

Discussion document on technical capacity building for local government with an emphasis on water supply and sanitation

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1 Purpose of this document

The motivation for this brief review of local government technical capacity arrangements has been precipitated by the need to address this topic as part of the World Bank study on requirements for meeting the UN Sustainable Development Goals associated with water supply and sanitation. But this review goes beyond the brief for the World Bank study and is also intended to benefit other stakeholders involved with local government technical capacity. The strategy component of this review also draws on work done with funding from the African Development Bank as part of their review in the municipal infrastructure sector in South Africa. Further, it follows work done by Ian Palmer on technical capacity building under the auspices of the African Centre for Cities at the University of Cape Town. But PDG takes sole responsibility for the content of this document and for any errors or omissions.

2 Capacity measures

In assessing trends relating to the technical capacity of municipalities it is essential to have measures of performance whether these be in the form of inputs, outputs, or outcomes. This section of the document provides an overview of current performance measures.

2.1 Nationally applied performance criteria

NT Section 88 circular identifies performance measures, identified as 'outcomes'. These include, for water and sanitation:

WS1. Improved access to sanitation

WS1.1 Percentage of households with access to basic sanitation

WS2. Improved access to water

WS2.1 Percentage of households with access to basic water supply

WS3. Improved quality of water and sanitation services

WS3.1 Frequency of sewer blockages per 100 KMs of pipeline

WS3.2 Frequency of water mains failures per 100 KMs of pipeline

WS3.3 Frequency of unplanned water service interruptions

WS3.4 Percentage of customers satisfied with water and sanitation services

WS4. Improved quality of water (incl. wastewater)

WS4.1 Percentage of drinking water samples complying to SANS241

WS4.2 Percentage of wastewater samples compliant to water use license conditions

WS4.3 Percentage of wastewater effluent volume complying with license conditions (weighted by flows by plant)

WS4.4 Green drop score

WS4.5 Blue drop score

WS5. Improved water sustainability

WS5.1 Percentage non-revenue water

WS5.2 Total water losses

WS5.3 Total per capita consumption of water

WS5.4 Percentage of water reused

Looking at specific indicators from the point of view of the SDGs study where emphasis is placed on continuity of water supply, it is notable that this is not included as an indicator even though StatsSA has kept data on this indicator. It is most important from the point of view of consumers. Further, the data is not available for most of these indicators for municipalities other than metros. Even for metros the discontinuation of the Blue Drop, Green Drop and 'No drop' (NRW) reports has been a problem as they have been such an important performance indicator. The reports were, inexplicably, stopped by government in 2014 and, while there is recent agreement to restart them, no new reports are available, although it is understood DWS continued to collect the data which informs the reports.

2.2 Capacity of staff – public sector sources

Capacity of staff is an 'input' indicator but, along with access to finance, is important from the point of view of meeting SDGs. The most recognised indicator of technical capacity in a municipality from the point of view of staffing is number engineers per 10,000 people as this can be related to international data. However, there is little consistency in the way the three primary government capacity data repositories – NT, StatsSA and MDB - handle staffing data, as shown in the table below.

Table 1: Technical staff capacity measures used by National Treasury, MDB and StatsSA

Data source	Staffing categories
National Treasury SA24 tables	<ul style="list-style-type: none"> • Managers and senior managers • Professionals by sector, including water and sanitation. • Professionals - other • Technicians by sector, including water and sanitation • Technicians - other • Clerks (Clerical and administrative) • Service and sales workers • Skilled agricultural and fishery workers • Craft and related trades • Plant and Machine Operators • Elementary Occupations • Total personnel
Municipal Demarcation Board 2011 survey	<p>Highest qualification of senior managers</p> <p>Qualification, years of relevant experience and year in position for:</p> <ul style="list-style-type: none"> • Municipal managers • Chief financial officers • Technical services managers • Corporate services managers • Integrated development planning managers <p>Analysis of Section 57 posts</p> <p>Technical and scarce skills assessment, including registered professional engineers, technologists and technicians (qualified engineers who are not registered were not included in the survey).</p> <p>Assessment for each key service provision departments including staffing (total staff and engineering professionals) and finance.</p>
Municipal Demarcation Board 2018 survey	<p>Number of staff by qualification</p> <ul style="list-style-type: none"> • Tech qualifications (NQF6) • Bachelor's degree (NQF7) • Honour's degree (NQF8)

	<ul style="list-style-type: none"> • Master's degree or higher (NQF9&10) <p>Number of staff registered with planning, engineering and financial professional bodies:</p> <ul style="list-style-type: none"> • Accountants • Qualified engineers • Engineering technologists • Planners • Planning technicians <p>It appears that total staff numbers are broken down by sector. Possibly the staff with NQ7 and above qualification is also broken down by sector.</p>
Stats SA non-financial census of municipalities	<ul style="list-style-type: none"> • Managerial positions according to Section 56 • Managerial positions (excluding Section 56 managers) • Employment positions including managerial positions • Employment positions excluding managerial positions by department

The StatsSA figures are not useful from the point of view capacity to manage infrastructure as the designation of 'manager' is too broad, covering a full range of disciplines.

From the point of view of tracking trends, the NT data is most useful, particularly 'professionals' in water and sanitation departments. However, there will be inaccuracies here. Firstly, because in small municipalities a professional will cover multiple sectors and will then, presumably be allocated to the 'other professionals' category. Secondly, professionals in the water and sanitation department may not be engineers: they may be water scientists, for example. Or they may be non-technical professionals managing water and sanitation infrastructure. Thirdly, it is not clear where 'technologists' are located but it is assumed that they are included as professionals.

The two recent MDB capacity surveys – 2011 and 2018 – provide detailed information but, unfortunately, there is limited consistency in the indicators used and the data was not collected in a common database. The usefulness of these surveys in tracking trends is, therefore, limited. However, both surveys captured figures on number of registered professional engineers and qualified technologists per municipality. The 2018 survey does not cover metros with reliable data. For local municipalities 98 out of 205 have data from both years with districts having 24 of 44 with data for both years.

2.3 Private sector initiatives to assess performance and capacity

The SA Institute of Civil Engineers (SAICE) undertook a comprehensive survey of engineering professionals in local government in 2005 and 2015. The findings were well publicised and provide useful trend information.

Extraordinarily, AfriForum has conducted water quality and wastewater effluent quality assessments over the period 2013-2020. They refer to these reports as 'blue drop' and 'green drop' which is unfortunate as they are not equivalent to the DWS reports which use multiple criteria with a strong focus on systems. This data is also unlikely to be as comprehensive as the data kept by DWS on water and wastewater treatment plant effluent quality.

