PAPER 1

LESSONS FROM A REVIEW OF RURAL WATER AND SANITATION SERVICES IN SOUTH AFRICA: 2003-2022

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ABSTRACT

More than twenty years has passed since the restructuring of local government in South Africa and since the promulgation of the Free Basic Water Policy. While the percentage of South Africa's rural population with access to a piped water supply increased from 44% in 1994 to 74% in 2022, according to census records the reliability of the supply is not good. Only 48.4% of the rural households with access to a piped water supply reported in 2011 that the supply was stable. In 2016 that number had improved marginally, to 51.7%. Due to problems with data quality Statistics SA has chosen not the publish the reliability data from Census 2022. Meanwhile many of the District Municipalities responsible for rural water provision (the 21 Category C2 District Municipalities) have become progressively more cash strapped. An analysis of the audited annual financial statements for the 2021/2022 financial year for the 21 C2 Districts shows that the median ratio of service income to total income was 10%, the other 90% of their income being derived from grants from national government. The most useful indicator to determine a municipality's financial health is its Operating Cash on Hand, which measures how many months the entity can continue operating without receiving any income. For the 21 C2 districts, the median Operating Cash on Hand in June 2022 was minus 4.7 months. In other words, they are using a significant portion of the current year's income to pay the previous year's debts. For many of the C2 municipalities this indicator has been trending steadily downwards over the past 10 years.

It is therefore timeous to step back and look at how water services are managed in South Africa, and whether the goal of piped water to all in the yard or home is achievable and sustainable. Nowhere is the challenge of meeting this goal harder than in South Africa's rural areas, where settlements are small and dispersed over large areas, and where the greater part of the population have very low incomes.

The study of these twenty-one municipalities provides answers to the following questions:

- How have these municipalities fared?
- What lessons can be drawn from the experience of the last 20 years?
- Can water supply to rural settlements be financially self-sustaining?
- Are municipalities receiving sufficient operations grant funding to meet their responsibilities?

1. INTRODUCTION

When Nelson Mandela was elected president of South Africa in 1994 as the leader of the African National Congress, one of his new government's priorities was to provide access to an improved water supply to all citizens of the country. At the time 70.4% of South Africa's 21.6 million people who lived in towns and cities did have a piped water supply, but of the 15.8 million people living in South Africa's rural areas only 44.4% had access to piped water within 200 metres of the home (see Figure 1)[1]. Since 1994 more and more piped water schemes have been built in rural areas, so that by 2022 the Department of Water and Sanitation estimated that 74% of the rural population had a piped water supply.

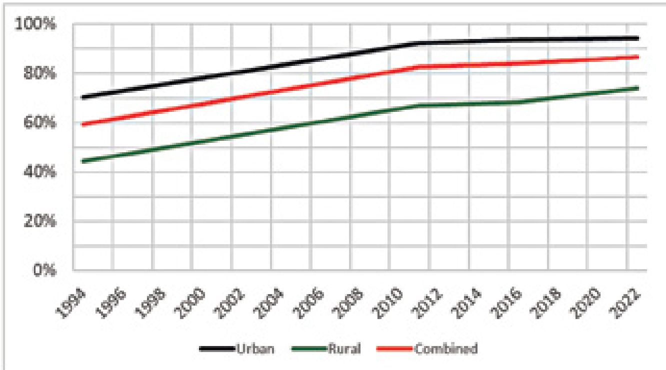

FIGURE 1: *The percentage of the population served with piped water within 200 metres of the home (Department of Water and Sanitation, Water Services Knowledge System)*

Nowhere is the challenge of meeting the goal of piped water for all harder than in South Africa's rural areas, where settlements are small and dispersed over large areas, and where the greater part of the population have very low incomes. This study accordingly focuses on the 21 Category C2 district municipalities which jointly account for 65% of South Africa's rural population, and which have no function other than the supply of water and sanitation services.

2. SOUTH AFRICA's 21 C2 DISTRICT MUNICIPALITIES

There are 257 municipalities in South Africa, comprising: Category A, eight metropolitan municipalities; Category B, 205 local municipalities; and Category C, 44 district municipalities. Of those 257 municipalities, 144 are designated as Water Services Authorities (WSAs), which means they are responsible for the provision of water and sanitation services to the people resident within their boundaries. Twenty one of the 144 WSAs are District Municipalities, and these are called C2 District Municipalities. Five of those are in the Eastern Cape: Amathole; Chris Hani; Joes Gqabi; OR Tambo; and Alfred Nzo. Ten are in KwaZulu-Natal: Ugu; uMgungundlovu; uThukela; uMzinyathi; Amajuba; Zululand; uMkhanyakude; King Cetshwayo; iLembe; and Harry Gwala. Four are in Limpopo: Mopani; Vhembe; Capricorn; and Sekhukhune. And two are in the North West: Ngaka Modiri Molema; and Dr Ruth Segomotsi.

