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2020

Municipal Infrastructure Grant Spending Trends and Backlog Reduction in Water and Sanitation Services

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1. Executive Summary

1.1. Introduction

The Constitution (Act No. 108 of 1996) instructs government to implement the Bill of Rights to, inter alia, enhance 'human dignity, the achievement of equality and the advancement of human rights and freedoms'. A number of 'socio-economic' or 'second generation rights', including the right to 'have access to sufficient water' and 'an environment that is not harmful to their health or wellbeing' are prescribed by the constitution.

In recent years, the fiscal space has become increasingly tight, with implications for, amongst other aspects, the budget available for the water services sector, which impact on the constitutional rights highlighted above. There is currently insufficient understanding of the full cost of implementing different water services delivery options as envisaged in our Constitution. There are many questions which require answering such as, to what extent is the Municipal Infrastructure Grant (MIG) affordable as one part of the value chain, or how could MIG be delivered more cost effectively.

Therefore, the spending review focuses on the MIG's overall financial and non-financial analysis for reasons that are outlined below.

1.2. Main discovery

Little control was apparent at department of Cooperative Governance (DCoG), department of Water and Sanitation (DWS) and National Treasury (NT) level on the effective information management of municipal infrastructure projects and expenditure. The delivery of many water and sanitation infrastructure projects are late, partly due to lack of strong oversight and feedback, weak performance and delivery measures, and as such delays have potential significant cost implications for government, as well as implications for the human rights and well-being of unserved consumers.

There is lack of information on overall backlogs and the number of targeted households, in the DCoG MIG management information system (MIG-MIS), the DWS MIS for the period which the spending review is focusing on. Furthermore, there are constraint in attaining the policy targets due to lack of reliable, verifiable data and information from municipalities, making comparisons very difficult across all MIG receiving municipalities and the 27 Priority District Municipalities (PDMs). The unavailable data results in unreliable socio-economic statistics and inaccurate financial and service delivery information, impacting on policy makers decision-making processes. The lack of information and data within the 27 PDMs also impacts on the following key indicators:

- Water and sanitation backlogs
- Magnitude of spending on operations and maintenance in the PDMs to determine the condition of the infrastructure;
- Number of technical staff vs support staff;
- Extent on focus of infrastructure spending, on new or refurbishment;
- Tariffs charged and revenue collection;
- Magnitude of operations and capital costs;

Henceforth, the focus of this spending review will the analysis of expenditure and performance outcomes at provincial level.

1.3. Recommendations

Improved understanding of the financial and non-financial implications of the MIG policy framework and implementation options in the water and sanitation infrastructure through MIG would enable different stakeholders like Treasury and Cabinet in making allocation of public funds easier and transparent. Therefore, the following recommendations are proposed:

- **Capital Expenditure Oversight, Reporting, monitoring and evaluation** -Tightly controlled and monitored municipal Infrastructure grant expenditure and the support attached to it. This means that oversight from the NT, DCoG, DWS, the Provincial CoGTA's, the Regional Offices of DWS, the district and local municipalities with water and sanitation authority including the Project Management units. Each one must play their roles and responsibilities in terms of the Municipal Systems Act, the Water Services Act and the Municipal Infrastructure Grant framework for roles and responsibilities, including the Division of Revenue Act (DORA).
- **Performance Information oversight, reporting and monitoring** – All the role players are bound by rules and regulations on the importance of performance information collection and reporting. It is recommended that the role-players collaborate with the Stats SA on the format of municipal non-financial information they collect and customise their reporting systems accordingly. If we have uniform and verifiable information the credibility of the socio-economic information could be enhanced enabling informed policy decisions. Therefore, there is need for improvement in the MIG-MIS. Moreover, expenditure needs to be assigned and accounted for in a consistent manner to gain insights into the necessary and

acceptable levels of expenditure for these items. This initiative would need to be coordinated by NT through the mSCOA system as it will make comparisons easier and will provide improved management information.

- **Coordinated Planning** – The DWS & DCOG have a critical role in ensuring that planning for provision of water services is not done in silos to ensure alignment to water infrastructure plans and municipal infrastructure plans. This will improve the condition of water infrastructure assets, enhance value for money which will have a major impact on water services delivery.
- **Enhance budgeting and reporting on operational costs** – Operation costs are another important input in the delivery of water infrastructure. Municipalities are not adequately budgeting for operations and maintenance as a result, municipal infrastructure for water and sanitation has collapsed. Furthermore, there is paucity of information reported related to operations and maintenance.
- **MIG Policy Review** – the policy framework was last updated in 2004. There have been many developments within the water and sanitation infrastructure arena, such as the proclamation of the Municipal Infrastructure Support Agent (MISA) as an infrastructure support agent and clear possible duplication of support between DCoG and MISA, the alignment with the district development model as well as the proposed indirect municipal infrastructure grant proposal. It is recommended that the MIG policy be reviewed.
- **Further Spending Review** – after the expenditure and performance information have been improved, it is proposed that there should be a spending review which includes a costing model. Moreover, the is a need to conduct a review of MIG project costs country-wide to determine factors resulting in varying project costs. There is scope for efficiency gains and an opportunity for the development of a standard costing guideline for MIG projects.

1.4. Actions

The actions are imperative for the improvement in the infrastructure delivery, reduction of backlog and enhance access of poor households and micro enterprise to water and sanitation. Therefore, in the short term the following actions will executed: Request that there is collaboration in planning, oversight monitoring between DWS, MISA and DCoG;

- Meeting with Intergovernmental relations policy and local government analysis units for improvement in the oversight of the operational and capital costs from municipalities;

- Meeting with NT (mSCOA) responsible unit and MIG unit (MIG-MIS) on enhancement in information collection and oversight;
- Meeting with the department of Planning, Monitoring and Evaluation, DCoG and DWS providing oversight on infrastructure performance information challenges and find ways to improve.
- Collaboration with Statistics South Africa (Stats SA) and the above-mentioned departments for uniform template for information collection.

On the other hand, medium to long term considerations should be given to a second spending review including a project cost model and at project level. Moreover, an evaluation will be necessary to track implementation and outputs systematically at all three spheres of government and measure the effectiveness of the grant. The evaluation will help determine exactly whether the grant is on track and where changes may be needed. Lastly, there should be considerations for review the MIG policy, 2004 is too far and a lot has happened which warrants attention.