3 Capacity of the capacity builders

In building the capacity of municipalities the capacity of the 'capacity builders' is critically important. The key government support organisations are MISA, DWS, GTAC and provincial local government departments. With the exception of DWS there is no consolidated data on the technical capacity of these organisations. MISA, which has the largest role to play in supporting municipalities does not report on engineers in its annual reports. While they have data on engineers they claim that this is confidential and are not willing to share it.

In the case of DWS the department currently employs 109 engineers (excluding candidates) and 17 engineering technologists. There are also 50 candidate engineers - essentially interns - and 6 candidate technologists. The number of engineers is far below the peak in the later 1990s when the department employed 350 engineers but above the low point in 2017 when the department only had 80 engineers. With regard to candidate engineers, there is an obvious concern over how 50 of these candidates can be supported by 109 full-time engineers.

4 Output-based performance results

In dealing with the extent to which capacity has been 'built', the importance of measuring the performance of municipalities cannot be over-stated as an overall improvement in outputs and outcomes is the best indicator of improved capacity. And yet, while policies and plans to have a comprehensive system to measure performance have been made over the past twenty years, it is only recently that there are agreed metrics for measuring performance, and no single source of reliable data, which includes historic trends, exists. The situation with the individual water supply and sanitation service is somewhat better as DWS introduced performance measures in the form of 'Blue Drop' and 'Green Drop' reports in 2008. But these were discontinued in 2014, without the department giving a reason.

For the purposes of this report the data which is available is assessed, with findings summarised below.

4.1 Circular 88 reports

The intention of government is to focus on the NT 'Circular 88' performance indicators. However, the results for the first year of reporting (2019/20), which cover metros exclusively, have only just been completed and hence no trend information is available.

4.2 The distressed municipality study by DCoG and NT

DCoG and NT produced a comprehensive overview of municipal performance in 2018 with the following results:

Table 2: Results of 'distressed' municipality assessment by NT and DCoG, 2018

Category	Total number	Number distressed	% distressed	Total population	Population in distressed municipalities	% people in distressed municipalities
B1	19	7	37%	8,332,261	3,545,059	43%
B2	27	9	33%	4,882,933	2,413,246	49%
B3	99	41	41%	7,771,782	3,633,895	47%
B4	60	17	28%	12,469,978	3,990,320	32%
C1	23	2	9%	15,273,142	912,841	6%
C2	21	11	52%	18,183,812	9,417,873	52%

While this is important data, showing the extent of dysfunctionality of municipalities, as far as can be ascertained the review has not been repeated and hence there is no information on trends.

4.3 DWS data on water supply and sanitation systems

As noted earlier in this document, the Blue and Green Drop reports were important performance measures but were discontinued by government. The last Blue drop report in 2014 showed a progressive increase in performance from 2009 to 2012, with the national blue drop score increasing from 51.4% to 87.6% and the number of systems gaining 'Blue Drop' status increasing from 25 to 98. However, this was followed by a decline in 2014, with the national score at 79,6% and only 44 systems gaining 'Blue Drop' status.

The 2014 Green Drop progress report for the period 2008 to 2014 showed an increase in the number of plants at high risk: of the 850 odd plants assessed the number which were considered to be at the highest risk increased from 129 to 212 over this period.

More recent data is available from DWSs reporting dashboard. Kretzmann et al¹, reported on this data as follows: 'By the national DWS's own admission, 56% of the country's 1,150 treatment plants are "in poor or in critical condition". Of these, 265 are "in a state of decay", says department spokesperson Sputnik Ratau. But the department's admission does not reveal the full extent of the rot. The IRIS dashboard data reveals that 691, or

¹ Kretzmann, Mtsweni, Luhanga and Damba, 2021. 'South Africa's rivers of sewage: More than half of SA's treatment works are failing'. Daily Maverick 26 April 2021.

75% of 910 municipality-run wastewater treatment works in South Africa achieved less than 50% compliance to minimum effluent standards in 2020'.

As mentioned above, DWS continues to collect data on municipal performance. This includes water and wastewater treatment works effluent quality. But this data was not accessed for this report.

4.4 StatsSA household survey: coverage, intermittent supply and payment

The annual household survey undertaken by StatsSA provides valuable insight into the trends with water supply and sanitation:

- Water supply: Responses to the question whether a household has access to a piped water supply indicates increased access from 76.5% on 2006 to 81.2% in 2019.
- Sanitation: The question in this case was related to the type of sanitation facility to which the household had access, with 'improved sanitation' including flush toilets connected to a public sewerage system, or a septic tank, or a pit toilet with a ventilation pipe. Access to improved sanitation increased from 61.7% in 2006 to 82.1% in 2019.

These trends with access to water and sanitation are remarkably positive. But they only refer to the extent to which infrastructure exists (pipe to the house or ventilated pit, for example) and not to the functionality of the service. Regarding functionality of water supply systems, the household survey includes a statistic on the extent to which households experienced interrupted supply in the 12 months before the survey: interruptions that lasted more than 2 days at a time, or more than 15 days in total during the whole period. Data for the country as a whole are shown in the figure below. The situation is particularly severe in Limpopo and Mpumalanga provinces (57% and 55% in 2019) and with high levels of intermittent supply also occurring in North-West, Northern Cape, Eastern Cape KwaZulu-Natal, and Free State (all between 43% and 33%). Gauteng and the Western Cape perform best (10% and 5% respectively).

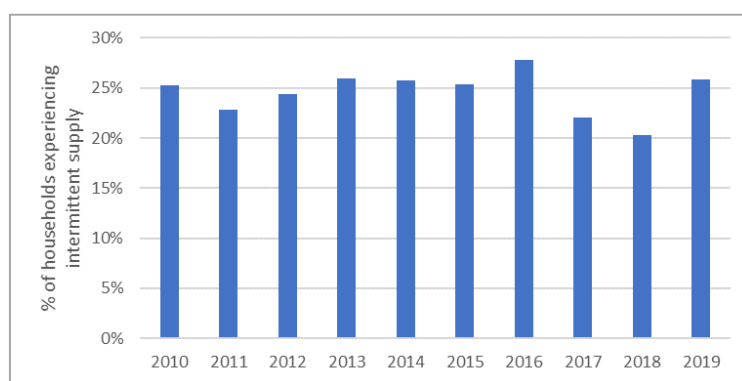


Figure 1: Trend with intermittent water supply for country as a whole

Note that this data is self-reported by households and subject to inaccuracy. Nevertheless, the overall trends are significant and show no gains taken over the ten-year reporting period.

The Household Survey also tracks the extent to which households pay for municipal water with the results from the 2019 survey shown in the table below.