The C2 district municipalities cover large areas incorporating small towns, farms and rural villages. The largest of these districts is Dr Ruth Sekomotsi in the North West Province, which spans 43 753 km^2 , and the smallest is Ilembe in KwaZulu-Natal with an area of 3 270 km^2. The median area for a C2 district is 13 527 km^2 and the average area is 16 269 km^2. By way of comparison, the

[1] *All data quoted in this paper is sourced from government databases and records – see the references at the end.*

Johannesburg Metropolitan Municiaplity has an area of 1 645 km^2, and the eThekwini Metropolitan Municipality has an area of 2 556 km^2. Managing water and sanitation services over such large areas poses a significant management and logistical challenge.

In 2022, according to Statistics South Africa's Census, the combined population of the twenty-one C2 district municipalities was 17 390 011, 28% of South Africa's total population. Within the boundaries of those twenty-one municipalities live 65% of South Africa's rural population. The populations of the C2 districts vary considerably, with the Vhembe District in the Limpopo Province having the largest population at 1 653 077 people, according to Statistics SA's 2022 Census. The district with the smallest population is Amajuba in KwaZulu-Natal, which serves just 179 698 people, according to Census 2022. The median population served for the C2 districts in 2022 was 782 661, and the average served was 828 096.[2]

Some of the C2 districts are more rural than others. Joe Gqabi in the Eastern Cape and Ilembe in KwaZulu-Natal have more than a third of their populations living in towns, while less than 5% of the population of the uMkhanyakude District in KwaZulu-Natal and the Sekhukune District in Limpopo live in towns. It is advantageous to have some mid-size towns in or adjacent to the district, as that makes it easier to hire and retain skilled staff. It also makes it more likely that the district will have some income from services. As a general rule, people who live on freehold land in towns are more likely to pay for services, whereas those who live on communal land in rural areas generally do not pay for services.

3. PROGRESS WITH SERVICE DELIVERY

The C2 municipalities were only established in 2001, after the restructuring of local government in South Africa and the first round of the new local government elections. There then followed a period of several years while the responsibility for service provision, and the capacity to do that provision, was sorted out between the various municipalities and other role players in South Africa (including water boards and the then equivalent of the Department of Water and Sanitation). It was therefore generally not before 2006 or 2007, and sometimes not until 2010, before the various bodies had settled into their new responsibilities. The 2011 Census carried out by Statistics South Africa is, therefore, the first baseline from which progress in service delivery at municipal level can be measured.

The internationally recognised standard for access to water supply, used by the World Health Organisation and UNICEF's Joint Monitoring Programme (JMP)[3], is the presence of a working tap or a handpump within 200 metres. That is called the JMP definition for water supply access. In 2011, a median of 65.9% of the households served by the C2 Districts had access to water, on that standard[4]. By 2022, the median share with access to water had increased to 73.8%. Note that the population increased between 2011 and 2022, with the number of households in the C2 districts increasing from 3.6 million to 4.1 million. The number of households served by the C2 districts increased from 2.4 million in 2011 to 3.3 in 2022 million, an increase of 0.9 million households.

Progress has not been evenly distributed between the twenty-one districts. For example, while the Zululand District in KwaZulu-Natal increased coverage from 62.4% in 2011 to 73.8% in 2022, the Mopani District in Limpopo presided over a *decrease* in the percentage coverage, from 69.8% in 2011 to 67.5% in 2022.

For the C2 districts, the increase in access to basic sanitation between 2011 and 2022 has been more significant. The Joint Monitoring Project defines access to sanitation as having at least an improved pit latrine, which is not shared with other families. Between 2011 and 2022 the median sanitation access improved from 43.9% to 73.5%. In percentage terms, the greatest progress has been made by the Amathole and Amajuba Districts, which increased their sanitation coverage *by* 55% and 52% respectively.