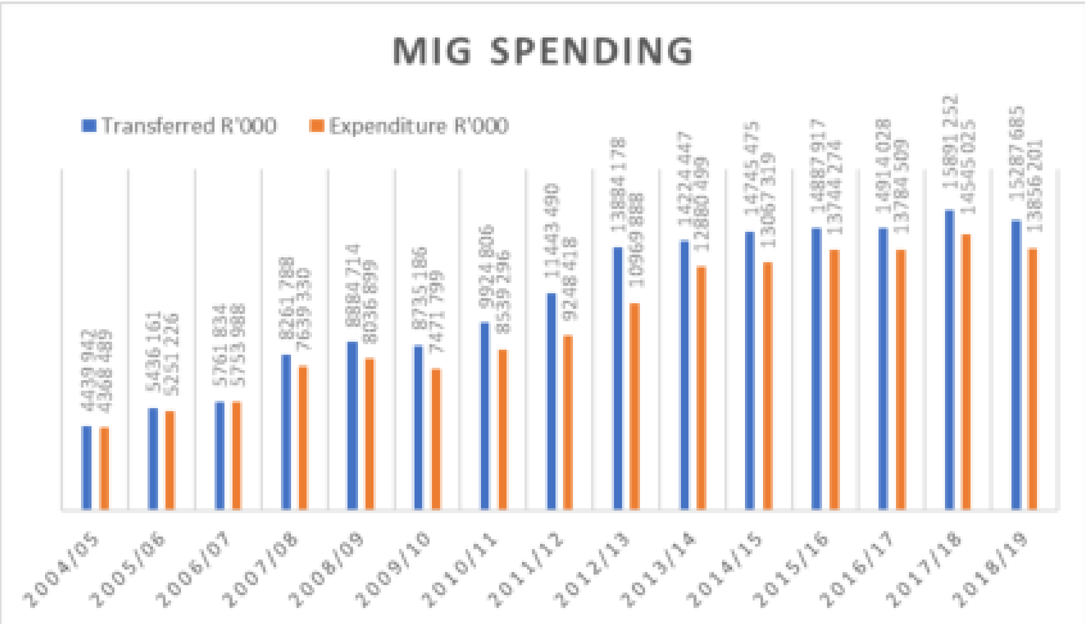
CONTENTS

2. Introduction

2.1. Spending review focus

The provision of reliable and sustainable basic services enhances the quality of life for all citizens especially the poor. It presents many new economic and productive opportunities while reducing poverty and inequality. Therefore, it is important that reliable water and sanitation services are provided as required by the applicable standards and regulations. While reliability problems are often attributed to aging infrastructure and underinvestment, they are often due to poor management, as illustrated by the reported high levels water losses and failure in new projects funded by the Municipal Infrastructure Grant (MIG). This is despite the MIG being allocated an estimated R150 billion since 2004/05 (**graph 1**).

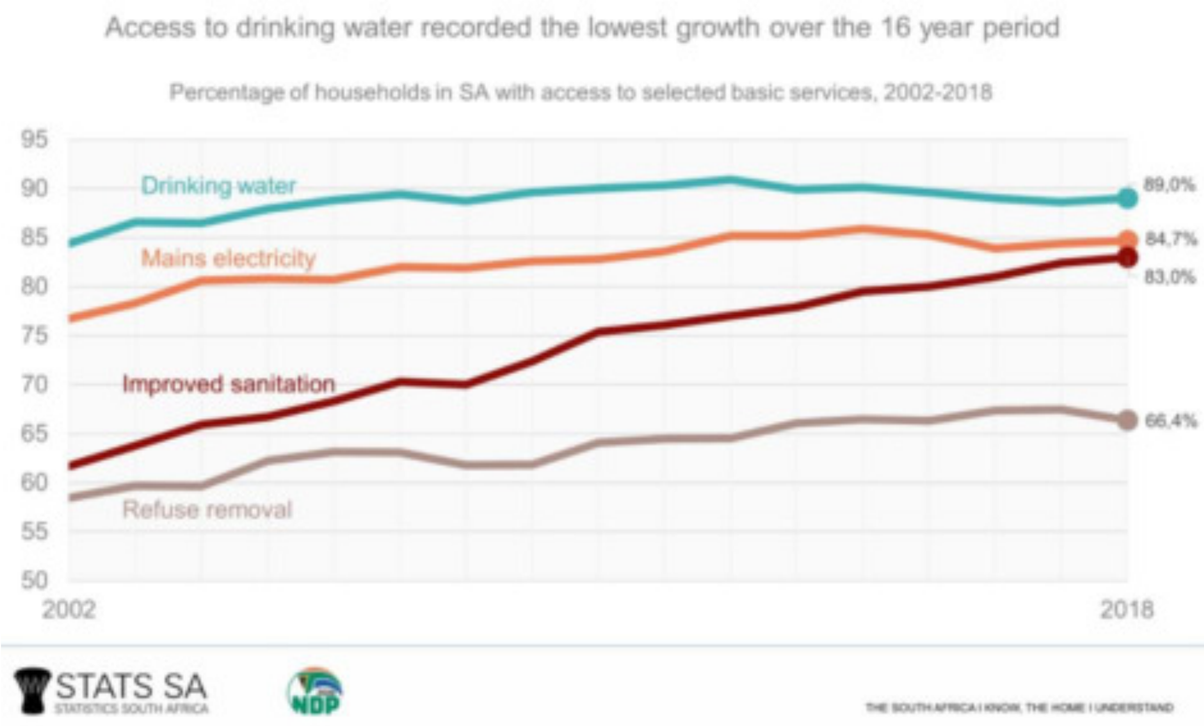
Graph 1 – MIG allocation and spending – 2004 to 2018



Tremendous progress has been made over the past few decades in the delivery of basic services. According to the General Household Survey (GHS) 2018 released by Statistics South Africa (Stats SA). While progress has been uneven across the country, a quick glance at service delivery statistics suggests that household access to these services have stabilised over the last few years.

GHS data (**graph 2**) show that households' access to drinking water (89,0%) was most common in 2018, and improved sanitation (83,0%). Access to improved sanitation (flush toilets or pit toilets with ventilation pipes) increased by 21,3 percentage points over the 17-year period. This may be attributed to the fact that a larger percentage of households had access to drinking water (piped or tap water in the dwellings, off-site or on-site) than any of the other basic services. Access to drinking water was also the service that recorded the lowest growth over the period, at 4,6 percentage points.

<u>Graph 2– Access to drinking water from 2002 to 2018</u>



2.2. Problem statement

The NDP identified the Free Basic Services (FBS) Programme as one of the most critical social security services targeting poor/indigent households to improve the quality of life. The provision of reliable and sustainable basic services enhances the quality of life for all citizens especially the poor, and it increases many new economic opportunities and productive initiatives, moreover it a constitutional right. The provision also ensures that the government outcomes of reducing poverty and inequality are achieved. Therefore, it is important that reliable water and sanitation services are provided, and they should meet the minimum standards prescribed in regulation.

In June 2011, Cabinet identified 27 distinct priority areas having less than 30% household accessing basic services. In 2015, the department of Cooperative Governance, through their Medium Term Strategic Framework outlined key actions to support the 27 priority district municipalities (PDMs) to reduce backlogs in access to water sanitation, electricity and refuse removal.

