments in targeted areas. Box 15 examines the role of one of these agencies, the Rhone Mediterranean Corsica Agency (Agence RMC).

Box 15: Agence RMC

The Rhone Mediterranean Corsica Agency (Agence RMC) is a public establishment dedicated to water protection and regulated by the Ministry for the Environment. It collects fees based on the 'polluter pays' and 'taker pays' principle. Every euro collected is re-invested in local authorities and economic and agricultural stakeholders to fight pollution and improve the use of available water.

Agence RMC is one of the six water agencies in France created to manage water resources. A key function of the water agencies is to collect fees (redevances) from all water users/polluters. All water users who alter the quality and availability of water must pay fees. Agence RMC operates in the Rhone-Mediterranean and Corsica basins. Most of the fees levied come from household water bills (tax on domestic use amounting to 10% of the water bill). Households pay for the quantity of water that they use. Local authority water departments collect the fees on behalf of the water agency. Economic stakeholders also pay fees that target polluting practices, water storage or water abstraction with potential consequences for water and aquatic environment quality.

Agence RMC provides financial aid as part of its six year action programme for supporting the execution of water master plans, European Directives and national policies. Financial support is used to fund research and works and encourages regional adaptation to climate change, water saving measures, water quality recovery for drinking water, the restoration of the natural functions of rivers, and biodiversity promotion.

As do all the water agencies, Agence RMC supports water sector investments by local authorities in several ways.

- Subsidies for projects: this is the major part of Agence RMC's programme. Subsidies are provided to finance up to 70% of a project.
- Bonus grants for efficient wastewater treatment.
- Repayable advances (i.e. loans at zero interest rate).

To ensure that projects are in line with its policies, Agence RMC actively engages in consultation with local authorities It also launches calls for projects to stimulate investment in local authorities' non-priority areas. In 2020, for example, it launched a call for wetland restoration projects for which it would contribute up to 70% of the financing.

Source: Agence RMC, https://www.eaurmc.fr/

8. HOW ARE IFIS (MDBS AND DFIS) INVESTING IN THE WATER SECTOR THROUGH PDBS?

This section discusses how IFIs (both MDBs and DFIs) are investing in the water sector through PDBs; the types of investments; the instruments used; the risks and sustainability challenges they face; and the limitations to increasing investments via PDBs.

8.1 TO WHAT EXTENT DO IFIS FINANCE THE WATER SECTOR THROUGH NATIONAL PDBS?

There is no clear typology of IFI investment in the water sector through PDBs. They typically provide sovereign loans to a central ministry of finance, which then passes it on as grants/loans to line ministries and/or local governments. Some of these IFIs do provide loans through PDBs, sometimes earmarked for the water sector. Some of the IFIs also provide sub-sovereign loans directly, typically to metropolitan utilities, local governments and specific projects.

Most IFIs interviewed invest directly in PDBs for on-lending, which might be used in the water sector. There are also many examples of co-financing. For example, NADB (US/Mexico) sometimes co-finances investments in water and sanitation with BANOBRAS (Mexico).

Some of the sub-regional IFIs operate in countries where there are no domestic PDBs. None of the borrowing member countries of the Central American Bank for Economic Integration (CABEI) have domestic PDBs that operate in the water sector. The same applies to most of the member countries of Fondo Financiero para el Desarrollo de la Cuenca del Plata (FONPLATA). In these cases, sub-regional IFIs provide loans directly to local governments or utilities.

IFI finance to the water sector is sometimes also channelled through broader urban/municipal development projects. All IFIs mentioned that they provide loans for solid waste management, drainage and flood management within city development plans for climate mitigation and adaptation. Examples were also mentioned of water treatment plants (North Africa), drought management (LCA, North Africa and South Africa), irrigation linked to food security (LAC and North Africa), water network extension and rehabilitation (Eastern Europe). A few examples were mentioned of water reuse, support PPPs (Brazil and Middle East) and rural development plans (LAC).

The size of water and sanitation portfolios varies but is smaller than transport (the largest sector) and energy. Water portfolios range from less than 5% up to 15% of IFIs' overall portfolios, but up to 75% in the case of NADB. How much is channelled through PDBs is unclear. Further, investments in the water sector through PDBs are difficult to track as investments are not sectoral and only a few examples were mentioned.

Some IFIs also support water sector reforms or institutional support. A few IFIs (AFD, CAF, IDA/WB, EBRD) support sector reforms and work with regulators to improve the overall financial sector. Many others also provide institutional support to governments and utilities in the water sector (AfDB, KfW).