The progress in water and sanitation coverage has been financed by grants received from the national treasury, both directly through the Municipal Infrastructure Grant (MIG) and Water Services Infrastructure Grant (WSIG)[5] programmes and indirectly through the RBIG programme. Jointly, from 2011 to 2022 the grants to the C2 municipalities amounted to R129 billion (in 2024 Rands). In that time 663 000 households gained access to a water supply. Assuming that 70% of the MIG and WSIG grant funding was spent on water supply and 30% on sanitation, and that all of the RBIG funding was spent on water supply, the average cost for every new household added to the number with access to water came to R147 000 in 2024. With a backlog in 2022 of 1.3 million households still not covered by the C2 municipalities, it will take another R191 billion in 2024 for complete coverage. However, this simplistic analysis neglects to take into account the fact that the population will continue to grow, and that those households not yet supplied with water will be harder to serve (otherwise they would by now have been served). When one looks at capital spending per new household added at a district level, some districts stand out. For example, the King Cetshwayo district spent approximately R3.4 billion in 2024 in capital grants on water projects between 2011 and 2022, during which time the number of households connected increased by only 2 107. Likewise the uMkhanyakude District Municipality spent R4.7 billion in 2024 and coverage increased by only 4 707 households. The implication is that most of the money has been spent in replacing or extensively refurbishing existing water supply systems, and not in extending them. The municipalities with the most economical ratio of capital spending to new houses connected were Ilembe and Joe Gqabi, both working out at R43 000 per household added (in 2024 rands).

4. QUALITY AND RELIABILITY OF SERVICE

Every two years the Department of Water and Sanitation conducts the Blue and Green Drop audits of the water supply and sanitation services in each of the 144 Water Services Authorities of South Africa. These audits are focused mainly on water treatment and wastewater treatment plants.

[2] *Note that there are four C2 districts whose area of responsibility (and hence population served) excludes the main town within their boundary. These are:*

- *uMgungundlovu in KwaZulu-Natal, which does not include the Msunduzi LM (Pietermaritzburg)*
- *Amajuba in KwaZulu-Natal, which does not include the Newcastle LM*
- *King Cetshwayo in KwaZulu-Natal, which does not include the Mhlatuze LM (Empangeni and Richards Bay)*
- *Capricorn in Limpopo Province, which does not include the Polokwane LM*

The Buffalo City Metro in the Eastern Cape (East London) falls outside the boundaries of the Amathole DM.

[3] *Established in 1990, the WHO and Unicef's Joint Monitoring Programme is the custodian of global data on Water Supply, Sanitation and Hygiene (WASH) - https://washdata.org/*

[4] *All service delivery figures are drawn from Statistics SA reports, i.e. the 10 yearly Census reports and the intermediate Community Survey report, or from the Department of Water and Sanitation's Water Services Knowledge System which is based on census data, https://ws.dws.gov.za/wsks/default.aspx.*

[5] *In 2016/2017 the Water Services Infrastructure Grant replaced the Municipal Water Infrastructure Grant. In this study the figures from both grants are combined.*

The median Blue Drop score for the 21 C2 municipalities in 2023 was 54.8%. This is on the lower end of the Average range and just outside the Very Poor range. In 2023 the total number of Water Treatment Plants assessed by the Blue Drop auditors in the C2 municipalities was 340. The median number of water treatment plants per district is 14, and the average treatment plant size is 8.6 ML/d. When one considers the very large areas covered by these districts, the complexity of the work and the minimum staffing requirements to run a water treatment plant, it can be appreciated the extent of the challenge faced by the C2 districts. In comparison, the water services manager for a metropolitan municipality may only have to manage two or three treatment plants, or may receive all bulk water from a water board, so may not have to manage any water treatment plants at all.

The C2 districts have fared even worse with their management of wastewater treatment plants. The median score for the districts in 2021/2022 was 38%, in the middle of the Very Poor range. The typical C2 district manages 12 wastewater treatment plants, spread over a large area, which poses a significant management challenge. Note that the Green Drop audit is mainly a measure of administrative compliance. Only 27% of the possible score comes from an assessment of the effluent quality. The assumption made by the Department of Water and Sanitation's audit system is that a water services institution which is administratively compliant, for example having the right number of suitably qualified operators in place, will be more likely to achieve good quality outcomes. The system also does not measure what percentage of sewage actually reaches the wastewater plants, and there are many instances where high Green Drop scores are awarded to plants where 50% or more of the sewage goes missing before treatment.

The reliability of rural water supply systems is another question. The presence of a water supply system does not mean that water is supplied. In 2011 and again in 2016 Statistics SA asked respondents whether they had had any service interruptions of longer than two days in the last 90 days, or cumulatively more than 15 days of shorter interruptions in the last 90 days. If the respondent answered yes, then that supply was deemed unreliable. There is thus data available that shows the measure of reliability and how it changed between 2011 and 2016, but Statistics SA has decided not to publish the detailed reliability data from the 2022 census (due to data quality concerns), so it is not possible to say in which direction the trend has gone since 2016. The average reliability for the C2 districts was 48.4% in 2011. By 2016, this had improved to 51.7%.[6]

One of the contributing factors to poor reliability is a lack of maintenance. Municipalities are required by the Treasury Department to report in their financial statements on the amount of money they spend each year on maintenance. Unfortunately, there is no common standard for the way the maintenance expenditure is reflected in the financial statements. Some municipalities show maintenance as a line item in their summary of income and expenditure, but others show it only in the notes to their financial statements. The median amount reported as spent on maintenance by the C2 districts is 0.6% of the book value of their assets, far lower than the 8% which is the Treasury guideline. It is, however, probable that municipalities are under reporting their maintenance expenditure. For example, any staff time spent doing maintenance will be captured under personnel cost, not maintenance.

