



PARLIAMENT
OF THE REPUBLIC OF SOUTH AFRICA

INVESTMENT IN WATER INFRASTRUCTURE DEVELOPMENT IN SOUTH AFRICA¹

A brief to the NCOP

*Debate on Water Infrastructure Investment: Building viable water Infrastructure
for Sustainable and Reliable Water to Communities*

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1. INTRODUCTION

The purpose of this brief is to provide an overview of investment in water infrastructure development in South Africa. In particular, it focuses on private sector participation in the development of water infrastructure, as well as investment in water infrastructure with specific reference to public and public-private partnerships (PPPs) investment in water infrastructure development. Lastly, the brief provides recommendations to the National Council of Provinces (NCOP).

An analysis of the literature reviewed reveals that investment in water infrastructure is inadequate, as it is mainly sourced from the national revenue fund (public funds) disbursed through grants. The inability of municipalities to collect water tariffs contributes to backlogs in the roll-out of water infrastructure. The inability of communities to pay for water and sanitation services also exacerbates the investment shortfall for water infrastructure development. Lack of PPPs in the funding, operation and maintenance of water and sanitation infrastructure negatively affects the infrastructure roll-out programme. In this regard, the National Development Plan states that infrastructure investment as a percentage of GDP needs to grow from 21% in 2015 to 30% by 2030. This requires the public and private sectors to work together to fund and build infrastructure. Greater use of PPP financing can contribute to better decision-making, discipline, accountability and rigor in the planning and assessment of infrastructure projects.

The brief thus recommends that there is a need to create a conducive environment for PPPs in the water sector through legislative amendments. The establishment of the National Water Infrastructure Agency (NWIA) is a step towards centralised investment in water infrastructure. The NWIA will address the current fragmentation of asset management and revenue collection functions for national water resource infrastructure, which are currently fragmented between the Trans Caledon Tunnel Authority, the Water Trading Entity and the Department of Water and Sanitation. The agency will further enable Government to streamline investment in water infrastructure across the country to ensure sustainable and reliable water supply to communities. In conclusion, it is recommended that the National Council of Provinces (NCOP) monitor and hold the Department of Water and Sanitation, Water Boards, Municipalities and National Treasury accountable for the slow pace of investments in water infrastructure.

2. OVERVIEW OF THE PRIVATE SECTOR PARTICIPATION IN INVESTMENT IN THE DEVELOPMENT OF WATER INFRASTRUCTURE

The opening up of the water services sector to private competition is a part of water sector reform in many developing countries. This was not possible without the overall economic reforms of liberalising and decentralising economies that were initiated in the late 1980s and early 1990s. The ongoing water reforms in Ghana, India, Kenya, Niger, South Africa, Tanzania and Uganda, for example, form part of current economic and decentralisation reforms where management and financial responsibilities are transferred to local governments, states or provinces. The mobilisation and effective use of existing financial resources necessary to manage water resources and water supply and sanitation services are major challenges facing public and private water decision-makers and managers around the world. Ultimately, the responsibility for financing the water resource infrastructure and water management needs rests with local or national governments. However, this does not automatically imply that funds have to come from governments. Investment from private and other external sources, such as donors and international lending institutions, is and will continue to be frequently required.

It has been found that the current situation in many developing countries is problematic where even basic water functions, such as the operation and maintenance of drinking water supply and sanitation utilities, are not adequately funded.² Adequate investments for improved water resources management or ecosystem maintenance are typically even harder to obtain. In many developing countries, investment in water management and services is funded through insufficient and insecure sources by central governments with very limited funds. Water charges collected on the basis of resource use are often paid into a 'general exchequer', which can lead to lost opportunities to redefine financial roles and responsibilities between different water users and government agencies.³

Considerable discussion remains over public and private water services, institutional arrangements and the application of economic instruments to make water services delivery more efficient and equitable. Increased private sector participation in the development of water infrastructure, which in many cases has implied rising water prices, is in many social settings a heavily politicised issue that creates social and political discontent, and sometimes outright violence, the most cited case being that in Cochabamba, Bolivia. There are also other cases

² Rogers and Hall (2003).