It is important to highlight that households are the basic units for service delivery, and therefore timely available information on progress enhances policy making, getting value for money in projects implemented and enhances efficiencies. However, due to unavailable uniform and verifiable information at a municipal level; a proper spending review could not focus on the 27 PDMs.

According to the 2018 “Non-financial census of municipalities”, South Africa had 3.5 million indigent households in 2017 growing to 3.6 million in 2018 (**Appendix 3**), translating to a year on year growth of 3%. Of the total indigent households, most of the households are in Gauteng, followed by Kwa-Zulu Natal while the least number is in the Northern Cape. This information would have been useful if it could be corroborated by the MIG-MIS and the unaudited Annual reports and comprising of more years and broken down to the municipal level.

2.3. Purpose of the Spending Review

According to the MIG policy framework, MIG is intended to provide capital finance for basic municipal infrastructure for poor households and, to a limited extent, to micro enterprises and deserving institutions. Furthermore, the framework’s first objective is the essence of what MIG intends to achieve “balancing social and economic goals - targeted primarily at providing infrastructure for the poor but may also be used for infrastructure that unlocks economic growth or catalyses revenue generation”.

It is important that the MIG is properly targeted to ensure effectiveness and efficient use of funds, leading to deriving value for money while upgrading poor communities. In order to test the progress achieved so far and whether value for money has been derived, it is imperative that certain questions are formulated which might lead to providing the necessary answers for the public and the policy makers. With sufficient information and data, the research questions below, have the potential to provide significant insight into the policy direction, enabling or hindering institutional arrangements, available information and data for decision-making, leading to recommendations that can enable higher productivity and greater operational efficiency. However, progress has been made in increasing access to these basic infrastructure services, but there are still challenges in municipal infrastructure development, such as:

- continued under expenditure of the Municipal MIG;
- Inappropriate and inefficient expenditure of the MIG (loosely referred to as fiscal dumping);
- Poor expenditure on the repairs and maintenance of existing infrastructure, leading to infrastructure reliability issues.

Therefore, the spending review will attempt to answer the questions below:

- Is the grant benefiting the intended beneficiaries?
  What factors are hindering progress in reducing infrastructure backlogs?
- Demonstrable evidence of asset management strategies implemented aimed at infrastructure backlog reduction.

The spending review in the next chapters will determine whether purposes outline above have been achieved or not and determined hindrances supported by recommendation. In chapter 3, the SR will review whether institutionally, the role players in the delivery of municipal infrastructure through MIG have sufficient acts and regulations to guide their action, if there are gaps, recommendations will be made accordingly. Chapter 4 will focus on the programme chain of delivery and outline it support system from planning to implementation, monitoring and report. The next two chapters will deal with the analysis of non-financial and financial information. Lastly, recommendations and actions will be outlined.

3. Policy and Institutional Information

3.1. Introduction

South Africa has a unitary system of government with strong decentralised features. Some functions are performed exclusively by one sphere of government, but most functions are shared (concurrent) between spheres, mainly in terms of policy making, legislation, implementation, and monitoring and performance assessment. National government is largely responsible for providing leadership, formulating policy, determining the regulatory framework (including setting minimum norms and standards), and monitoring overall implementation (**Appendix 1**). Provinces are mainly responsible for the implementation in accordance with the nationally determined framework.

National government's exclusive functions include national defence, the criminal justice system (safety and security, courts), higher education, water and energy (electricity) resources, and administrative functions (home affairs, and the collection of national taxes). These exclusive functions receive a huge chunk of the total national government budget. Provinces' exclusive functions include provincial roads, ambulance services, and provincial planning, among others. Municipalities are also responsible for both concurrent and exclusive functions, such as the provision of water, electricity, refuse removal, municipal infrastructure and emergency services.

There is a myriad of acts, policies, legislations that govern the provision of water services and municipal infrastructure, which are detailed in table 1 and some will be analysed and their merits and demerits will be detailed within this section.

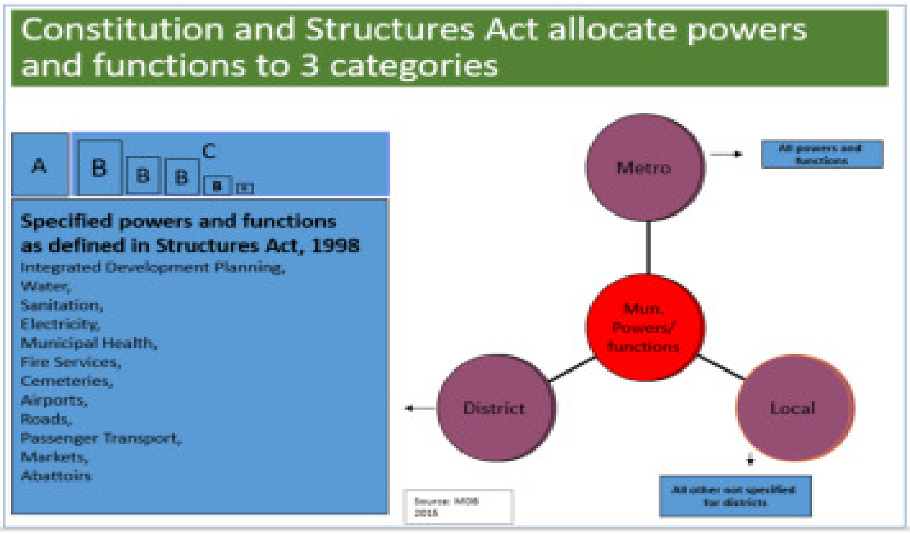
3.2. Key laws and regulations

Primarily, the three spheres derive their mandate through the Schedules listed in the Constitution, which provide for three kinds of functional areas: concurrent national and provincial functions (Schedule 4), exclusive provincial functions (Schedule 5) and local government matters (Parts B to Schedules 4 and 5).

- **Concurrent functions:** These are shared competences of national and provincial government as illustrated in Schedule 4 Part A, meaning that both spheres can enact laws for these functional areas. For example, Parliament and provincial legislatures can both enact their own legislation to regulate agriculture, environment, health services, housing and others listed in this Schedule.

- **Exclusive provincial functions:** Provinces have exclusive legislative competence over the functions listed in Schedule 5, which includes the local government matters listed in Part B of that Schedule. The scope of a provinces' power over local government matters is, however, restricted to providing regulatory frameworks to supervise municipalities. They cannot compel municipalities to make decisions. Parliament is excluded from passing legislation in respect of exclusive powers, but can intervene when specific grounds relating broadly to national interests exist and intervention is necessary.
- **Local government matters:** A municipality has the executive authority and the right to administer the local government matters set out in Parts B of Schedules 4 and 5 and functions assigned to it (**Figure 1**). This authority includes the power to make and execute by-laws. The Constitution makes it clear that "a municipality has the right to govern, on its own initiative, the local affairs of its community.