5. SUSTAINABILITY – A LOOK AT FINANCIAL HEALTH

While service delivery is the reason for the existence of municipalities, specifically in the case of C2 districts the provision of water and sanitation services, if a municipality bankrupts itself in the effort to provide services, the services will not be sustainable. Conversely, if a municipality's finances are sound, but it does not provide most of those living within its boundaries with services, then one can reasonably question whether the main reason for the bank balance being healthy is due to the municipality not spending enough money on the performance of its work.

Superficially all the C2 district municipalities have a positive Net Asset Value[7], i.e. the total value of their assets exceeds the total value of their liabilities. Every year their income and expenditure statements invariably reflect a profit, so one might think their finances were healthy. However, the key factor in the "profit" is that the municipalities have been given a significant amount of grant funds to build new infrastructure, which is not expensed, but capitalised. The overwhelming share, in many cases more than 100%, of the municipalities' net assets comprises their infrastructure, which cannot be sold or used as collateral for loans.

The usual business ratios such as Current Ratio (Current Assets over Current Liabilities) and Cash Ratio (Cash and Cash Equivalents over Current Liabilities) are of limited use when assessing the financial health of C2 district municipalities. For example, one municipality may have little cash, but also a low amount of current liabilities and another may have not much cash and a large amount of current liabilities, and their Cash Ratios may be very similar. The municipalities have a guaranteed income stream in the form of operations grants, which forms the bulk of their income. The real test of how critical a state the finances are in is how many months of operating cash (i.e. cash to cover operating expenses) the municipality has in the bank.

Figure 2 shows the Operating Cash on Hand on 30 June 2023 for the twenty-one C2 districts, measured in months. It can be seen that only four of the twenty-one C2 municipalities have a positive balance of Operating Cash on Hand: Alfred Nzo; Capricorn; Sekhukhune and Ilembe. Ten of the C2 municipalities are more than five months in the red as far as Operating Cash is concerned. This means they are effectively using more than the first

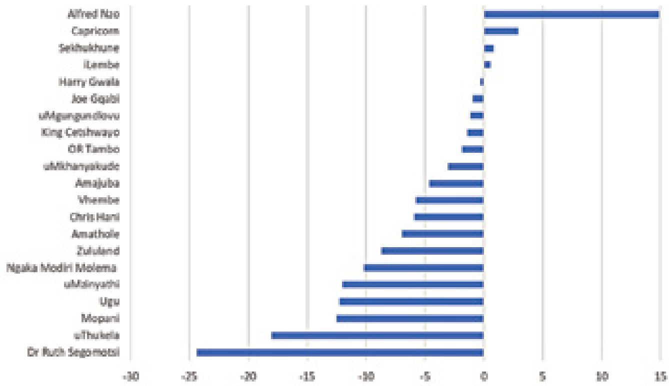

FIGURE 2: *Months of Operating Cash on Hand (Cash less Current Liabilities)/Annual Operating Costs) x 12) as at 30 June 2023*

[6] *The indicator used by Statistics SA for measuring reliability is not ideal. A water supply which has interruptions of, say, 16 days in a 90-day cycle will be deemed unreliable, but not less unreliable than a system which only works, say, 16 days in a 90-day cycle. As supply interruptions are a common feature of rural water supply systems, more nuanced indicators would be helpful. Examples would be indicators which measure what portion of the time reservoirs are not empty, and indicators which measure what portion of the time pumpstations are functional.*

[7] *All financial data in this paper comes from the Audited Annual Financial Statements of the municipalities. Statements up to 2020 can be found at http://mfma.treasury.gov.za/Documents/Forms/AllItems.aspx. More recent documents can be found at https://lg.treasury.gov.za/ibi_apps/portal/Municipal_Documentation*

FIGURE 3: *Zululand District Municipality, months of Operating Cash on Hand (2011 to 2024)*