³ *Ibid.*

where private operators have faced social protests against increasing user fees or the low standard of private firms' performance. This has led to a situation where operations are handed back to public authorities. For example, Trinidad and Tobago are reforming their water sector, now with a strong reluctance to re-introduce private operators. There are, however, also examples, as in Port Vila, Vanuatu, where privatisation has been shown to improve low-income households' access to water services. Experience demonstrates, among other things, the need for a well-planned concession contract, enforcement of regulatory powers and strong commitment by political leaders and participation by communities.⁴

Private enterprises within the water supply sector skyrocketed during the 1990s. It went from almost none in the early 1990s to the current figure of more than 2,350 private enterprises (companies). Until recently there have been expectations that the private sector will continue to expand its investments in developing countries. One estimation suggests that the private sector spent US \$25 billion on water supply and sanitation in developing countries between 1990 and 1997, compared with US \$297 million in 1984–90. Most of this investment was in Latin America and Asia, whereas Africa received less than one percent of the total investments made.⁵ It now seems like this trend of increased privatisation is reversing. Interestingly, many of the big multi-national water companies are questioning their own role in increasing their investments in developing countries and playing an active role in resolving the water supply and sanitation crises experienced by many developing countries. Due to the political and economic high-risk operations, shrinking profit margins (in part due to currency instability), and increasing criticism affecting the business image of many firms, a number of the multi-national private water companies have started to retreat from water services contracts and investments in developing countries.

Saur Pty Ltd, for example, has withdrawn from some African countries, such as Mozambique and Zimbabwe. Another example was when, in 2003, Saur started to downsize its water investments in developing countries by one-third of current investment levels. Likewise, other companies, such as Veolia and Thames Water, are reconsidering their commitment in developing countries. In 2004, Thames Water withdrew from its water operations in Shanghai and is also facing difficulties in Jakarta, where it was involved in Jakarta's water privatisation process, which began in 1997, but where the company has not been able to make profit.

⁴ Global Water Intelligence (2015).

⁵ UNDP (2003).

Resistance from consumers and political unease have delayed planned increases in water rates, and the company also attracted bad publicity due to allegations of inadequate service performance. Many of the multi-national water companies are consequently focusing even more on the less risky markets of Europe and North America.

The policy framework in South Africa for service delivery and private sector participation generally is established at the broadest level by, among others, Sections 217 (1) – (3) on Procurement; 218 (1) Government Guarantees; 24 Environment; 26 Housing and 27 Health, Food, Water and Social Security of the Constitution of the Republic of South Africa, 1996. The regulatory and policy framework in South Africa undergoes constant development and change. Currently, the regulatory framework defines the minimum level of service to be provided to all South African people, and allows municipalities to grant concessions and establish contracts with the private sector. Municipalities are charged with providing water and wastewater services according to law. The Municipal Systems Act, (Act No. 32 of 2000) and the Municipal Finance Management Act (Act No. 56 of 2003) provide the legal framework for public-private partnerships in local government. However, no formal national water utility regulatory agency⁶ for the sector exists and, in practice, the concessionaire is regulated by contract. The Water Services Act (Act No. 108 of 1997) provides the framework for the provision of water services, defining water service authorities, water service providers, and establishing the right of water service authorities (municipalities) to contract with private entities for the provision of services. The Municipal Systems Act also gives municipalities the responsibility and authority to set tariff levels.

However, in the specific case of water and sanitation and Public Private Partnerships (PPPs)⁷, the provisions of the Water Services Act are of concern. The Water Services Act was developed and promulgated at a time when there was some resistance to private sector participation in the delivery of basic services. As is the case with many pieces of South African legislation, the Act provides a framework to facilitate and direct decision-making. Consequently, the critical clauses of the Water Services Act allow for private sector

⁶ Perard and Kauffmann (2007).

⁷ Public Private Partnerships refer to those forms of partnership where Government establishes an arrangement with the private sector in which the private sector provides some form of investment. As such, the terminology PPP tends to exclude service and management contract arrangements, but includes leases and concessions.

participation in service delivery without being prescriptive. Notwithstanding this, two important clauses create a risk for private sector operations in water services in South Africa. First, the Act requires that the first choice by local government should be the public sector, if this is appropriate. Second, the Act empowers the Minister to set prices for bulk water, and determine norms and standards for tariffs.