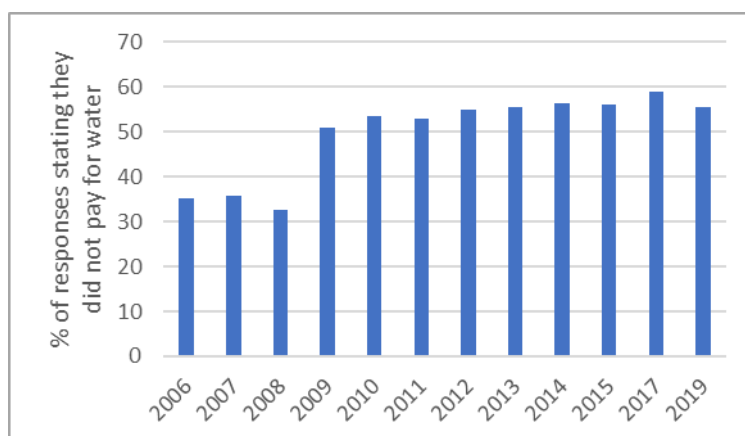


Figure 2: Household payment for municipal water, 2006–2019

The reasons for the discontinuity between 2008 and 2009 and is uncertain but, looked at overall, the decline in levels of payment for water supply is of concern, not only because it impacts on the viability of water supply operations but because it is associated with declining percentages of metering and billing and hence a decline in the extent to which water supply is accounted-for.

4.5 Water and wastewater treatment works effluent quality assessments

Water and wastewater treatment works effluent quality data kept by DWS is being sought but is not available for this report. In the interim the data reported by AfriForum, a private organisation which carries out its own survey of water and wastewater quality is included here². For water supply they found only 5 out of 220 towns where water quality did not meet standards. In the case of wastewater treatment plant effluent their results for 188 towns show a rapid decline in quality: the percentage of towns with failed tests increased from 62% in 2013 to 72% in 2020.

4.6 Overall conclusion

While the evidence suggests substantial gains in the access to basic water supply and sanitation services, the concern here is more with the capacity of municipalities to manage these services effectively. What has been gained from capacity building initiatives over the previous ten years? The limited evidence on this topic leads to the conclusion that the overall performance of municipalities in managing water and sanitation services is poor and is not getting better. While there will be successes with some individual municipalities, or groups of municipalities, overall this output-based assessment indicates that current capacity building initiatives have been ineffective, whether these be internal to municipalities or instituted provincially or nationally.

² Lambert de Klerk. 2020. 'Blue and green drop report project'. Prepared for AfriForum, November 2020.

5 Input-based performance data: engineering staff

It is arguable that the success of water supply and sanitation service provision depends on the capability of staff to manage infrastructure intensive services. This is the realm of civil and electrical engineering, yet there is insufficient recognition of the key role engineers play in providing these services and, particularly, of the importance of having engineers in leadership positions, where they have sufficient autonomy to manage these services without undue political and administrative interference. This decline in the professionalism of municipal engineering departments has been highlighted by Neil Macleod in a recent Business Day article where he notes that that municipalities themselves recognise that they are not equipped to deliver on their water supply and sanitation responsibilities, as demonstrated by the Municipal Services Strategic Assessment (MuSSA) carried out in 2018. About 78% of respondents stated that they were in an extremely vulnerable or highly vulnerable state. Macleod argues that this will only change when certified engineering professionals are placed at the head of technical services departments, with this position backed by the Water Institute of Southern Africa³.

The following part of this section addresses the extent to which engineers and technologists are being employed by municipalities.

5.1 Results of the SAICE survey

The South African Institute of Civil Engineers (SAICE) undertook a surveys of engineering professionals in municipalities in 2005 and 2015 and this remains the best data available on trends with technical capacity. The results are shown below, with numbers normalised per 10,000 people in a municipality.

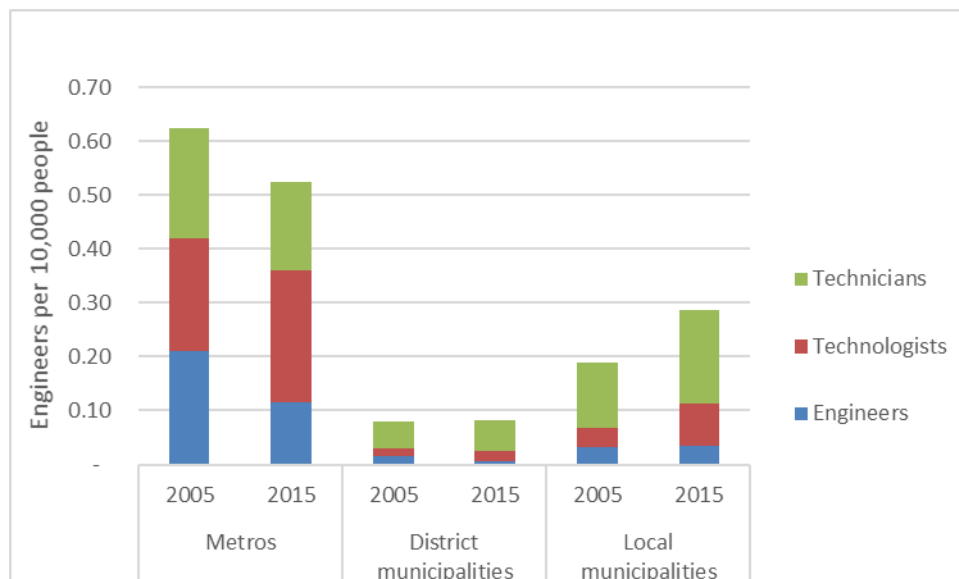


Figure 3: Results of SAICE survey of engineering professionals 2005-2015

³ 'Water supply needs certified professionals' Business Day 11 May 2021.

The results show a decline in engineer numbers in metros, small gains in local municipalities and alarmingly low numbers in district municipalities. On the other hand, numbers of technologists are shown to be increasing.

5.2 National Treasury SA24 report data

National Treasury requires municipalities to submit data in terms of the Municipal Budget and Reporting Reform (MBRR) standard budget tables. This includes staffing numbers, as mentioned in Section 2.2. This data has been analysed over a five-year period, with the methodology described as an annexure to this memo. The emphasis can only be on trends as only those municipalities where the data was considered to be realistic are considered: 145 of 257 municipalities (56%), with the breakdown by MIIF category given below.

Table 3: Selection of municipalities with adequate data

MIIF category	No. of municipalities	Data quality adequate	% adequate
A	8	6	75%
B1	19	15	79%
B2	26	19	73%
B3	100	46	46%
B4	60	37	62%
C1	23	14	61%
C2	21	8	38%
All	257	145	56%

The poor data provided by C2 municipalities is a particular concern given the large number of people served by each C2 municipality.

In 2019/20 there were 16,600 professionals in the sample municipalities of which 40% were in metros, 52% in local municipalities and 8% in districts.