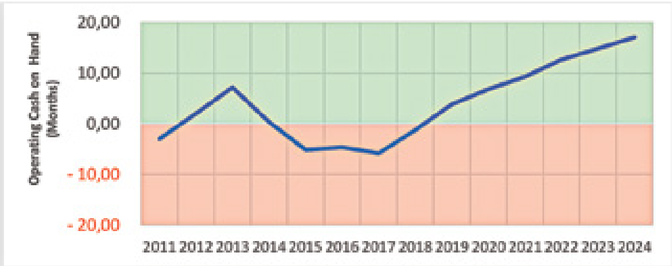

FIGURE 4: *Alfred Nzo District Municipality, months of Operating Cash on Hand (2011 to 2024)*

five months of this year's income to pay the balance of last year's operating costs, which is not healthy. This typically means that suppliers and service providers will be paid late, or that essential maintenance will be neglected.

A graph showing how a municipality's Operating Cash on Hand changes from year to year gives a clear picture of the *trend* of its financial health, i.e. whether it is getting stronger or weaker. For example, Figure 3 shows the Zululand District Municipality's Operating Cash on Hand (in months) from 2011 to 2024. Whereas in 2011 and 2012 the municipality did have two or three months of Operating Cash on Hand, since 2012 its cash position has trended steadily negative. By 2024 it had minus 8 months of Operating Cash on Hand, which means it was financially very stressed. This in turn would have affected its ability to provide services. Figure 4 shows the Alfred Nzo District Municipality's Operating Cash on Hand over the same period. The municipality was on a negative trend from 2013 to 2015. Between 2015 and 2017 there was a turnaround after the senior management team at the municipality was replaced, and since then it has become stronger with each succeeding year. By 2024 this municipality had 17 months of Operating Cash on Hand. Twenty years after the new local government structures began operations, Alfred Nzo is the *only* one of the twenty-one C2 municipalities which finds itself in a truly strong and healthy financial position.

6. WHERE DOES THE MONEY GO?

For many municipalities their single biggest expense is their payroll. Figure 5 shows the payroll cost as a percentage of total income for the twenty-one C2 municipalities for 2022. In that year uThukela and Amathole spent two thirds of their income on their payroll. Ilembe was more economical, spending only 30%. The median for the twenty-one C2 municipalities was 45%. Note that some municipalities, for example Ngaka Modiri Molema, have delegated much of the work entailed in water service provision to the local municipalities in their district, but still spent 45% of their income on their own staff. The municipalities with the lowest payroll expenditure are typically those which do not have to run their own water treatment and wastewater treatment works, but have outsourced that work to others, such as Water Boards (Ilembe, King Cetshwayo and uMgungundlovu for example).

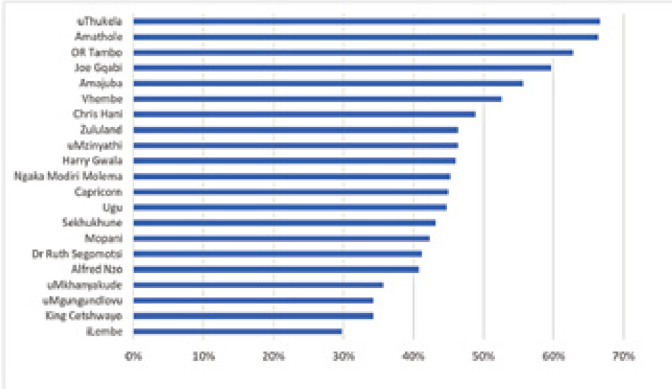

FIGURE 5: *Cost of staff as % of income*

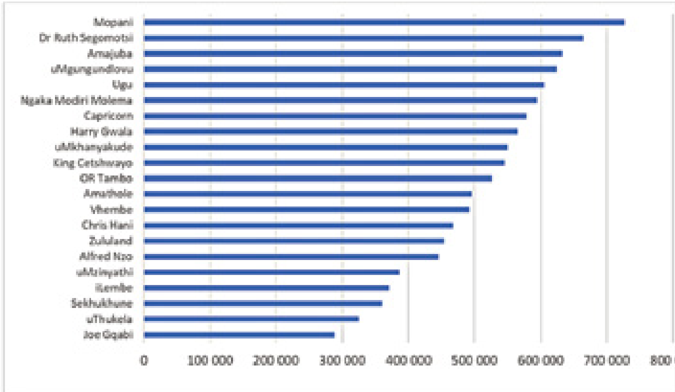

FIGURE 6: *Average annual cost per staff member for the C2 municipalities (2022)*

Figure 6 shows the average cost of the staff. In 2022 the median of the average cost of staff for the C2 municipalities was R524 474. Note that for these calculations the total number of staff employed is used, not the total specifically employed on water and sanitation services. However, the provision of water and sanitation is the only service these municipalities perform.