3. INVESTMENT IN WATER INFRASTRUCTURE IN SOUTH AFRICA

3.1. Public Investment in Water Infrastructure

In South Africa, water infrastructure investments are primarily funded through tariffs and taxes, with some external finance (mainly from local and international financial institutions). These tariffs and taxes are disbursed in the form of grants, mainly from Vote 41: Water and Sanitation; and Vote 3: Cooperative Governance. Table 2 below provides details on these grants. It is worth noting that disaster-related grants have been deliberately omitted, as they are only available when a disaster has struck.

Table 1 shows that the funding for water and sanitation can be grouped into two broad categories, namely capital (investment) funding, and operational funding, as outlined by the purpose of each grant. Capital funding is used for the construction of new infrastructure or rehabilitation and refurbishment of existing infrastructure. Operational funding is needed for the ongoing operation and maintenance of existing infrastructure. All these grants have an economic component where consumers pay for full services, as well as a social component where consumers are indigents and the municipality can only depend on grant funding.

There are still significant backlogs in access to water supply and sanitation, as well as refurbishment or replacement of ageing infrastructure, mainly because of the lack of investment in bulk water infrastructure. Many of these projects fall outside the financial ability of local government and can be regarded as social projects. The total capital (investment) required (for new, as well as maintaining and upgrading of existing infrastructure) to meet current backlogs and projected future demand was estimated in 2018 to be R33 billion each year for the next 10 years to achieve water security in South Africa.⁸

⁸ Department of Water and Sanitation (2018).

For example, whilst Johannesburg Water, an entity of the City of Johannesburg, requires R61 billion to replace ageing water infrastructure, including water and sewer pipes, reservoirs, wastewater treatment plants and pump stations, the entity will only manage to raise R8 billion in the next five years. This shortfall almost equals the City's annual budget of around R70 billion. Johannesburg Water has never met the 1.5% renewal rate due to funding limitations for the past ten years. This situation is not peculiar to the City of Johannesburg, it is a common feature across the country and even worse in rural municipalities.

Table 1. Water and Sanitation Grants ^{9,10,11,12}		
Grant	Vote	Purpose
Municipal Infrastructure Grant (MIG)	3	Provides specific capital finance for basic municipal infrastructure back-logs for poor households, micro enterprises and social institutions serving poor communities.
Regional Infrastructure Grant (RBIG)	41	<ul style="list-style-type: none"> To develop new, refurbish, upgrade and replace ageing water and waste-water infrastructure of regional significance that connects water resources to infrastructure serving extensive areas across municipal boundaries or large regional bulk infrastructure serving numerous communities over a large area within a municipality. To implement regional Water Conservation and Water Demand Management (WC/WDM) projects or facilitate and contribute to the implementation of local WC/WDM projects that will directly impact on bulk infrastructure requirements.
Water Infrastructure Services Grant (WSIG)	41	<ul style="list-style-type: none"> Facilitate the planning and implementation of various water and sanitation projects to accelerate backlog reduction and improve the sustainability of services in prioritised district municipalities, especially in rural municipalities. Provide interim, intermediate water supply that ensures provision of services to identified and prioritised communities, including through spring protection, drilling, testing and equipping of boreholes. Provide on-site sanitation solutions; and Support drought-relief projects in affected municipalities.
Local Government Equitable Share (LGES)	3	Ensure that municipalities can provide basic services and perform the functions allocated to them, such as provision of water,

⁹ Department of Water and Sanitation (2022).

¹⁰ Department of Cooperative Governance (2022).

¹¹ National Treasury (2022).

¹² Minister of Finance (2022).

		sanitation, electricity, refuse removal and basic municipal administration.
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It is worth noting that water and sanitation are also funded through borrowing from local and international financial institutions by municipalities, water boards and the Trans Caledon Tunnel Authority (TCTA).