Most IFIs don't have a specific water sector agenda, largely because priorities for investments are set by countries/clients. The size of the water portfolio thus depends on changes in demand from clients. The Asian Development Bank (ADB) has set a specific target for sanitation investments to be increased to 25% of its water portfolio. AFD has also set objectives in its Sectoral Intervention Framework for the water sector (AFD, nd). IFI's historic mandates also play a role. For example, FONPLATA has historically focused on transport and has only started to grow its water portfolio. It takes time to expand into new sectors. NADB, on the other hand, has a very specific mandate in investing in environmental infrastructure in which water and its sub-sectors have a very prominent position (75%) without specific targets.

The Paris Agreement and climate targets are driving decisions behind investments for the majority of IFIs. AFD, EIB and ERBD have all increased their targets: by 2030, 50% of investments should be climate compatible. CAF is committed to at least 30% of investments being climate compatible in the short term. The SDGs are also leading for some IFIs, a few of which have combined the climate targets and the SDGs.

Whilst biodiversity is not yet a dedicated direct investment area for many IFIs, they do finance projects that generate benefits related to biodiversity protection. Biodiversity protection is indeed an outcome of wastewater treatment projects which are often funded by IFIs. Rather than a decision driver, biodiversity is a positive side-effect of investments.

8.2 WHY ARE IFIS CHANNELLING FUNDS AND CO-FINANCING THROUGH NATIONAL PDBS?

Most IFIs in this study provide loans to PDBs for on-lending to municipalities and service providers. The rationale for this is that PDBs are able to reach a broader geographical scope and more beneficiaries than IFIs would be able to. PDBs can also target smaller municipalities and utilities, providing smaller loans while MDBs frequently may not provide loans under a certain amount. PDBs can also have credit lines in local currencies, which is often an issue for IFIs.

> **"The projects we can finance through PDBs can be very small actors that we would never normally be able to finance." – IFI on national PDB**

Water sector loans provided through PDBs are larger than other loans to the sector. For example, in Turkey, the World Bank has disbursed nearly US$ 400 million via IIBank for the benefit of 14 municipalities over 10 years. CAF has disbursed US$ 864 million to the water sector via BDE (Ecuador). Some IFIs are co-financing the water sector jointly with national PDBs. For instance, BANOBRAS and NADB co-finance when the size of an individual investment goes beyond what either of them can finance alone. The same goes for FONPLATA which may co-finance with IADB. IFIs shift some lending risks to PDBs which manage the currency risk since most water projects are financed in local currency while the IFIS will finance mostly in hard currency.

Investing in the water sector through PDBs provides value for money to IFIs in terms of the outcomes achieved relative to the size of loans. By working with PDBs, IFIs also invest less time and resources in water project preparation as they work upstream with finance institutions and regulators rather than directly with municipalities or service providers. The PDBs take on the responsibility for project preparation and ensure all sub-projects comply with IFIs standards and procedures.

PDBs are also a good solution when IFIs do not have local offices. PDBs can actively contribute to project origination, preparation and monitoring on behalf of IFIs. Furthermore, the collaboration with PDBs contributes to capacity reinforcement and increases the autonomy of the country's financial systems in terms of processes and international standards – which then benefits many other sectors.

From a PDB perspective, working with IFIs also has benefits. IFIs often have very good credit ratings and therefore attract cheaper capital, which allows PDBs to on-lend at lower rates.

Box 16 outlines other benefits of sourcing funds from IFIs from the perspective of one PDB, the IIBank (Turkey). Another benefit is that IFIs may be able to provide some grant or concessional funding for project preparation.

Box 16: Benefits of IFI funding: the perspective of IIBank (Turkey)

IIBank has a long history of accessing funds from IFIs and has a special department that deals with the management of international funds. IIBank's access to IFI financing is backed by a sovereign guarantee. Although IFI finance comes with lower interest rates than locally sourced finance, it also comes with currency risks to which the Bank remains exposed, although it can lend in foreign currency. Other advantages of IFI finance for the Bank and other beneficiaries are that it:

- enables IIBank to diversify the loan portfolio by making additional capital available;
- provides long-term credits (up to 30 years) to local authorities with a five to seven year grace period;
- increases IIBank's know-how and capacities;
- enables institutional capacity building of local authorities, especially where funds come with TA and grant components; and
- makes overall project management more efficient.