By way of comparison, in 1999 a 30-year concession was awarded for management of water services on the Dolphin Coast (north of Durban). The concessionaire is Siza Water. In 2022 Siza employed 95 people to serve 77 000 people. Their payroll cost was R22 035 000, making their average cost of staff R231 947, and their cost per 1 000 people served R286 168. Their payroll is 18% of their income.

7. ARE THE OPERATIONS GRANTS SUFFICIENT?

The operational grant income is the principal source of income for the C2 district municipalities (90% of income comes from the operations grants for the C2 municipalities). As Figure 2 shows, most of the C2 municipalities are financially distressed, using this year's income to pay for nearly half of last year's expenses, and as the Blue Drop and Green Drop audits show, service delivery is not going particularly well.

From the district municipalities' perspective, the simplest solution to their financial (and operational) problems would be to increase the operations grants[8]. However, the level of grants currently paid does vary quite significantly across the twenty-one districts, with six of the districts (uMgungundlovu,

[8] *For context, note that it can be shown that the grants are fairly generous by international standards, exceeding the amounts that the districts would be earning if every household was billed for the water they used at typical tariffs, and if every household paid their bills.*

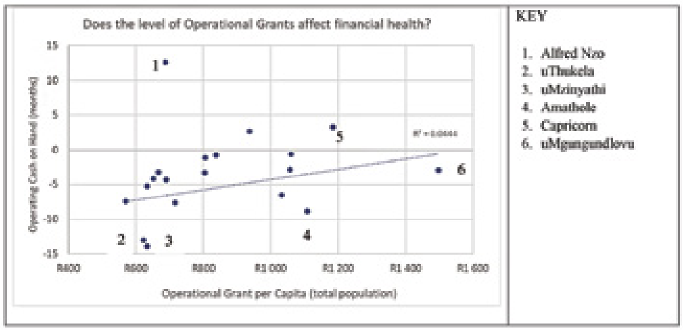

FIGURE 7: *The relationship between the level of operational grant per capita and the C2 municipalities' financial health (as measured by Operating Cash on Hand, June 2022)*

Amajuba, King Cetshwayo, Amathole, Joe Gqabi and Capricorn) receiving significantly more than the other districts due to their legacy with the Regional Services Levy replacement grants. If an increase in operations grants was all that was needed to fix these districts, then the districts with higher operations grants would all be doing better than their peers, but they are not. In June 2022 Amathole, for example, had Operating Cash on Hand of minus 9 months, despite being one of the more generously endowed municipalities as far as operations grants are concerned, while the Alfred Nzo District Muncipality had Operating Cash on Hand of plus 12 months, despite being one of the more poorly endowed municipalities. Figure 7 shows that the correlation between the level of operations grants received by the C2 municipalities and their financial health (as measured by Operating Cash on Hand) is weak.

Figure 7 indicates that the solution to the C2 municipalities financial distress is not simply a matter of increasing their operations grants. That does not, however, mean that the grants necessarily are sufficient.

A fairly good estimate of operational costs can be made by :

a) Estimating the value of the infrastructure under management by the municipality. This can be done by multiplying the service level data obtained from Census 2022 by standard unit values[9].
b) Multiplying the estimated infrastructure value by standard percentages for operations and maintenance.[10]

Using this method, it is found that the operations grants exceed the estimated cost of operations and maintenance for just three of the C2 municipalities. When income (receipts as opposed to billing) from service charges is factored in, it appears that five of the 21 C2 districts should have enough money to perform their functions and keep the infrastructure in good condition, while the other sixteen do not have enough funds. Figure 8 shows the adequacy of current income levels vs modelled operations and maintenance costs across the twenty-one C2 municipalities. For the typical C2 municipality its total income (grants and service charges) is only 70% of the amount it should ideally have to properly operate and maintain its infrastructure.

[9] *The unit values used for this exercise were: R60 000/hh for a yard connection; R30 000/hh for access via public standpipe; R80 000/hh for a flush toilet connected to a municipal sewer; R25 000 for a toilet connected to a septic tank; and R15 000 for a VIP toilet.*

[10] *The percentages used for this exercise – based on literature review - were 1.5% of Current Replacement Cost for maintenance, 3% for operations, 2% for capital maintenance and a 15% overhead on all of the above.*