The trends are shown in following figures for total number of professionals and water and sanitation professionals per 10,000 people for the sample municipalities:

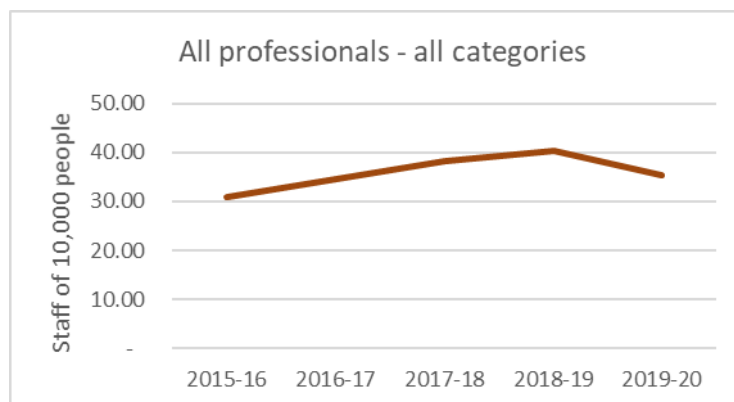


Figure 4: Totals for all professionals in sample, per 10,000 people

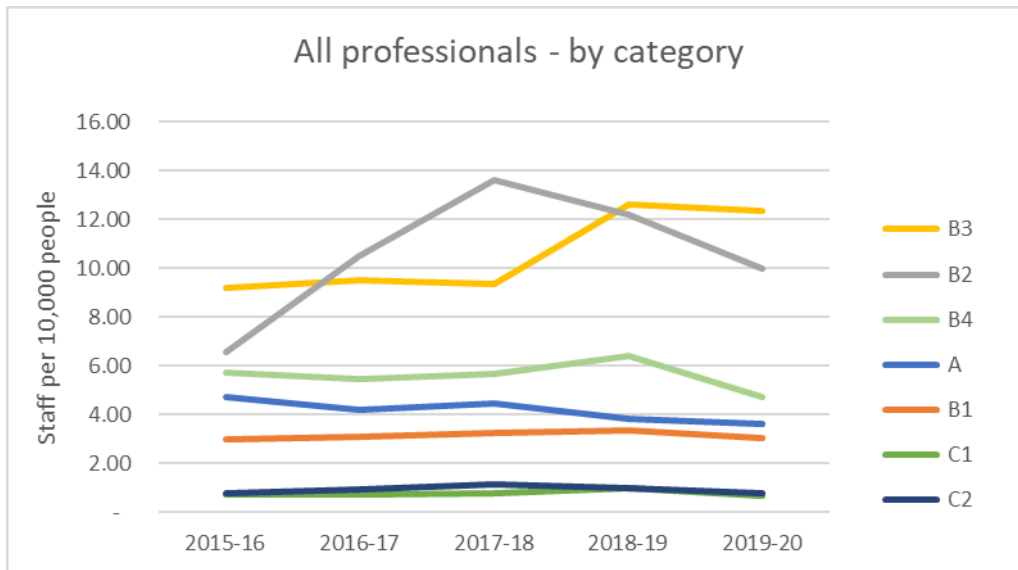


Figure 5: Trends by municipal category for all professionals per 10,000 people, by category

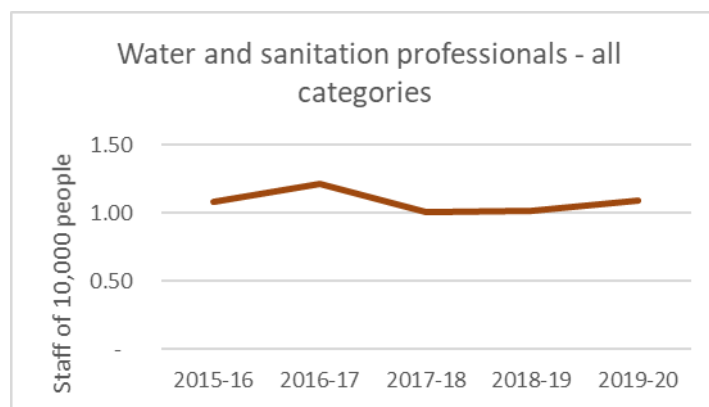


Figure 6: Totals for water services professionals in sample, per 10,000 people

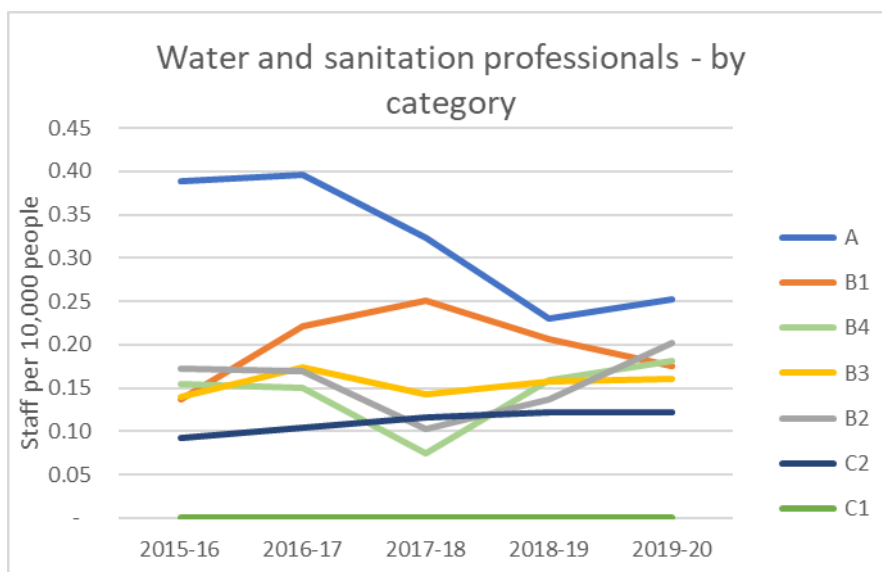


Figure 7: Trends for water services professionals per 10,000 people, by category

In 2019/20 only 4.8% of professionals in the sample municipalities were in water and sanitation departments. While there has been some growth in the total number of

professionals in municipalities there has been no improvement in the number of water and sanitation professionals. The results for professionals in the water and sanitation sector show a similar trend to that shown in the SAICE survey which compared 2005 to 2015 data:

1. There is an ongoing loss of water services professionals – presumably mostly engineers – from metros.
2. There are gains in water services professionals in local municipalities. However, research undertaken by SAICE indicates that these are mostly young engineers with limited experience and in need of mentoring.
3. Gains have been made with water services professionals in C2 districts but off a low base. Given the low levels of graduate engineers reported from other sources it is also likely that few of these professionals are engineers.