Figure 1 : Local Government Powers and Functions



Source: National Treasury

In terms of the White Paper on Local Government (WPLG), district government should be given key responsibilities for district-wide integrated development planning, including land-use planning, economic planning and development, and transport planning. District government should also provide bulk-services where required. The re-adjustment of powers and functions between district and local municipalities has also created its own duplication and creeping decentralisation of functions from the other spheres of government without clarity on the responsibility and accountability for the function.

However, there is room for improvement especially is realising that the MIG framework is largely covered by the Water Services Act and the National Water Services Framework, which are all governed by the Constitution. The current MIG framework was last updated in 2004 and there are many changes which should have found reflection in the framework as a guiding document. For instance, there is a new player in the form of the Municipal Infrastructure Support Agency, which is a technical support agency for municipal infrastructure. It is therefore important that from time to time, the MIG policy is updated to reflect such major changes.

3.3. Observations

The 1998 White Paper on Local Government did not address the challenges of the administrative and management capacity of post-apartheid municipalities to execute budgets and comply with accepted accounting and financial management and reporting practices. In many instances, these inadequacies were reflected in poor revenue projections and poor collection and credit control systems. Data is unavailable, resulting in unreliable socio-economic statistics and inaccurate financial and service delivery information.

The MIG policy framework has not been updated since 2004, leaving out critical role players such as Municipal Infrastructure Support Agency and their critical role in municipal infrastructure support unintegrated into the framework. This has led some question whether there is duplication in the MIG unit's existence vis a vis that of MISA. Moreover, despite the water and sanitation services being guided by the DWS' National Water Services Framework, the two departments are not working together.

4. Programme Chain of Delivery

4.1. Background of MIG

The municipal infrastructure grant (MIG) programme is one of the largest local government infrastructure development funding in South Africa with an average allocation of R15 billion per year in the three years under review (2016/17 to 2018/19). The programme was introduced as part of major reforms implemented by government to improve service delivery in a coordinated manner involving all government spheres. MIG was started in 2004/05, through the merger of:

- Consolidated Municipal Infrastructure Programme (CMIP);
- Local Economic Development Fund (LEDF);
- Water Service Capital Grant (WSCG);
- Community Based Public Works Programme (CBPWP)
- Building for Sports & Recreation Programme; and
- Urban Transport Grant (UTG).

After the consolidation of the different grants and programmes from different sector departments, the MIG was housed in the DCoG. The MIG provides access to basic levels of municipal infrastructure services such as water and sanitation, roads and stormwater, refuse and solid waste removal. It provides capital financing for new and renewal of existing basic municipal services infrastructure for the poor. At establishment, government committed to ensuring the provision of free basic services, which includes water, sanitation, electricity and waste management to poor households by the year 2013. MIG policy framework, the approach is to simplify the system of transfers to municipalities. The system is designed to:

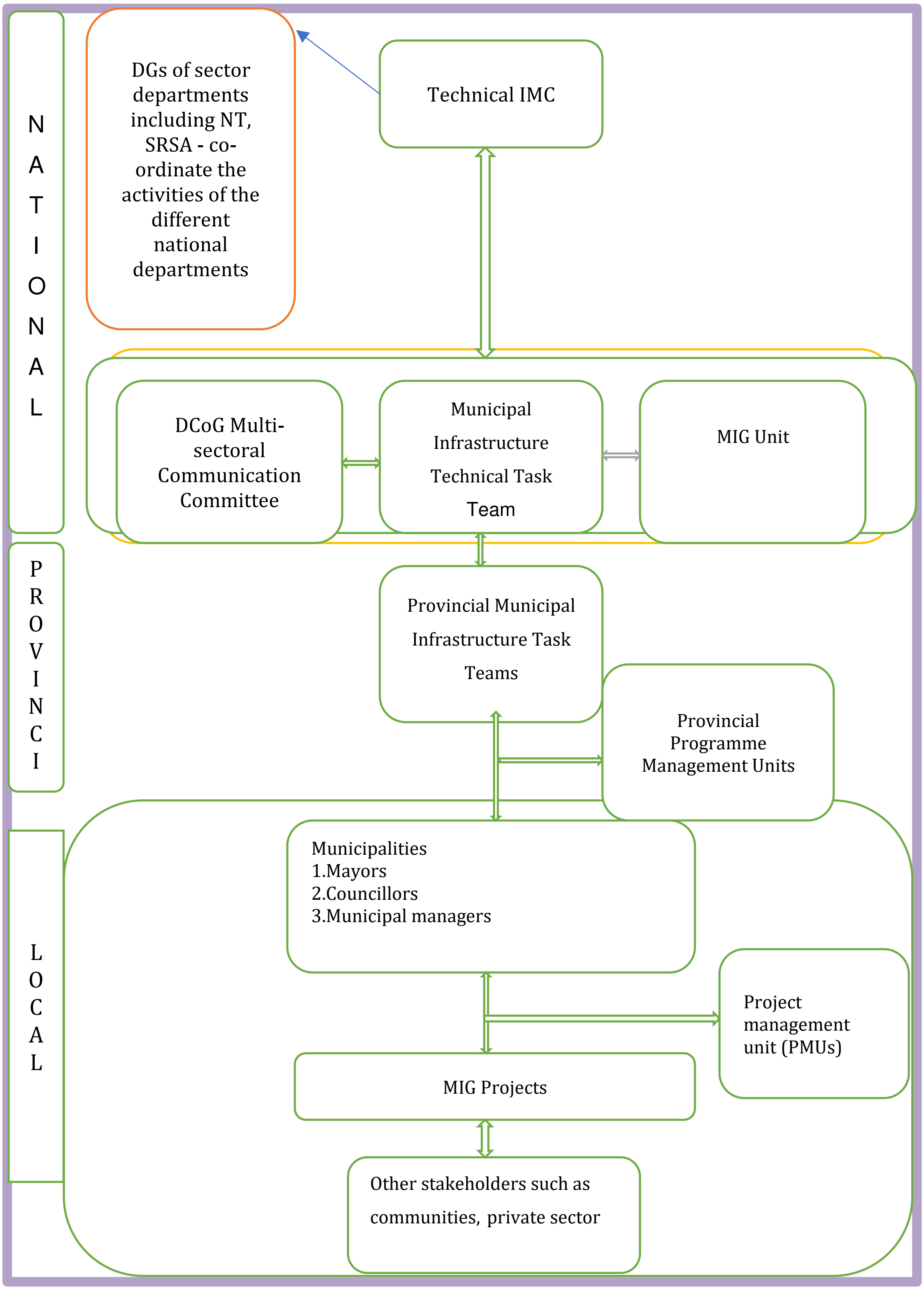
- support the capital budgets of municipalities;
- facilitate integrated development planning;
- allow flexibility in budget programming.