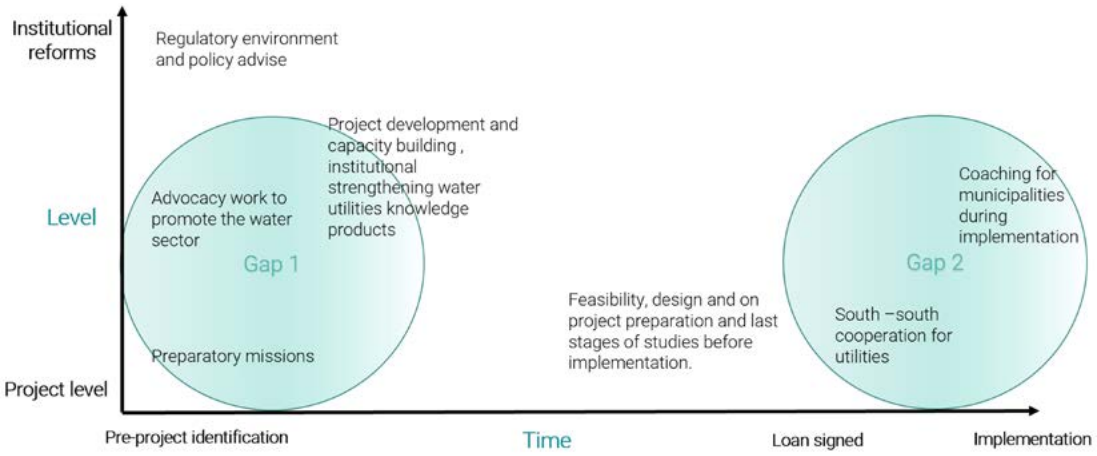
Source: IIBank

8.3 WHAT ARE THE SERVICE AND INCENTIVES IFIS USE TO CREATE DEMAND FOR NATIONAL PDBS TO WORK IN THE WATER SECTOR?

Technical assistance (TA) mechanisms are widely present and extremely diverse. The larger TA being made available by IFIs interviewed is focused on the regulatory environment (see Box 17). TA is also an important component of Water Project Preparation Facilities such as the AfDB's African Water Facility or CAF's Water Sector Pre-Investment Program (PPSA). The latter has assigned US$ 20 million of non-reimbursable resources to water project preparation, benefiting many countries in LAC.

The largest financing gaps described by the IFIs are in the areas of pre-project identification, advocacy work to promote the water sector and project development and, after the loans are signed, the TA required through to project implementation (Figure 10). This type of TA falls under long term systems strengthening and the risk of failure (i.e. investment not leading to loans) is very high. According to one MDB representative, working in this area is the only way for MDBs to remain relevant in the next 15 years.

Figure 10: Technical assistance from MDBs to the water sector, an overview



Box 17: Examples of technical assistance provided by MDBs relevant for PDBs and the water sector

- Working with banks that want to develop a green bond framework. The MDB works with central banks and regulators concerned with climate.
- In Brazil, jointly with development banks, MDBs support the new regulatory framework that stimulates private sector engagement.
- In Kyrgyzstan, the MDB works with the regulator to ensure that the private sector can enter the water sector.
- In Tunisia, there is a large TA component in capacity building dedicated to ease project execution. Coaches work directly with 26 municipalities and support the municipalities with procurement, environmental assessments and reporting during implementation.
- In El Salvador, the MDB supported the development of a water sector trust fund.

All IFIs want to work more on the enabling environment to allow the water sector to develop, but some governments are reluctant even when technical assistance is offered as non-reimbursable. We do not know the reasons for the reluctance. However, on a positive note, the demand for policy-based loans is actually increasing (see Box 18). Here, governments are asking IFIs to support their sectoral frameworks and are requesting policy-based loans to improve governance and strengthen the regulator.

"Buying reforms has been the most effective mechanism to ensure sustainability" – IFI representative

Box 18: Policy-based lending in the water sector in Tunisia

Germany has been supporting Tunisia with investment projects in the water sector for many years. To ensure that these projects are even more sustainable, including in the context of sectoral policy, Germany has also extended promotional loans worth an estimated € 300 million over three years (2017-2019) to back reforms, with € 100 million disbursed so far. The measures fixed in the policy matrix provide sound support both to reforms in public financial management and to water sector development, working in close cooperation with an IMF programme running in parallel to them. The activities in the water sector have included the passing of a new water law, national wastewater standards, and tariff changes.

Policy based financing is mostly concentrated in middle-income countries which have a greater capacity to implement reforms. It is appropriate for lower income countries in exceptional cases. Peer experience with PBF include the World Bank, the Asian Development Bank, the French Development Agency and KfW Development Bank.

Source: Konig et al., 2020

Products mentioned by the IFIs include equity, guarantees, investment premiums and results-based lending although these may not necessarily be used with PDBs or in the water sector. Equity is marginal and seldom used in the water sector (except by MDBs' private sector arms). Most loans are sovereign so they do not need additional guarantees. The European Union (EU) is developing a guarantee mechanism and some IFIs are extending loan or/and payment guarantees to enable utilities to get private loans. The uptake of these guarantees is low and though obtained in the energy sector, they are not being obtained in the water sector.