5.3 MDB capacity survey results

As noted in Section 2.2 the MDB has undertaken two capacity building surveys over the past decade: one in 2011 and one in 2018. The problems with continuity in these surveys has been raised with only two staffing indicators comparable number of registered engineers and number of qualified technologists. Neither of these surveys got responses from all municipalities: the 2011 survey got responses from 214 municipalities, including all metros; the 2018 got 167 responses with no reliable data from metros. In order to track trends only those municipalities where there was data from both years are included, with the split by municipal category shown below:

Table 4: Sample of municipalities used in MDB trend analysis

MIIF category	All munics	With both yrs	% in sample
A	8	0	0%
B1	19	10	53%
B2	26	12	46%
B3	100	40	40%
B4	60	35	58%
C1	23	11	48%
C2	21	13	62%
Total	257	121	47%

The trends are shown below:

Table 5: Trends, based on sample, for numbers of engineers and technologists from MDB surveys

MIIF category	Number of registered engineers		Number of qualified technologists	
	2011	2018	2011	2018
B1	26	30	59	93
B2	16	24	11	26
B3	34	50	15	44
B4	27	33	14	29
C1	13	13	9	18
C2	14	21	28	41
Total	130	171	136	251

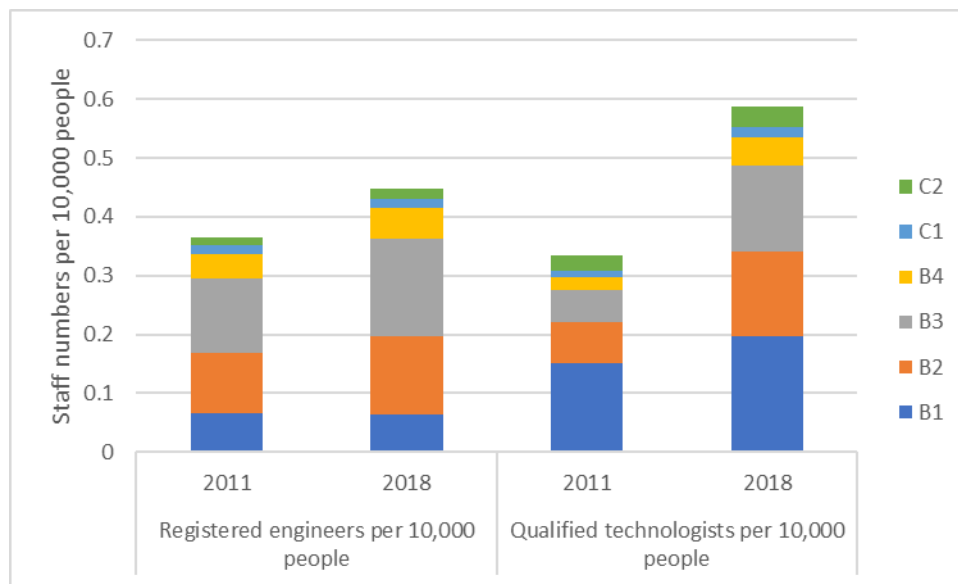


Figure 8: Trends from MDB surveys sample for registered engineers and qualified technologists per 10,000 people

Regarding engineers the MDB data shows significant increases in engineers in all but B1 and C1 municipalities. The gains by local municipalities combined is consistent with the findings from other surveys. In the case of districts, the data also shows again the very low numbers of engineers in C2 districts which are responsible for large scale water supply and sanitation assets. The greater increases in numbers of technologists across all municipal categories is also notable.

5.4 Comparing SAICE and MDB data

To an extent the MDB data is comparable with the SAICE survey. However, the SAICE data is for civil engineers and technologists while the MDB data covers all engineering disciplines: civil and electrical (possibly with a few mechanical). But numbers of civil engineers are by far the largest in most municipalities, noting that districts and most B4 municipalities do not supply electricity and therefore will not appoint electrical engineers. Grouping B and C municipalities together, comparative results are shown below.

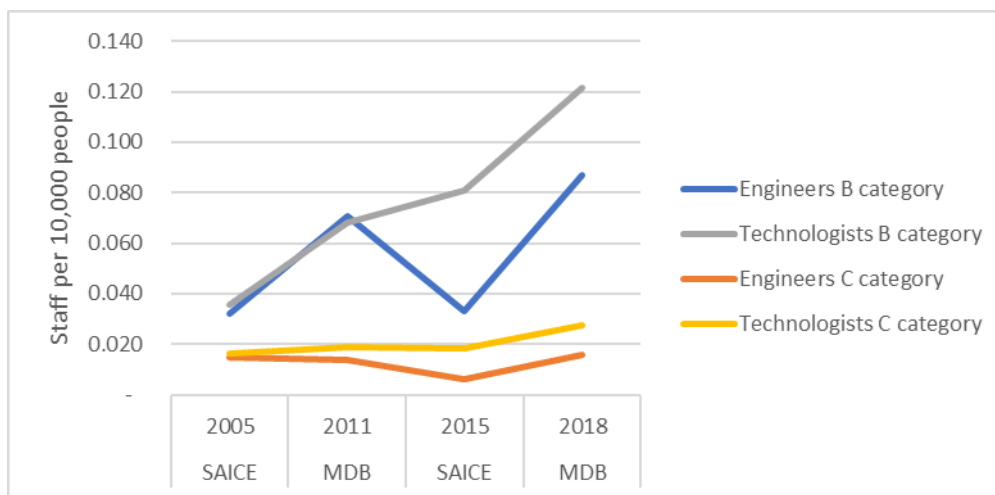


Figure 9: Comparison of trends for engineers and technologists: SAICE and MDB data

While there is some consistency between the SAICE and MDB surveys relating to technologists and engineers in districts, the data for engineers in local municipalities is highly variable, with the MDB surveys showing much higher numbers. Some of this can be explained by the inclusion of all engineering disciplines in the MDG survey but this is unlikely to explain all of this difference.

5.5 Conclusion on technical capacity

Regarding **graduate engineers** there are some differences in what the data from NT, MDB and SAICE are showing, but there are some consistent trends:

- Numbers of engineers in metros are in decline and in B1 municipalities little has changed over the past decade.
- Smaller local municipalities (B2, B3 and B4) are proving more able to recruit engineers.
- The situation with low numbers of engineers in district municipalities, particularly C2 districts, is alarming, even accepting that a numbers have increased by a few. According to MDB 2018 data there are five C2 districts with no registered professional engineers and four with only one. Yet each C2 district is, on average, responsible for providing water and sanitation services to an 850,000 people.