Note that the detailed programme analysis is in **Appendix 2.**

4.2. Key role players and objectives of the water services grants

As the lead department, the department of Cooperative Governance (DCoG), provides policy direction in the roll out of the MIG. Moreover, in ensuring that the water and sanitation MIG targets, outputs and outcomes are achieved, the department enlists other departments such as Water and Sanitation provide planning, funding, development, regulatory and compliance support to all provinces and municipalities and entities. Therefore, DCoG plays a key role in coordinating the delivery of MIG as outlined below in collaboration with the DWS, through Regional Bulk Infrastructure Grant and Water Services Infrastructure Grant.

Figure 2: Governance structures across three spheres of government



4.3. MIG funding, formula and objectives

The MIG is the largest infrastructure transfer to local government administered by DCoG and is allocated through a formula which its vertical division allocates resources between sectors and the horizontal division amongst the recipient municipalities taking into account poverty, backlogs and municipal powers and functions. DCoG administers the grant and is a schedule 5B grant in terms of the Division of Revenue Act, which implies that funding is transferred directly to municipalities.

The remainder of the MIG allocation is allocated through a formula to 144 Water Services Authorities municipalities, which its vertical division allocates resources between sectors and the horizontal division takes account of poverty, lack of access and municipal powers and functions in allocating funds to 144 municipalities. Up to 5% of the allocations can be utilized by municipalities to fund their project management units to assist them with the roll-out of the MIG Programme. Below is a description of the formula.

The total national MIG allocation is divided into allocations for various components, using the formula for the Municipal Infrastructure Grant as detailed below in **figure 3.**

Figure 3: MIG Formula

Municipal infrastructure grant = C + B + P + E + N

C Constant to ensure a minimum allocation for small municipalities (this allocation is made to all municipalities)

B Basic residential infrastructure (proportional allocations for water supply and sanitation, roads and other services such as street lighting and solid waste removal)

P Public municipal service infrastructure (including sport infrastructure)

E Allocation for social institutions and micro-enterprise infrastructure

N Allocation to the 27 priority districts identified by government

Source: National Treasury

It is important to note that allocations for water and sanitation sub-components of the basic services component are based on the proportion of the national backlog for that service in each municipality. Other components are based on the proportion of the country's poor households located in each municipality. The formula considers poor households without access to services that meet sector standards to be a backlog. The full breakdown of each component is provided for in **figure 3** below.

Figure 4: Data used in the MIG formula

Data used in the municipal infrastructure grant formula

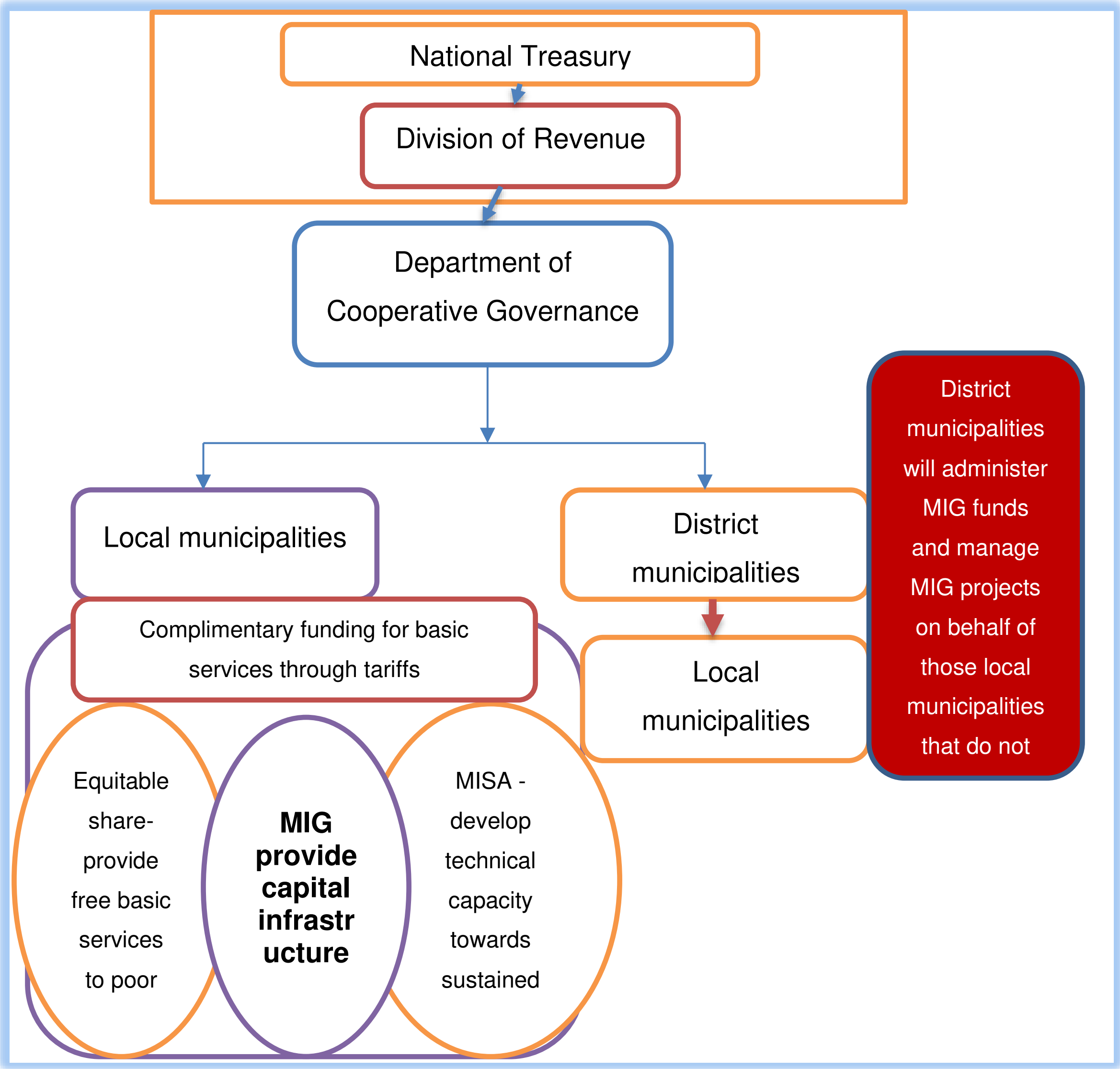
Component	Indicator used in the formula	Data used (all data is from the 2011 Census)
B	Number of water backlogs	Number of poor households[1] that do not have adequate access to water (adequate access defined as piped water either inside their dwelling, in the yard or within 200 meters of their dwelling)
	Number of sanitation backlogs	Number of poor households that do not have adequate access to sanitation (adequate access defined as having a flush toilet, chemical toilet, pit toilet with ventilation or ecological toilet)
	Number of roads backlogs	Number of poor households
	Number of other backlogs	Number of poor households that do not have access to refuse disposal at Reconstruction and Development Programme levels of service
P	Number of poor households	Number of poor households
E	Number of poor households	Number of poor households
N	Number of households in nodal areas	Allocated to the 27 priority districts identified by Cabinet as having large backlogs. Allocation is based on total households (not poor households)

1. *Poor household defined as a monthly household income of less than R2 300 per month in 2011 Census data*

Source: National Treasury

It is important to note that the formula uses the 2011 Census data to determine poor households, which is 7 years old in 2018. A lot could have happened in the 7-year period which leads to question on the accuracy in the backlogs.