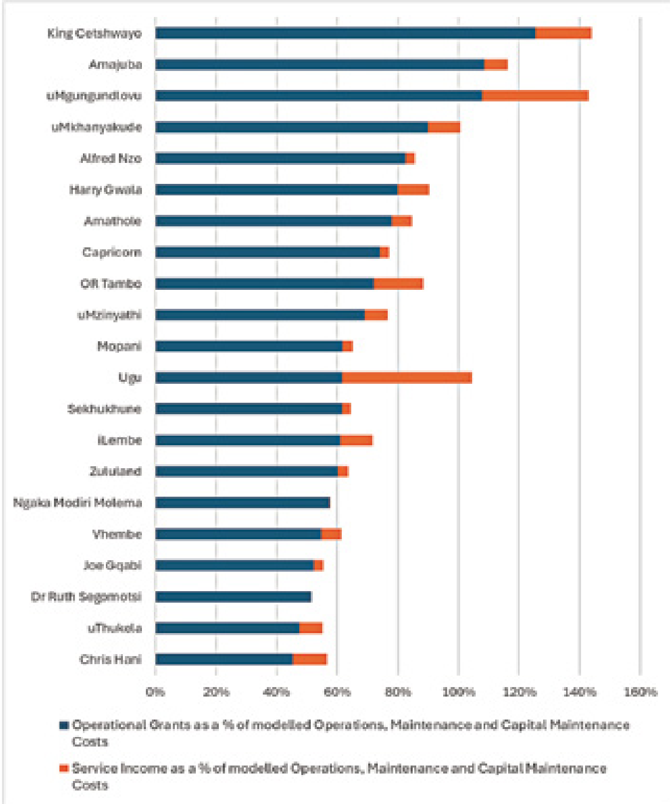

FIGURE 8: *Operations grants and services income as a percentage of modelled operations costs for the C2 municipalities*

8. WHAT CAN BE DONE TO INCREASE INCOME?

Figure 9 shows the amounts billed by the twenty-one C2 municipalities for services in their 2022 financial year, as well as the amount which they received in payment for services in that year. The typical C2 municipality only collects 60% of the amount it bills each year. While they do aim to improve their recovery rates, Figure 8 shows that for most C2 municipalities, even if their service income doubled, their overall income would still fall short of their needs. Municipalities could also increase the total amount that they bill, but there are two major challenges in this regard:

- The Free Basic Water policy, introduced by the national government in 2001, means that municipalities have an obligation to provide a basic supply water to indigent households for free. Due to the administrative difficulties of differentiating between those who are truly indigent and those who are not, and limiting qualifying households to just the basic monthly volume, most municipalities simply use geographic criteria for determining who gets billed and who does not, and the way that works in practice is that people living in towns tend to be billed for their water consumption and people living in rural areas on communal land (i.e. much of the population of the C2 municipalities) tend not to be billed.
- Due to logistic challenges, rural water supply is very expensive, much more expensive than urban water supply. Realistic (cost-based) tariffs would be unaffordable to their customers.

9. CONCLUSIONS

The water supply and sanitation services for 28% of South Africa's total population and 65% of South Africa's rural population are the responsibility of twenty-one C2 District Municipalities which are designated Water Services Authorities: ten in KwaZulu-Natal; five in the Eastern Cape; four in Limpopo; and two in the North West. With more than 20 years having passed since local government in South Africa was fundamentally restructured and the powers and functions of local government were resolved, it is fitting to review what can be learned from the experience of these 21 District Water Services Authorities.

The job of water services provision in a C2 district is not easy. The districts are very large, typically an order of magnitude larger than those covered by the better resourced metropolitan municipalities. Also, whereas the Water Services Manager for a city may only have to manage one or two water treatment plants, or perhaps none at all (bulk water being supplied by a water board), Water Services Managers for the C2 municipalities have to manage on average 16 water treatment plants each. Performance - as measured by the speed of backlog eradication, Blue Drop scores, Green Drop scores and reliability of services – is generally not good.

This is in a context where much or even most of the water supplied is perceived as "free basic water", whether it is meant to be or not, so income from services from consumers does not come close to covering the cost of operations. For the C2 municipalities the operational grants received from Treasury (the Equitable Share and Regional Services Council Replacement levies) typically provide 90% of their income. All but four of the 21 C2 municipalities are cash strapped, with the typical district requiring five months of the new year's income to pay the balance of the last year's operating costs. The obvious solution would be to increase the operations grants, but in practice these grants vary quite significantly from district to district and there is little correlation between the level of per capita operations grants and the financial health of the municipalities. The grants are fairly generous by international standards, exceeding the amounts that the districts would be earning if every household was billed for all the water they used at normal tariffs, and if every household paid their bills. However, even with these generous grants and assuming income from service charges was maximised as far as is possible in the South African context, sixteen of the 21 C2 districts would still not have enough income to adequately operate and maintain the infrastructure under their management. In South Africa we have built a lot of expensive infrastructure in places where there is very little money to sustain it.