Investment premiums were mentioned by one MDB. These are exclusive to funds provided by the European Commission where a percentage of the loan is reimbursed when the projects are fully implemented. Results-based lending is being used by two MDBs but have not yet been used in the water sector. One MDB mentioned that it is still early days for this type of instrument, and while the energy clients like it, it has high transactional costs and requires a lot of capacity in the countries. Another MDB has a payment for results instrument used for water in Vietnam and Benin, but it is not directly related to its work with PDBs.

8.4 RISK ASSESSMENTS AND SUSTAINABILITY

The answers to how IFIs do risk assessments and ensure the sustainability of the programmes they fund were very similar among the IFIs and do not specifically refer to investments in the sector through PDBs, but how the IFIs address these areas in their operations in general.

Currency and financial risks

Most IFIs provide loans in hard currency, but there are exceptions. Local currency is increasingly being used upon request. PDBs also request funds in hard currency. Local currency loans can become more expensive and the financial conditions discouraging for the clients. Most IFIs blend funds to soften the conditions that are passed on to PDBs.

For the lenders, there are limited financial risks overall as most IFI loans are backed by sovereign guarantees which covers loans to PDBs and in the water sector in general.

Risk assessments and coherence of investments

All the IFIs mentioned structured, standard processes with multi-disciplinary teams which look at environmental, institutional, social and financial risks. Due diligence ensures that investments in the sector are not detrimental to other sectors. As IFIs do not control the sectoral allocation of the funds, this will not affect PDBs that benefit from IFI funding. Climate risks have also started being included in financial assessments given risks associated with water scarcity, flood and projects' level of water resilience. In terms of coherence of investments, these are taken into account by the processes and terms described above. Internal compliance mechanisms try to resolve any incoherence in the investments. Again, if the funding is channelled through other intermediaries, due diligence needs to be implemented differently.

Sustainability and measurements of success

IFIs have their internal mechanisms, tools, scores and matrices to measure success and sustainability. Many do ex-post evaluations beyond the programme scope. However, most IFI representatives interviewed mentioned that there are still many problems with sustainability and impact in the water sector, as there are in other sectors.

One particularly difficult point mentioned was reaching low-income areas. Agreeing on particular measures to the loans is not enough to see real changes taking place in leaving no one behind and IFIs were requesting greater accountability and more ex-post evaluations on what is working well.

> **"We are not putting any incentives on the performance of service providers. Tariffs cannot increase, service standards don't improve, there is poor financial sustainability and governments don't look for additional funds. However, no loans are cancelled either. The business interest to provide loans is stronger than the development impact."- IFI representative**

There are two major challenges concerning sustainability of water sector financing. One is that some of the projects take five to 10 years for preparation and implementation. Within this time frame many things change, people change and the risks associated with sustainability also change. The second challenge

is that climate projections will need to be incorporated into sustainability assessments consistently within the water sector.

Covid-19 impact

There have been no changes in risk assessments due to Covid-19. All IFIs mentioned that they are redirecting funds and creating new short tenure (two year) credit lines to provide liquidity to SMEs and utilities that have less capacity to pay operational costs given the decrease of revenues from industrial and commercial activities. Other support is being provided directly to treasuries for emergency response and is not water sector specific.

8.5 LIMITATIONS FOR INCREASING INVESTMENTS IN THE WATER SECTOR THROUGH NATIONAL PDBS

In practice, the IFIs interviewed tend to collaborate directly with sector institutions rather than with PDBs in channelling funds to the water sector. There are many underlying reasons for this, including:

- that not all countries have well-established PDBs;
- that not all well-established PDBs have a mandate for water (and other municipal services);
- the water sector market structure and lack of credit worthiness. In these contexts there is limited lending opportunities for PDBs and is the case in countries where central government funding in predominant, decentralisation is not effective and private sector participation very limited.

Many banks in Latin America and Asia can get cheaper finance in the local capital markets (Brazil, Mexico, Philippines, Ecuador) and procedures and conditionalities to access loans through IFIs can be cumbersome. PDBs need IFIs when they need longer tenors and more concessionality.

The lack of IFI local offices limits the demand of water projects. IFIs with a local presence have higher demand from PDBs for the water sector. In most lower middle-income countries, governments need to be ‘sold’ the idea of the water and sanitation sector. It is a difficult area to work with and create demand for and is rarely a high level country priority. IFIs need to have country officers that constantly promote the sector issues, build cases, and do intensive advocacy work for financing the sector within the country. In contrast, for PDBs in LAC, sanitation in the form of sewerage and wastewater is actually a larger market than water supply, probably because this is where the biggest investment gaps are at the moment.

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