Figure 5: Flow of funds



The **figure 5** depicts the sources of funding that support the water services infrastructure. From the National Revenue in National Treasury MIG funds, the funds are gazetted through the Division of Revenue Act (DORA) per municipality and transferred to the DCoG vote. DCoG transfers the funds to the water services authority (local municipalities and district municipalities) in order to achieve the objectives listed in paragraph 4.4 (below). The flow of funds considered all sources of funds that supports the delivery of water services infrastructure and support the achievement of free basic services.

4.4. Objectives of MIG

- **Balancing social and economic goals**
    - The MIG programme is targeted primarily at providing infrastructure for the poor but may also be used for infrastructure that unlocks economic growth or catalyses revenue generation.
- **Decentralisation of spending authority within National Standards**
    - Decisions relating to the prioritisation of municipal infrastructure spending, such as the identification, selection and approval of projects, are best undertaken at municipal level
- **Focus on infrastructure required for a basic level of service**
    - The MIG is aimed at providing only a basic level of service. It is the responsibility of the relevant sector department to specify which levels of service are considered 'basic'.
- **Ensuring sustainability of infrastructure**
    - Infrastructure grants should only be applied in situations where the necessary operations and maintenance arrangements associated with infrastructure are in place or can reasonably be put in place within the medium term.
- **Reinforcing local, provincial and national development objectives**
    - The funding mechanism must be consistent with the planning processes of local, provincial and national government.
- **Equity in the allocation and use of funds**
    - The mechanism for distributing funds must provide for equitable access to such funds by the poor in order to make uniform progress in closing the infrastructure gap.
- **Efficient use of funds**
    - Funding must be used to provide the greatest possible improvement in access to basic services at the lowest possible cost
- **Predictability and transparency**
    - Funds should be provided to individual municipalities on a 3-year basis, consistent with medium term budgeting practice, with minimal in-year changes and with year to year changes based only on clearly defined conditions.

Figure 6: Municipal infrastructure grant delivery chain

	Role players	Activities	Outputs
Planning	• Council • Sector departments (DWS) • Cooperative governance • Project management unit	• Community participation • IDP development • Project identification, prioritisation and list	• Spatial development plan • Integrated development plan • Comprehensive municipal infrastructure plan
Budgeting	• Council • National treasury • Cooperative governance • Sector departments (DWS)	• Annual costing estimates and review • Prioritisation • Budgeting	• Project budget allocation • Service delivery and budget implementation plan (SDBIP)
Execution	• Project management unit (PMU) • Cooperative governance • Sector departments • Community project steering committees	• Feasibility studies • Project planning and design • Project management • Contract management • Risk management • Operational and maintenance plan	• Asset registration project database • Monthly and quarterly reports • Implementation plan • Project management plan • Risk management plan • Alignment model
Monitoring and reporting	• PMU • National treasury • Cooperative governance • Sector departments (DWS)	• Regulating and monitoring municipal systems • backlog studies and environmental impact assessments • Final compilation of monthly, quarterly, bi-annual and annual reports to the MIG Manager • Audit and administer the monthly claims and expenditure	• Norms and standards framework • Monitoring and evaluation framework • Audit and annual report

4.5. Observations

Quite clearly, the past attempts by the national and provincial governments responsible for overseeing the performance of local government to address these problems have yielded only limited success. However, the MIG service delivery does not lie in one sphere of government but extends to provinces, communities and the national departments. As depicted in the MIG value chain, there are a myriad of role players responsible for the execution of the programme from planning until monitoring and report. If at any point, any of these steps are missed, the whole programme is derailed.

The MIG, in collaboration with the Water Service Infrastructure Grant and the Regional Bulk Infrastructure Grant, through their departments, have a common thread, which is supporting the water services authorities, whether through planning, monitoring, policy implementation or developing and implementing the necessary infrastructure to ensure that affected communities are serviced. Theoretically, the DCoG is expected to work with DWS as the sector department to ensure that the MIG only provides infrastructure to poor households for basic level of services. It is the responsibility of the relevant sector department through their own policies and norms and standards to specify which levels of service are considered. ‘

However, in some areas, the MIG has been utilised above basic level as the two departments are no longer working together from planning until the project implementation as expressed by the municipal project management unit. It is imperative that the above-mentioned objectives are reinforced across all three spheres of government to allow the funding mechanism to be consistent with the planning processes of local, provincial and national government.

There is a lack of clear definition or adherence to the scope of projects funded by both MIG and RBIG. As a result, a number of projects are funded by both programmes which are contrary to the national objectives of the programmes. The co-funding of the same projects from both grants will invariably lead to the delay and lack of funding for other projects. This is using more resources to achieve the same objectives, and by definition amount to inefficiency.

In planning, the MIG policy framework is clear about roles and responsibilities. The MIG framework outlines that the roles and responsibilities of the DCoG as to develop a National Spatial Development Framework, while the DWS should develop a Macro Sector Plans, the Provinces on the other hand should provide the provincial growth strategic plans. Municipalities also play a critical role in producing the Integrated Development Plans, which are based on the community needs collected through public participation. The MIG framework’s key emphasis is that this should not occur in silo, but in collaboration with one another within each sphere. However, in the discussion with DWS and DCoG, it became apparent that the framework's requirements are more theoretical than practical.

5. Performance Analysis

5.1. Introduction

The public sector delivers services essential to the well-being and development of the nation. To ensure that public service delivery is as efficient and economical, all government institutions are required to formulate strategic plans, allocate resources to the implementation of those plans, and monitor and report the results. Additionally, there must be systems and processes for information and data collected with proper oversight to ensure correctness and reliability. Moreover, it is important that the performance information is provided in a uniform, understandable and verifiable format for proper decision making on whether the allocated funds are delivering value for money.

The performance information for this spending review were sourced from the unaudited MIG-Unit Annual Reports. For the 3 years under review, the information was not uniform to enable proper comparison of financial and non-financial. It will be observed that is some cases, the information was provided at a per province while in some case just as aggregated numbers with no break down.

5.2. Non-Financial Performance information analysis

According to the unaudited MIG-Unit annual report as per **table 1**, below, there were 415 664 households who benefited from the water and sanitation MIG projects in the three years under review. The number of that were served in 2016/17 were 166 555, while the number of beneficiaries in 2017/18 were 108 042. This denotes a year on year decrease of 35% of serviced households between the two years. Thereafter, the number of households serviced increased to 141 067 in 2018/19, at a rate of 31% year on year. Therefore, the MIG targets fluctuated with no associated reasons provided. Meanwhile, the beneficiaries for sanitation projected implemented through the MIG totalled 333 629, driven the 136 982 households in 2016/17, 84 225 households in 2017/18 and 112 442 households in 2018/19. There was a dip between 2016/17 and 2017/18 of 39%. There is need for further investigation leading to the dip in the number of beneficiaries in 2017/18.