The Department of Water and Sanitation is in the process of integrating its entities, particularly the Water Trading Entity (WTE) and TCTA to, among others, address the current fragmentation of asset management and revenue collection functions for national water resource infrastructure, which are currently fragmented between the TCTA, the WTE and the Department. The establishment of the National Water Resource Infrastructure Agency (NWRIA) will enable these functions to be integrated into one entity. The Department aims to establish this agency by 2023, as the NWRIA Bill is currently in process for approval by Cabinet and subsequent tabling and passing in Parliament.

Apart from grants, investment in water infrastructure is also facilitated through the Infrastructure Fund, which was announced by President Ramaphosa in 2018. This Fund addresses the need for blended finance to enable the efficient execution of socio-economic infrastructure programmes and projects in South Africa. The aim of this Fund is to transform public infrastructure through bespoke blended financing solutions by sourcing and blending capital from the private sector, institutional investors, development finance institutions and multilateral development banks.¹³

The Infrastructure Fund is currently housed within the Development Bank of Southern Africa (DBSA). The Infrastructure Fund's mandate has been captured in a tripartite Memorandum of Agreement signed in August 2020 by National Treasury, the Department of Public Works and Infrastructure: Infrastructure South Africa (ISA) and the DBSA. The Infrastructure Fund, in collaboration with its key stakeholders, National Treasury, ISA and the project owners, intends to spearhead the efficient execution and implementation of South Africa's infrastructure development programme in line with principles of good governance and procurement systems that are fair, equitable, cost effective, competitive, and transparent. It is worth noting that the

¹³ Development Bank of Southern Africa (2023).

Infrastructure Fund has not been able to improve investment in water infrastructure due to lack of appetite from the private sector.¹⁴

The Infrastructure Fund has been seed funded by the National Treasury in the amount of R100 billion over a ten-year period. The contribution is intended to be key to the structuring of blended finance solutions. This seed funding is targeted at catalysing one trillion rands of infrastructure delivery within the country.¹⁵ The NCOP should establish from National Treasury and DBSA the extent to which the Infrastructure Fund has contributed towards investment in water infrastructure since its inception.

3.2. Public-Private Partnerships (PPPs)

A PPP is defined as a contract between a public-sector institution (e.g. municipalities, water boards, province or a national department) and a private party, where the private party performs a function that is usually provided by the public-sector and/or uses state property in terms of the PPP agreement. Most of the project risk (technical, financial and operational) is transferred to the private party. The public sector pays for a full set of services, including new infrastructure, maintenance and facilities management, through monthly or annual payments. In a traditional government project, the public sector pays for the capital and operating costs, and carries the risks of cost overruns and late delivery.^{16,17}

The PPP regulatory framework has remained unchanged for nearly 15 years. Despite the early success of the PPP model in South Africa, new project transactions have declined over the past nine years, from an estimated R10.7 billion in 2011/12 to R5.6 billion in 2019/20.¹⁸ The PPPs in the water sector are not common in South Africa. In fact, National Treasury lists only 31 concluded PPP projects undertaken since this type of partnership was first introduced in South Africa in 1998, at a total value amounting to R65.3 billion. It is worth noting that the majority of these partnerships were mainly in the transport, health, and tourism sectors.¹⁹ However, there are two notable PPP concessions in the water sector that were

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Asian Development Bank (2017).

¹⁷ National Treasury (2023).

¹⁸ National Treasury (2020).

¹⁹ Ibid.

signed in 1999 that is worth reporting. Table 2 provides the details on these projects, with a total investment value of R319 million.

Project Name	Government Institution	Type	Date of Close	Duration	Financing Structure	Project Value (R000')	Form of Payment
Dolphin Coast water and sanitation concession	Kwa-Dukuza Local Municipality (ILembe District Municipality)	DFBOT	1999	30 years	Debt (21%); Equity (18%); Govt (61%)	130	User charges
Mbombela water and sanitation concession	Mbombela Local Municipality	DFBOT	1999	30 years	Debt (40%); Equity (31%); Govt (29%)	189	User charges

Source: adapted from National Treasury (2023). (DFBOT) Design, Finance, Build, Operate and Transfer.

