



**KOPANO YA METSI**  
UNLOCKING WATER INVESTMENT IN SOUTH AFRICA

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#KopanoYaMetsi

# Solving for Wastewater Treatment: an NBI Perspective

**Kopano ya Metsi Roundtable, 1 March 2019**  
**Alex McNamara, NBI**

Welcome and introductions

From its commencement, Kopano ya Metsi has sought to understand:

1. How water investment can be unlocked in South Africa
2. What the main barriers to Public Private Partnerships (PPPs) are
3. Where the major opportunities for private sector involvement lie
4. How municipal water management can be strengthened
5. How we can solve for a specific test case (wastewater treatment)

*The project findings will be launched nationally in mid-2019*

Focusing in on  
wastewater treatment:  
what are some of the key  
challenges we need to  
address?

## Wastewater Management Challenges in South Africa

### **Insufficient infrastructure**

- Most plants operating above their design capacity
- Untreated sewerage polluting surface water resources

### **Poor operations and maintenance (O&M)**

- Faulty equipment and machinery
- Lack of crucial equipment such as flow meters. This results in insufficient data to guide whether upgrades are needed
- Manhole spills are prevalent due to lack of capacity and thus poor maintenance
- The absence of security guards at some WWTWs resulting in increased vandalism and theft of major components
- Inadequate preventative maintenance due to lack of O&M plans, hence no risk assessment done leading to spillages
- Inadequate problem reporting/response systems
- Lack of prompt response and remedial action on reported cases

### **Skills shortages**

- Insufficient suitably qualified staff to support efficient plant operation. Only a few WWTWs have classified process controllers, artisans etc

## Wastewater Management Challenges in South Africa (cont'd)

### Financial management

- Inappropriate financial prioritisation for WWT infrastructure
- Asset management not sufficiently institutionalised
- Lack of accurate expenditure records leading to challenges in unit costing and tariff setting
- Inadequate financial and operational planning

### Legal compliance

Challenges that have been found at many plants include:

- No water use authorisation for the discharge of wastewater effluent
- Absence of by-law enforcement
- Poor or lack of effluent monitoring, hence treatment processes not adjusted accordingly
- Poor enforcement of environmental guidelines on effluent nutrient levels prior to discharge into rivers i.e. dissolved oxygen, nitrogen, phosphate in effluent

### Inter-governmental alignment/poor governance practices

- Inadequate cooperative governance and cross-regulatory interfaces between DWS, the affected municipalities and other role-players
- Political interference in WWT related decision making - resulting in adverse outcomes

Given this context,  
what might a set of  
solutions look like?



On first view it would appear that long-term, performance-based O&M contracts could address a fair degree of our wastewater challenges. The reality is, of course, more complicated

- **Any management contract awarded for a period over 3 years will require a municipal council resolution (section 33 of the MFMA)**
- **Long-term private sector O&M contracts will also need to comply with the Municipal PPP Regulations and section 78 of the Municipal Systems Act**
- **While less politically sensitive than water provision, a private sector O&M contract for WWT could still face significant stakeholder resistance, and will require a lengthy procurement process**
- **Only a small grouping of South African municipalities can realistically afford the procurement process required, and have the internal capacity to successfully manage a PPP**
- **As such, a multi-faceted approach is needed, including where we leverage private sector capacity, finance and expertise**

# At least six delivery models seem possible:

		Pros:	Cons:
1.	Support Munis to reach full functionality in WWT	<ul style="list-style-type: none"><li>Based on existing delivery model. No change or buy-in needed</li></ul>	<ul style="list-style-type: none"><li>A long-term solution in many instances</li></ul>
2.	Establish a municipally-owned WWT business/not for profit	<ul style="list-style-type: none"><li>Based on existing delivery model</li></ul>	<ul style="list-style-type: none"><li>May only be implementable in Metros?</li></ul>
3.	Manage a municipal WWTW via a well functioning Water Board	<ul style="list-style-type: none"><li>Some precedent for this</li><li>Procurement should be easier</li></ul>	<ul style="list-style-type: none"><li>Well functioning Water Boards are themselves fairly stretched</li></ul>
4.	Implement private sector O&M contracts in select municipalities	<ul style="list-style-type: none"><li>Pay on delivery</li><li>Can raise external finance</li></ul>	<ul style="list-style-type: none"><li>Risk of non-payment remains</li><li>Most Munis are not PPP ready</li></ul>
5.	Adopt a blended finance approach, with implementation administered by a trusted third party	<ul style="list-style-type: none"><li>Raises additional funding by leveraging government grants</li></ul>	<ul style="list-style-type: none"><li>Currently untested in SA</li><li>Risk of non-payment not entirely addressed</li></ul>
6.	Raise a project bond for a specific WWTW infrastructure project	<ul style="list-style-type: none"><li>Helps address payment risk</li><li>Can access affordable debt finance</li></ul>	<ul style="list-style-type: none"><li>A financing mechanism, doesn't address risk of poor delivery or inability to borrow money</li></ul>