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Table 1 : Beneficiaries of water and sanitation

	2016/17	2017/18	2018/19
PROJECT CATEGORY	**BENEFICIARIES**		
Water (households)	166 555	108 042	141 067
Sanitation (households)	136 982	84 225	112 422

Source: 2018/19 MIG Annual Report

In comparison, the Statistics South Africa (Stats SA), conducted a non-financial survey of municipalities. The information to be presented is for 2017 and 2018 as supplied by the municipalities. In the table below (Table 2), are the number of households per provinces, per service. The province with the most indigent households receiving water in 2017 and 2018 is Gauteng, followed by Kwa-Zulu Natal and then Eastern Cape. Overall, there was a year on year growth of 6% in benefiting households, with Gauteng and Eastern Cape reporting the highest growth at 10% per province. However, Limpopo reported a negative growth in households benefitting in water.

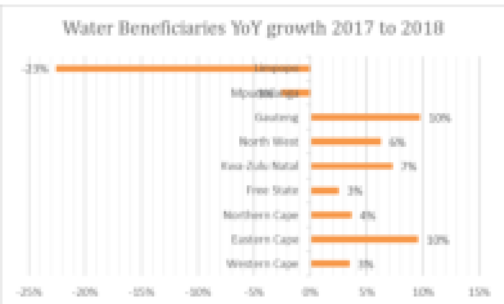
On the other hand, households benefiting in sewerage and sanitation in the same period totalled 2 million households in 2017 and 1.5 million in 2018, with a negative year on year growth of 23 per cent. The provinces with the highest benefitting households are Eastern Cape, Kwa-Zulu Natal, Western Cape, and Gauteng. Northern Cape reported the lowest number of households. Meanwhile, Limpopo reported the highest negative year on year growth in number of households benefitting sewerage and sanitation.

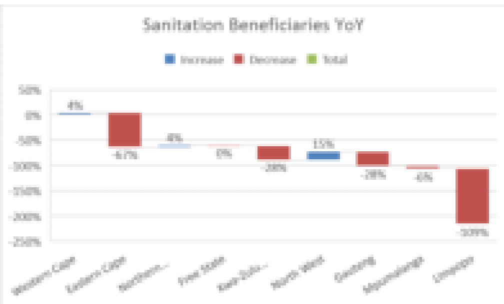
Table 2 : Households benefiting in water and sanitation

Benefitting Indigent households identified by the municipalities

	Water			Sewerage and sanitation		
Provinces	**2017***	**2018**	**YoY growth**	**2017***	**2018**	**YoY growth**
Western Cape	347 966	360 571	3%	343 937	357 619	4%
Eastern Cape	467 561	516 972	10%	459 810	274 686	-67%
Northern Cape	64 554	67 015	4%	60 925	63 200	4%
Free State	143 615	147 304	3%	145 127	144 414	0%
Kwa-Zulu Natal	596 549	643 560	7%	444 991	347 792	-28%
North West	93 261	99 492	6%	63 316	74 643	15%
Gauteng	672 304	744 844	10%	491 889	384 352	-28%
Mpumalanga	105 818	103 125	-3%	95 889	90 741	-6%
Limpopo	156 351	127 550	-23%	93 367	44 603	-109%
Total	2 647 979	2 810 433	6%	2 199 251	1 782 050	-23%

Graph3 – YoY growth of water beneficiaries **Graph 4 – YoY growth of sanitation beneficiaries**

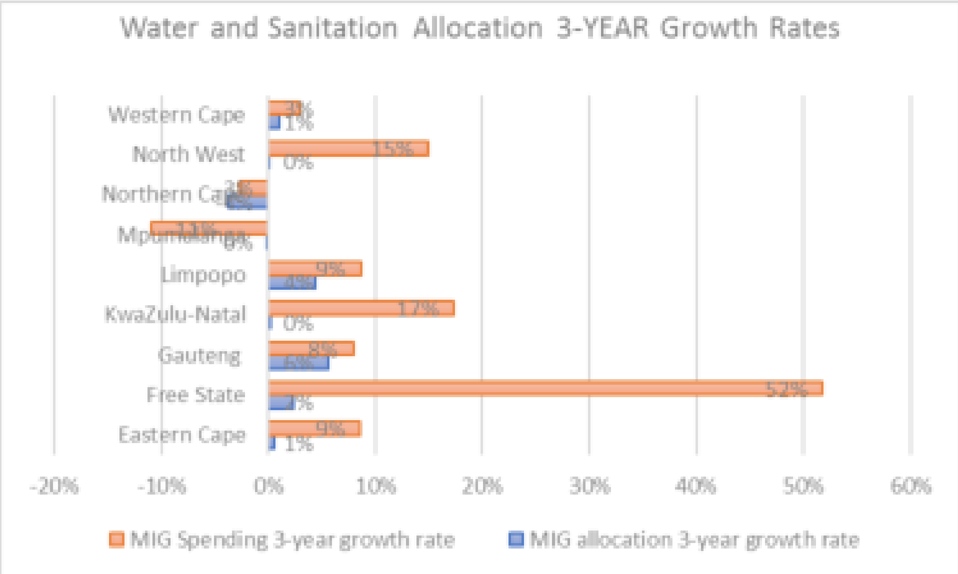




Source: Non-Financial Census of Municipalities – June 2018

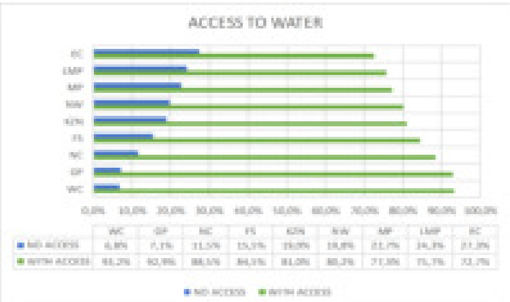
However, the allocation and spending paint a different picture, the provinces with the lowest growth in beneficiaries have the fastest growth in allocations and spending. Free State spending is the highest growing province at 52% while its allocation only grew by 2%, this could be attributable to the prolonged drought in those three years under review. Kwa-Zulu Natal and North West followed at 17% and 15% respectively on spending. If more information regarding the underlying causes such as which municipalities within provinces attribute to low spending was available as MIG is a municipal allocation, it would be possible to make a finding.

Graph 5 : MIG Water and Sanitation Allocation vs Spending 3-year growth rates



Access to services seem to be slower especially in areas where the need is most, in comparison to areas where the need is less. For instance, Graph 5, shows that the Western Cape has the highest number of households with access to water at +90% compared to Eastern Cape has +70% households with access to water. Again, lack of municipal performance information leads to inconclusive findings.