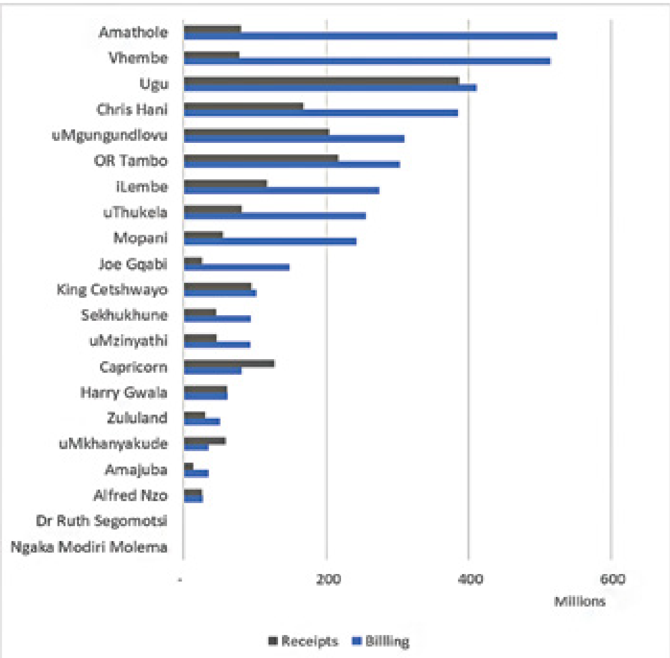

FIGURE 9: *Billing and receipts for the C2 municipalities (2022)*

Compounding the challenge faced by municipalities is their experience that the procurement system under which they operate (the Municipal Finance Management Act) does not facilitate cost-effective and efficient service delivery (MacLeod, 2024).

Municipalities are coping with the lack of funds by paying their bills late, or in some cases by not paying them at all. They are also not spending enough on operations and maintenance, which is one of the key reasons for their poor service delivery record. The financial trajectory of most of the C2 municipalities is negative and is likely to become more so as more and more expensive infrastructure is added without a proportionate increase in their income.

As is true of most water service provision organisations, staff costs are the single largest expense for the C2 districts, with the median payroll cost being 45% of income. The median annual cost per employee in 2022 was R524 474. In contrast, Siza Water, which has been running the Dolphin Coast water concession since 1999, had an average annual staff cost of only R231 947 in 2022, and was spending only 18% of its income on staff.

While consolidating service provision at district level and ring fencing of water services in municipal accounts are both proposed as possible solutions for the crisis with water services provision in South Africa, the experience of the C2 district municipalities, which only provide water services, shows that these solutions, as advisable as they may be, are not in themselves sufficient to ensure good service provision and healthy finances.

10. RECOMMENDATIONS

A number of recommendations flow from the conclusions of this work:

1. There should be continuous effort to improve the cost-efficiency and effectiveness of the C2 district municipalities. The fact that some, admittedly not many, of the C2 districts are doing reasonably well demonstrates that the rest could do better. Instead of trying to do everything in-house, WSAs should consider the use of Community Based Organisations, Water Boards and Public Private Partnerships to provide some aspects of the services which they use. There are successful examples of these arrangements among the twenty-one districts which they could learn from.
2. There is evidence that a good management team (Municipal Manager, Chief Financial Officer and Technical Director) can, given positive and strong political support, turn the fortunes of a municipality around. Where municipalities are performing badly, serious consideration should be given to appointing competent replacements.
3. Municipalities need to become much stricter with customers who do not pay their bills. This can only be done with strong political support. It is simply not sustainable to write off nearly 50% of municipal service income every year.
4. There needs to be a move away from expensive and complex technical solutions to simpler and more affordable options. Modular, adaptive and decentralised technologies should be favoured over large-scale regional schemes which are expensive to build and complex to operate. This is especially the case as efforts are made to supply water to the most remote communities which do not yet have access to a basic level of water and sanitation.
5. Expenditure on maintenance needs to be given a higher priority. While more funding for maintenance, especially capital maintenance, could be made available through changes in national policy with respect to the rules for the use of capital grants, at local government level funding for maintenances could be increased by making savings elsewhere.
6. There is great disparity in the level of the operations grants, on a per capita basis, paid to the different C2 districts. While there may not necessarily be

a sound argument for increasing operations grants across the board, there certainly is an argument for increasing the level of grants to those districts which are less well endowed.

7. The procurement system under which municipalities operate (the Municipal Finance Management Act) should be amended to make it possible for services to be rendered in a cost-effective and timeous manner.

11. REFERENCES

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