Yet it is evident that this is not due to a shortage of engineers in the country. For example, a survey conducted in 2019 by the SA Institute of Civil Engineers found⁴: *'amongst 1367 of its members, 932 (68%) of the surveyed engineering professionals indicated willingness to work in the public sector. There are specific issues however, that prevent engineering professionals from joining the public sector. These include an over-politicisation of infrastructure departments, the diminished decision-making roles of technocrats, the lack of systems, processes and structures for efficient administration, lack of training, development and career paths, and unwarranted interference of HR and Finance divisions in the work of infrastructure engineering professionals.'*

⁴ <https://saice.org.za/south-african-engineers-are-leaving-in-alarming-numbers-and-its-hurting-the-economy/>

The situation with **engineering technologists** is considerably better, with substantially increased numbers in all categories of municipality. While it is obviously an important development there is a concern about increasing imbalance between engineers and technologists, particularly in metros and C2 districts where the scale and complexity of infrastructure to be planned, implemented and managed is largest.

6 Input-based performance: access to finance

This document does not address the overall financial viability of municipalities and hence the extent to which they have enough revenue to cover operating expenditure. It only deals with access to finance specifically for technical capacity building both for municipalities themselves and for support organisations. In this regard NT has put forward a number of R3 billion committed to capacity building. Funds committed from the national fiscus are given in the following table:

Table 6: Funding from the national fiscus which have some capacity building orientation

	2019/20
Direct transfers	
Infrastructure skills development	149
Local government financial management	533
Programme and project preparation support	310
Municipal Infrastructure Grant PMU	741
Indirect transfers	
Municipal systems improvement	111
Sub-totals transfers	1,844
Municipal Finance Improvement Programme (MFIP)	149
MISA	390
Total	2,383

The balance of the R3 billion number put forward by NT may be from provinces. Also, the funding provided for the City Support Programme is not included. If the two finance-oriented capacity programmes are stripped out, the total from the table amounts to R1.7 billion. This needs to be related to the total asset value of municipal infrastructure of R2.8 trillion. It is only 1% of the required annual capital expenditure on municipal infrastructure of R170 billion.

There are also questions over the effectiveness with which this funding is spent to improve technical capacity, specifically relating to operations and maintenance, with the primary concern that they are not sufficiently aligned with a properly designed support programme. There have been regular proposals to amend the fiscal framework to allocate funds which are dedicated to technical capacity building and are aligned with a national support programme. A recent SALGA paper⁵ proposes the introduction of an infrastructure support grant, previously referred to as a capacity building grant. This could

⁵ 'Stepping up infrastructure provision' Report to Budget Forum on Infrastructure. Draft report – for discussion purposes only. February 2021.

be oriented to support specific capacity building programmes described later in this document.

7 Capacity building strategy

There is no technical capacity building strategy accepted by government in SA in the sense that there are goals, organisational responsibilities, and financing proposals. However, a strategy was proposed and discussed at a technical capacity building workshop held in February 2020 at DBSA's Vulindlela Academy. The concept there was to build on programmes which are in place, or at least conceptualised, and to focus on a blend of public and private sector activity. This proposed strategy is used as the basis for recommendations made here.

7.1 Building on four programmes

It is proposed that the strategy aligns with four programmes which are either in place or at least conceptualised:

1. **City Support Programme**, targeted at 8 metros, started its second five-year phase in 2019. It is hosted by National Treasury and staffed by specialists on five-year contracts. Support is provided across a range of activities with moderate support for infrastructure provision. It is funded by NT and supported by the World Bank. While this does not have a strong infrastructure focus, there is no need for anything additional to be added to improve capacity to meet SDGs. It is assumed metros are sufficiently capable.
2. **The Intermediate City Municipality Support Programme** is targeted at 39 intermediate cities. It is at an early stage of implementation with a design complete, some city diagnostics and two cities supported at pilot phase. The design provides for a project management unit (PMU) to be located within DCoG with a staffing structure including an infrastructure manager. But the means for bringing in high level engineering expertise is uncertain. Support for the design and pilots is provided by SECO and AFD. But the programme remains largely unfunded and requires funding of about one billion Rand over 5 years. It is assumed that some of this can be considered as technical capacity building, but supplementary funding will be necessary.
3. **Small towns regeneration programme** is hosted by SALGA. It was not possible to get details on this programme for this review, but the indications are that this is a relatively small programme considering that there are 157 local municipalities which are not intermediate cities, some 100 of these potentially categorised as 'small towns'. The remainder are larger towns and rural municipalities. A technical capacity building approach has not been defined for this programme, but it is proposed that this can be done within MISA.
4. A business plan for **regional management support contracts** for the 21 rural districts of South Africa was set up by MISA in 2015 and supported conceptually by DCoG and with funding by NT. At the time, the World Bank's PPP unit was also engaged. From an infrastructure point of view the emphasis is on water and

sanitation as these districts are the authority for these services (in other 22 districts the authority is located with the local municipalities). Implementation commenced in 2016 but at a small scale (three districts) and without World Bank support or international standard procurement procedures. The programme was not implemented in accordance with its business plan and has had made limited progress since then in the three districts, far short of 21 district implementation envisaged for the five years commencing in 2016. Nevertheless, based on the business plan, it remains the primary option for substantially improving water and sanitation services in these districts.

7.2 Strategy proposals

Capacity building options

Considering the full spectrum of technical capacity building arrangements, it is proposed that interventions are grouped as follows:

- A. **Building capacity of existing municipal staff and systems:** strategic management; change management; systems and process mapping; mentoring and coaching; pairing; twinning; infrastructure specific skills development programmes; service provider contracts; active citizenry
- B. **Engineering sector development** (training and educating new entrants) - education and training of potential new employees: Bursary schemes; internships; apprenticeships; SETA collaboration.
- C. **Technical assistance from public sector organisations:** MISA direct technical assistance; MIG PMU support; district core skills teams; integration of functions.
- D. **Technical assistance from private sector:** direct technical assistance as service providers; assistance under PPPs to bring new capacity into the sector.
- E. **Technical assistance from international partners:** technical assistance to national organisations to improve their ability to support municipalities (support the supporters); setting up PPPs between municipalities and private firms.

It is essential that efforts continue to build capacity of existing municipal staff and improve systems (Option A). This is directly aligned with the need to professionalize technical services departments in municipalities. This requires recruiting experienced engineers into leadership positions, giving them authority to manage the services without undue political or administrative hindrance, and mentoring junior engineers and technologists. It is equally essential to develop the sector and promote the recruitment of new engineering professionals (engineers, technologists, and technicians) under Option B. However, based on the lack of progress over the past five years, this cannot be done using existing public sector interventions alone (Option C). This leads to the conclusion that complementary interventions under Options D and E are needed. These interventions will ensure that the internal technical capacity of municipalities continues to grow. The approach is shown diagrammatically below.