It is worth noting that all these concessions are a design, finance, build, operate and transfer (DFBOT) type of a PPP, with government contributing 61% to the finance structure for the Dolphin Coast concession, as shown in Table 2. The private company or the concessionaire is paid through user charges throughout the concession period. All these concessions are currently in operation. Siza Water Pty Ltd is the concessionaire for the Dolphin Coast project, while Silulumanzi (Formerly known as Greater Nelspruit Utility Company) is responsible for the Mbombela project. Both these projects are considered water and sanitation PPP flagship concessions. They are all considered to be somewhat successful concessions, which have improved investment in water infrastructure in their respective concession areas.^{20,21} These two case studies demonstrate that PPPs have the potential to improve investment in water infrastructure.

4. PROVINCIAL INVESTMENTS IN WATER INFRASTRUCTURE DEVELOPMENT PROJECTS

This section provides an overview of investments in bulk water infrastructure development projects that are in the planning and/or implementation stages across the country. Some of these projects are priority projects that were announced in the State of the Nation Address

²⁰ Hemson and Batidzirai (2002).

²¹ Bender P and Gibson S (2010).

(SONA) 2023.^{22,23} It is worth noting that these projects represent a step towards a water-secure South Africa.

Western Cape

- The Department is resuming the raising of the Clanwilliam Dam at a cost of R3.2 billion. The advance infrastructure is complete and work on the dam wall started in April 2022. The due date for completion is 2026. This project will ensure water security in the West Coast area of Cedeberg.
- The Department is currently completing the land acquisition process for the Berg River Voelvlei Augmentation Scheme to begin construction with an estimated cost of R1 billion. This project will increase water supply to the City of Cape Town when it is completed.

Eastern Cape

- The Mzimvubu Water Project is aimed at providing water to 750 000 people in the Eastern Cape, at a cost of R25 billion. This project is currently at a design and fundraising stages.
- The development of Coerney Dam and Nooitgedacht Water Scheme are long term water supply assurance projects in Nelson Mandela Bay. The projects are at procurement stages for design and construction, at an estimated cost of R1.3 billion.

Gauteng

The Lesotho Highlands Water Project Phase 2 is aimed at ensuring long-term water supply in Gauteng and the Vaal River System. The project is estimated to cost R32 billion and work packages for the Dam, Tunnel and the Bridge are currently at procurement stage. The anticipated completion date is 2027.

²² Department of Water and Sanitation (2022).

²³ Ramaphosa (2023).

Kwazulu Natal

- The uMkhomazi Water Project is aimed at delivering long-term additional water to the eThekweni region at a cost of R23 billion by 2028. The project is at pre-funding stage and construction is expected to start in 2024.
- The upgrade of the Hazelmere Dam is well underway to ensure long-term water supply to eThekweni. The project is due to be completed in the third quarter of 2023, at a cost of approximately R800 million.
- The Tugela Goedertrouw Transfer Scheme to ensure long-term water supply to the industrial area of Richards Bay currently under construction at an estimated cost of R800 million.

Northern Cape

The Vaal GamaGara Water Supply Scheme is critical to mining and potable water supply in the Northern Cape. Phase 1 was reported as almost complete in 2022 at a cost of R1.4 billion, with Phase 2 reported to have commenced in the second semester of 2022 and will cost roughly R10 billion.

Limpopo

- The multi-phase Olifants River Water Resources Development Project has been re-sequenced as a public-private partnership with mining companies to fast-track water delivery to everyone in the Sekhukhune and Mookgalaogwena municipalities by 2028, at a cost of R22 billion. The project is at approval stage, with some of the work packages at pre-construction stage.
- The Giyani Water Services project has been re-packaged and fast-tracked to deliver water to 55 villages in a sequential order at a cost of approximately R4 billion.

Free State

The Gariep-Mangaung pipeline is a long-term water supply project to Mangaung at a cost of R10 billion by 2029. The project is currently at a feasibility stage.

Northwest

The Department is urgently upgrading conveyance infrastructure from Molopo Eye to Mafikeng to increase reliability of water supply at an estimated cost of R50 million.

N.B. No strategic provincial investment in water infrastructure projects were provided for Mpumalanga province.