A 'one stop shop' for WWT could potentially assist with a number of these delivery models. Such support could take different forms:

**1. Municipal WWT One Stop Shop  
(national, public)**

**Assists with the following delivery models:**

- (1) Municipal capacity development
- (2) Municipally-owned WWT business/not for profit
- (4) Private sector O&M contracts
- (6) Project bonds (and other finance)

**Example activities:**

- Provide centralised transaction advisor support
- Hand-hold Munis in developing internal capacity, protocols and planning
- Development of standardised documents

**2. Municipal WWT One Stop Shop  
(provincial, public)**

**Assists with the following delivery models:**

- (1) Municipal capacity development
- (2) Municipally-owned WWT business/not for profit
- (4) Private sector O&M contracts
- (6) Project bonds (and other finance)

**Example activities:**

- Provide centralised transaction advisor support
- Hand-hold Munis in developing internal capacity, protocols and planning
- Development of standardised documents

**3. Municipal WWT One Stop Shop  
(national, private)**

**Assists with the following delivery models:**

- (4) Private sector O&M contracts
- (6) Project bonds (and other finance)

**Example activities:**

- Industry associations build project pipeline at risk
- Provide transaction advisor support
- Hand-hold Munis through the establishment of performance-based O&M contracts
- Monitoring and external evaluation support

# For more information



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# Format for the roundtable discussions

We will have 3 three themed tables, each guided by a facilitator:

## Table 1: Strengthening current initiatives

1. What initiatives are currently working effectively?
2. Are there ways we can strengthen or scale up these existing efforts?
3. What WWT sector partnerships are currently working well?
4. Are there ways we can strengthen these partnerships?
5. Are there other collaborations that could realistically work?

We will have 3 three themed tables, each guided by a facilitator:

## **Table 2: One stop shop and private sector involvement**

- 1. Is there value in setting up a one-stop shop for WWT? If yes, how can this be developed?**
- 2. How would this one stop shop relate to the planned Municipal Intervention Unit for Water and Sanitation (MIUWS)?**
- 3. Where could such a one stop shop be housed?**
- 4. Assuming private sector involvement is needed, how can they be brought into WWT in a mutually beneficial manner?**

We will have 3 three themed tables, each guided by a facilitator:

## Table 3: Water reuse

- 1. What are the factors preventing municipalities from developing water reuse projects at scale?**
- 2. How do we address the negative public perceptions around direct potable reuse?**
- 3. How do we address the aspect of reusing water vs. the impact (less water available) it will have on downstream users?**



# Key WWT role-players and their current initiatives

KEY ROLE-PLAYERS	ROLES & RESPONSIBILITIES
<b>Department of Water &amp; Sanitation (DWS)</b>	<ul style="list-style-type: none"> <li>The sanitation mandate was returned to DWS in 2014 and entails the regulation of the sanitation sector in the country, provision of macro planning, regional bulk services and monitoring</li> <li>DWS oversees 152 municipalities which are in turn responsible for wastewater infrastructure</li> </ul>
<b>National Treasury</b>	<ul style="list-style-type: none"> <li>Disburses grants for water and sanitation and provides oversight of municipal finances</li> <li>The Cities Support Programme provides integrated implementation support to Metros</li> </ul>
<b>Government Technical Advisory Centre (GTAC National Treasury)</b>	<ul style="list-style-type: none"> <li>Provides advisory services, programme management and development finance support to improve public finance management, and strengthen infrastructure planning and delivery</li> </ul>
<b>Water Boards</b>	<ul style="list-style-type: none"> <li>Responsible for bulk water and sanitation infrastructure provision to municipalities within their respective service areas</li> </ul>
<b>Municipalities</b>	<ul style="list-style-type: none"> <li>Municipalities in SA are designated as WSAs, responsible for the constitutionally mandated task of supplying potable water and sanitation services, either as water service providers (WSPs) themselves, or externally through third party WSPs</li> </ul>
<b>South African Local Government Association (SALGA)</b>	<ul style="list-style-type: none"> <li>SALGA is an association of municipalities that serves as the representative voice of all 257 municipalities</li> </ul>
<b>Municipal Infrastructure Support Agent (MISA) – (established under CoGTA)</b>	<ul style="list-style-type: none"> <li>MISA is mandated to provide technical capacity support and assist municipalities to build their internal capacity, in support of improved delivery and management of infrastructure and service provision</li> </ul>
<b>Development Bank of Southern Africa (DBSA)</b>	<ul style="list-style-type: none"> <li>The DBSA supports the development of water and sanitation infrastructure by providing financing to municipalities and regional water boards</li> </ul>