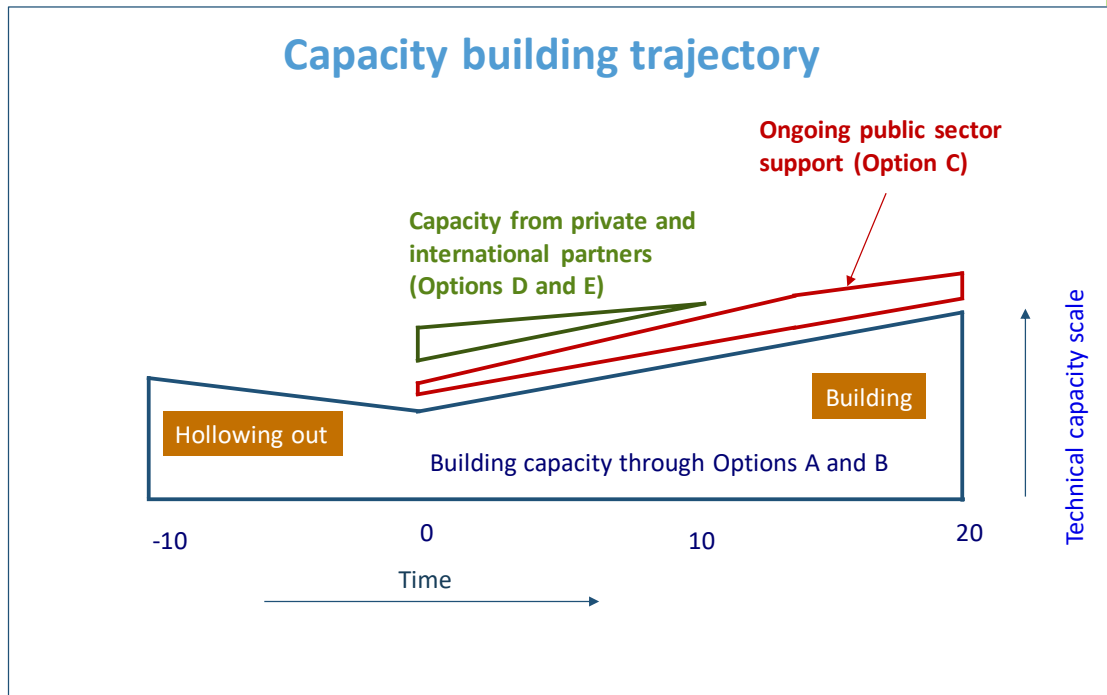
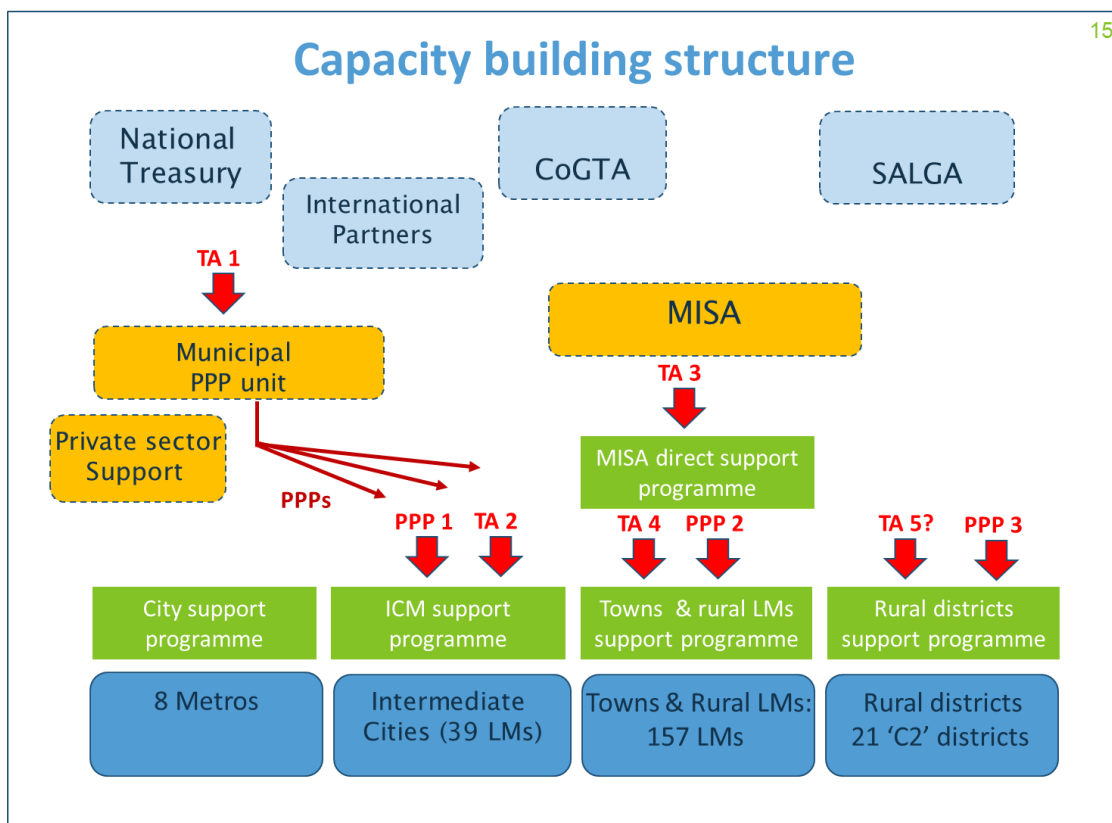


Figure 10: Diagram showing proposed trajectory of capacity building initiatives

Aligning technical assistance and PPPs with existing programmes

The four major existing municipal support programmes have been described above. Each of these can, and should, continue but with possible re-design in some cases. The essence of this proposed capacity building strategy is to expand these programmes and to introduce PPPs. There is much work to be done to plan for the proposed technical assistance and PPP implementation, with proposals made below being only preliminary conceptual positions, fitting into the structure shown in the diagram below.



Note: TA stands for technical assistance; PPP stands to PPP support

Figure 11: Structure of proposed technical assistance arrangements aligned with four programmes

1. **City Support Programme.** This programme is adequately resourced and staffed currently but will benefit from finance for particular projects identified under the programme.
2. **Intermediate City Municipality Support Programme.**
 - **TA 2:** While the programme has a design, with a PMU located internal to DCoG, it requires technical assistance in the form of engineering expertise to assist in setting up bankable projects and improving the operating and maintenance of infrastructure-intensive services, particularly for the organisationally weaker cities (several of these cities were rated by DCoG as dysfunctional in 2018).
 - **PPP 1:** Many of the ICMs are large enough to benefit from PPPs to improve service provision. For example, some may benefit from management contracts, there will be opportunities for BOT contracts for bulk water or wastewater treatment; and there are options to establish new water and sanitation concessions, based on the example of the Mbombela concession, already functioning in Mbombela, itself an ICM.
3. **MISA direct support programme.**

It is argued here that MISA is best suited to support the 100 odd local municipalities classified as towns, and some 57 odd local municipalities which are largely rural. This, in itself, is a very large task. It is argued further that technical support for the 21 rural (C2) districts which are water services authorities should

be undertaken by regional management support contracts (RMSCs) should be expanded as PPPs, under the supervision of the the proposed Municipal PPP unit.