5. GOVERNMENT SUPPORT AND INTERVENTIONS TO ADDRESS WATER AND SANITATION INFRASTRUCTURE BACKLOG

There is agreement that municipalities' water and sanitation services are in a poor state and deteriorating. Nationally, 5.3 million households do not have access to reliable drinking water; 14.1 million people do not have access to safe sanitation; 56% wastewater treatment works (WWTWs) and 44% water treatment works (WTTWs) are in a poor or critical condition, and 11% are dysfunctional; 41% of municipal water does not generate revenue and 35% is lost through leakages. These problems are mainly due to, among others, poor governance, weak asset management, billing and revenue collection, operations maintenance and lack of investment in water and sanitation infrastructure and technical skills.²⁴ In light of this observations and the above analysis, the national government, through the Department of Water and Sanitation, intends to intervene as follows:

- Strengthen the role of DWS in supporting and intervening in municipalities where water and sanitation services are failing. This will be done in conjunction with provinces, the Department of Cooperative Governance and Traditional Affairs (CoGTA), National Treasury (NT) and the South African Local Government Association (SALGA) in the spirit of cooperative governance (District Development Model), as prescribed by the Constitution to avoid creating inter-governmental conflicts.
- Strengthen and extend the roles, responsibilities and capacity of water boards to enable them to support municipalities more and to provide water and sanitation services in instances where municipalities are failing to provide the services.
- Review the geographical boundaries of the water boards to make them more sustainable. This has already started with the disestablishment of Sedibeng Water. Its area of operation will be divided between Magalies Water and Bloem Water Boards.

²⁴ Department of Water and Sanitation (2022).

- Increase the involvement of private sector financing and management in municipal water and sanitation services.
- More effectively link the allocation of municipal water and sanitation grants to enable support and interventions.
- Use DWS internal construction capacity for rapid deployment to address urgent infrastructure needs.

Some of these measures will start impacting municipal water and sanitation infrastructure services in the short term (within three months) and others will yield results over the medium term.²⁵

6. CONCLUSIONS AND RECOMMENDATIONS TO THE NCOP

South Africa has enacted relevant legislation pertaining to the roll-out of water and sanitation infrastructure and services. For example, the Constitution is explicit insofar as the provision of water and sanitation services are concerned. This is clearly operationalised by the National Water and Water Services Acts, which set out the roles, norms and standards for the provision and development of water and sanitation infrastructure, among other issues. These are also complemented by municipal legislation and strategies. Therefore, the existing legislative framework aimed at enabling the State in the provision and development of water and sanitation infrastructure is adequate, while there is a glaring gap in provision for the participation of the private sector.

Funding for water and sanitation infrastructure is not adequate, as it is currently mainly sourced from the national revenue fund. Failure of municipalities to collect water tariffs contributes to water and sanitation infrastructure roll-out backlogs. The inability of communities to pay for water and sanitation services also exacerbates the funding shortfall for investment in water and sanitation infrastructure. Lack of public-private partnerships on the funding, operation and maintenance of water and sanitation infrastructure negatively affects infrastructure development.

To this end, there is a need to capacitate municipalities with relevant technical skills for optimal operation and maintenance of the water and sanitation infrastructure to ensure sustainable

²⁵ Ibid.

and reliable water supply to communities. Government should strive to implement water and sanitation legislation before trying to amend them since, in most cases, it is not the legislation that is defective but the political will and the technical ability of the officials in Government that is lacking. Public-private partnerships should be encouraged, particularly in areas where communities have the ability to pay for services. The NCOP should consider establishing from National Treasury and the DBSA the extent to which the Infrastructure Fund has contributed towards investment in water infrastructure since its inception.

In conclusion, the Department of Water and Sanitation appears to have a plan to address the water and sanitation infrastructure backlogs. It is therefore recommended that the NCOP holds the Department accountable for this plan by requesting more detailed information on, among others, specific projects and funding requirements across the provinces. In addition, the establishment of the National Water Infrastructure Agency should be fast-tracked so that a clear water and sanitation infrastructure plan for the entire country could be developed and funded appropriately to ensure reliable water infrastructure for sustainable water supply to all communities.

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