KEY ROLE-PLAYERS	RECENT INITIATIVES/SECTOR ACTIVITIES
<b>Department of Water &amp; Sanitation (DWS)</b>	<p>From the National Water &amp; Sanitation Master Plan (NW&amp;SMP):</p> <ul style="list-style-type: none"> <li>• Hosting of a Mini-Phakisa in 2019 to enable stakeholders to engage with the Master Plan in-depth</li> <li>• Establishing a specialised municipal intervention unit for water and sanitation (MIUWS) i.e a national, targeted programme of refurbishing and turning around failing WWTWs</li> <li>• Focusing on maintaining and restoring existing infrastructure rather than constructing new infrastructure by 2020 (DWS, NT, COGTA)</li> <li>• Revitalizing the Green Drop programme for wastewater management with the release of the 2017/18 report aimed for 2019</li> <li>• The waste discharge charge system will be implemented with specific targets for rehabilitation in upper Crocodile, upper Vaal, upper Oliphant catchments followed by country roll-out starting 2019</li> <li>• DWS plans to establish a National Water and Sanitation Infrastructure Agency (NAWASIA)</li> </ul>
<b>National Treasury</b>	<ul style="list-style-type: none"> <li>• Established Project Management Unit (PMU) for implementation of phase 2 of the Cities Support programme</li> <li>• Infrastructure Fund announced within 2019/20 Budget Speech</li> </ul>
<b>Government Technical Advisory Centre (GTAC National Treasury)</b>	<p>A number of WWT and related projects funded in 2018. Support provided to local government to optimise infrastructure grant performance under the GTAC Infrastructure Development Support Programme. Relevant projects:</p> <ul style="list-style-type: none"> <li>• City of uMhlathuze: Wastewater reuse project – funded feasibility study</li> <li>• Polokwane Municipality: Sanitation Infrastructure project (new WWTW construction) – funded full project - currently at procurement stage</li> <li>• eThekweni Municipality: Construction &amp; Operation of new WWTWs (Umdloti &amp; Umkomaas) – funded inception phase</li> </ul>

## KEY ROLE-PLAYERS

## RECENT INITIATIVES/SECTOR ACTIVITIES

### Water Boards

- Upgrades to WWTWs by Umgeni Water, Rand Water and Bloem Water
- Support the operation of WWTWs in certain instances

### South African Local Government Association (SALGA)

- Municipal Benchmarking Initiative (MBI) for monitoring yearly progress towards ensuring incremental and ongoing improvement within municipalities
- Municipal Managers Forum facilitating debates on key topical issues facing the water sector in municipalities
- Wastewater to Energy (Biogas) partnership between SALGA and GIZ. Assessment of waste to biogas potential in wastewater treatment plants in all provinces (2014-2016)
  - ✓ Case study: Johannesburg Water Northern Works Biogas to Energy

### Municipal Infrastructure Support Agent (MISA) – (established under CoGTA)

- MISA District Technical Support Teams deployed to support 55 of the 87 priority distressed/dysfunctional municipalities
- Each District Support Team includes engineers, construction and project managers, financial accountants, town and regional planners and governance and administration experts as required
- MISA is directly involved in managing PSPs with municipalities
- MISA has applied to GTAC in 2018 for project funding to develop PPPs to support local government infrastructure delivery. Approval from GTAC is pending
- MISA is also putting in place a range of framework contracts for refurbishment/building of new WW & WWTWs. This is aimed at easing procurement challenges in municipalities. Municipalities will simply place orders against the relevant national framework contract with rates already negotiated and set
- Currently training 100 water and wastewater process controllers who are placed in various municipalities to support WWTP
- Developing graduate engineers for professional registration and providing bursaries in requisite sectors

## KEY ROLE-PLAYERS

## RECENT INITIATIVES/SECTOR ACTIVITIES

### **Development Bank of Southern Africa (DBSA)**

- Partnership with Cities Support Programme for infrastructure development in municipalities
- Fund Manager for the Infrastructure Investment Programme for South Africa (IIPSA). Established to support the implementation of government's infrastructure programme and address constraints to infrastructure development in South Africa and the SADC region
- Providing capacity building and support to specific municipalities on wastewater reuse

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The National Business Initiative is a voluntary coalition of South African and multinational companies, working towards sustainable growth and development in South Africa and the shaping of a sustainable future through responsible business action. Since our inception in 1995, the NBI has made a distinct impact in the spheres of housing delivery, crime prevention, local economic development, public sector capacity building, Further Education and Training, schooling, public private partnerships, energy efficiency and climate change.

The NBI's identity is embedded in our membership. Our work is made possible through our membership community whose contributions allow substance to be given to the role of business in shaping a sustainable future. This is achieved through member companies support for the NBI and active involvement with our work.

The NBI is a global network partner of the World Business Council for Sustainable Development (WBCSD) and an implementation partner of the CEO Water Mandate, We Mean Business and the CDP.



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