- **TA 3:** MISA is an established entity which runs a direct support programme for municipalities, using in-house staff. However, as mentioned above, it requires TA to, inter alia, establish a strategic direction, set up structured relationships with the municipalities it serves and monitor support interventions. Assistance in expanding MISA's framework contracts for purchasing equipment and materials.

4. Towns and rural LMs support programme

This programme only exists partially as the 'small towns regeneration' programme. The programme needs to be re-designed and expanded to cover all 157 **local municipalities** which are not cities.

- **TA 4:** Technical assistance is required to re-design the 'towns and rural' support programme with a focus in improving service provision and increasing access to non-grant finance.
- **PPP2:** The state of services in many of these municipalities is poor and there are opportunities for PPPs to bring a substantial step-up in the scale and quality of services. Given the relatively small size of these municipalities it is probable that PPPs will need to be set up for groups of municipalities. As wastewater treatment is one of the biggest concerns, an example of a PPP is a BOT contract to finance, rehabilitate and operate wastewater treatment works in several municipalities.

5. Rural districts support programme

The 21 districts which are water service authorities are a special case both because of the very poor state of infrastructure and associated water and sanitation services, and because of their large size (average of 850,000 people per district). As they are relatively weak economically, they are not yet in a position to take up long term debt. The priority is to dramatically improve their capacity to manage their infrastructure.

- **TA 5?:** It is uncertain whether technical assistance is required for this programme as support can probably all be achieved through management contracts.
- **PPP 3:** As noted above, a business plan was developed by MISA in 2015 and supported conceptually by DCoG, with funding allocated by NT for the first phase. However, after three years of implementation the achievements are very limited but with some experience gained in three districts. It is arguable that this large scale PPP programme, based on management contract principles, should be under the direction of a specialist PPP unit.

Role of national and international entities

The success of municipal infrastructure provision in the majority of municipalities depends substantially on the support they receive from national departments, national entities, and international partners. Proposals for these bodies are made below.

DCoG

DCoG will continue in its central role to oversee local government affairs and support all programmes for building capacity. It will take a more direct role in managing the ICM support Programme, with this benefiting from technical assistance from international partners.

National Treasury and the Municipal PPP unit

GTAC, part of National Treasury, has a PPP unit. Municipal PPPs are included under its mandate but, based on admittedly limited research, the GTAC PPP unit has not been sufficiently focused on municipal PPPs and, what has been done, has been primarily demand responsive. What is needed is a substantial increase in this activity under a specialised Municipal PPP Unit which will take a much more interventionist approach and design and manage PPPs as part of the five capacity building programmes identified above. Such a unit does not necessarily need to be located in NT and could, for example, be located in MISA or DBSA (as was the case with the long-gone Municipal Infrastructure Investment Unit). But there are good arguments for it to remain in GTAC, given the direct association with new finance flows for municipal infrastructure.

- **TA1:** In order to build the capacity of a Municipal PPP Unit, technical assistance will be needed.

SALGA

SALGA will obviously continue with its role as representing local government and providing support. It is proposed that SALGA also takes direct responsibility, with assistance from MISA for the 'towns and rural municipalities' support programme.

MISA

MISA will continue to have a central role to play with capacity building Options A and B (building existing capacity and sector development). It should also continue with direct assistance to the 157 local municipalities which are not cities (Option C). In doing this it will share responsibility with SALGA and benefit from technical assistance from international partners and from PPP projects set up under the Municipal PPP Unit.

Private business support organisations

These organisations have a direct interest in creating opportunities for the private sector in providing municipal services and can support the much scaled up PPP programmes.

International partners

With public sector technical expertise in decline over the past decade and existing LG support organisations lacking capacity to sufficiently support municipalities, there is an important role to be provided by international partners. In the case of international development finance institutions (DFIs), both bilateral and multi-lateral, there are public good objectives as well as the objective to open up new opportunities to finance

municipal infrastructure, whether this be on the balance sheets of higher performing municipalities, for individual projects, or through municipal PPPs. International experience, and access to high level infrastructure management expertise available to international partners, will allow for a large step up in the capability of local government in South Africa. But this will need to be undertaken at large scale through one of other of the five technical assistance channels identified above.

Annexure – methodology for using NT SA24 report data

The following steps were taken to analyse the SA24 data:

1. Data downloaded from SA24 reports for years 2015/16 to 2019/20. Data selected for: Managers; Professionals-total; Professionals-water; Professionals-sanitation; Technicians-total; Technicians-water; Technicians-sanitation; and Staff-total. But given the emphasis of this capacity building analysis emphasis was placed on total professionals and water services (water and sanitation) professionals.
2. MIIF municipal categories added.
3. Identity of the municipality as a water services authority (WSA), or not, was added.
4. Data sorted by MIIF category.
5. Quality of data assessed for each municipality firstly to check if figures are realistic and secondly if there are at least four out of five years of records. These municipalities were given a 'C' quality designation and are not used in the analysis.
6. Where the figures looked realistic and only one year of data is missing the municipality was given a 'B' quality rating.
7. For the 'B' quality municipalities where one year of data is missing, the data was added by interpolating between the year on either side of the missing year. If the missing year was at the start or end of the sequence the figures were added to be the same as the following or previous year, respectively.
8. Summary tables prepared for municipalities for all the staff categories mention in Item 1 above for five years by MIIF category and WSA category.
9. Data further summarised to focus on trends by MIIF categories for total professionals and water services professionals.

Summary of sampling:

MIIF category	Sample quality	No of munics	Percent used
A	A	4	75%
A	B	2	
A	C	2	
B1	A	8	84%
B1	B	8	
B1	C	3	
B2	A	7	73%
B2	B	12	
B2	C	7	
B3	A	19	47%
B3	B	28	
B3	C	53	
B4	A	20	67%
B4	B	20	

B4	C	20	
C1	A	4	61%
C1	B	10	
C1	C	9	
C2	A	1	38%
C2	B	7	
C2	C	13	
All	A	63	58%
All	B	87	
All	C	107	

Note on data quality:

Probably the biggest concern is over the way municipalities interpret the term 'professional'. In many cases the numbers given are far too high for this to be taken as university or technicon (technologist) graduates. These were excluded ('C' quality). Situations where there were big jumps from year to year were excluded as this was probably a change in the way the municipality interpreted the term 'professional'.