Graph 6: Households with Access to water



Source: Stats SA

5.3. Observation

According to the MIG framework policy (2004) the Vision is (page 1)[1] “The municipal infrastructure grant programme is aimed at providing all South Africans with at least a basic level of service by the year 2013 through the provision of grant finance aimed at covering the capital cost of basic infrastructure for the poor. The MIG programme is a key part of government's overall drive to alleviate poverty ……” They key words to emphasise are “**provision of at least basic level of services**”, **capital cost of basic infrastructure**”, **grant finance” South Africans (Households)** and **“poverty**” for validation whether the MIG is getting closer to its vision. Therefore, the department of Cooperative Governance should be readily having this information since inception and show how far they have come.

Additionally, Graph 7, shows that the allocations were aligned with the objectives of policy framework, “**Equity in the allocation and use of funds -** The mechanism for distributing funds must provide for equitable access to such funds by the poor in order to make uniform progress in closing the infrastructure gap”.

<u>Graph 7 – 3-Year transfers</u>

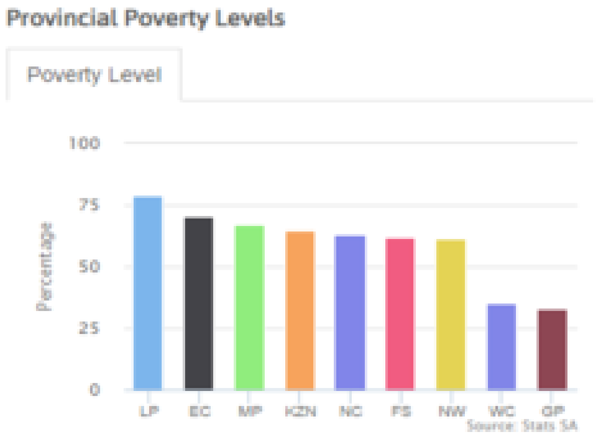
Source: MIG Annual Reports

According to the Figure 7, KZN received the highest transfers for the MIG compared to the other provinces, while Gauteng received the lowest transfers. This is because the MIG targets poor areas with largest backlogs it is important to note the alignment between the transferred

[1] Municipal Infrastructure

amounts and the poverty rates, the higher the poverty rate the higher the transfers. Limpopo, Eastern Cape and Kwa-Zulu Natal lead the pack with most poor households and higher transfers.

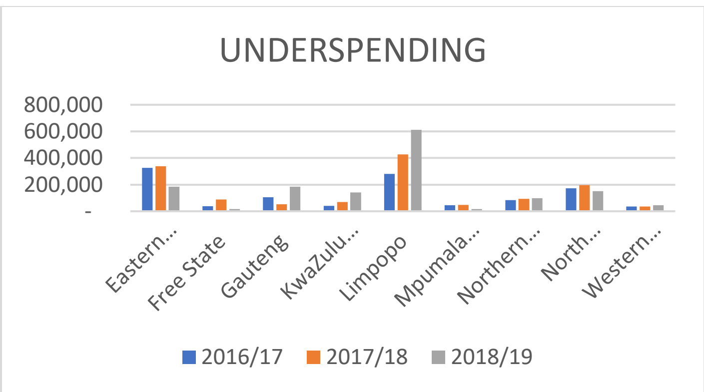
Graph 8 – Provincial Poverty Levels



Source: Stat SA

The fact that the MIG allocation is aligned to poverty rates is also corroborated by the 2016/17 Living standards survey conducted by the Stats SA. Limpopo is leading the pack at 75%, followed by Eastern Cape, Mpumalanga and KZN. However, when compared to the expenditure per province, a different picture emerges. The provinces with the lowest number of poor households are spending more of the MIG grant. Despite the highest need in poor provinces, there low access in those provinces coupled with low spending (Graph 9), this requires extensive investigation. It is apparent that allocatively, MIG is as per its objective of providing access to the poor, while the spending does not follow accordingly. In essence, funding is not the issue.

Graph 9: MIG overall underspending



Source: MIG-unit Annual Report

6. Expenditure Observations

6.1. Introduction

The spending review focused on the provincial-level MIG allocation and spending utilising data sourced mainly from the unaudited MIG Annual Reports from 2016/17 to 2018/19. Municipal financial data could not be sourced from the MSCOA as there were too many gaps hindering useful analysis (see Appendix 3).

6.2. Overall Expenditure Analysis

The MIG is allocated through the vote of the DCoG, and over the three years under review, a total of R46 billion was transferred to the municipalities in the 9 provinces. **Table 3 and graph 10**, show that over the three years consolidated provincial MIG overall spending averaged 91%.

Table 3: 3- year MIG spending

MIG Allocation for All Sectors - 2016/17 to 2018/19

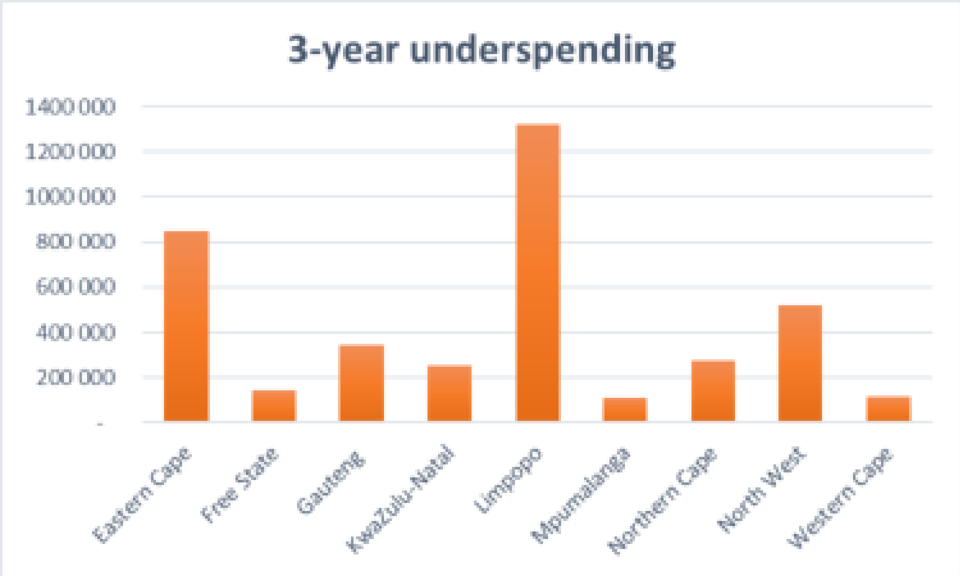
Provinces	Allocations	Spending	Variance	Spending % of allocations	MIG allocation 3-year growth rate	MIG Spending 3-year growth rate
Eastern Cape	9 081 381	8 232 847	848 534	91%	1%	3%
Free State	2 253 651	2 111 597	142 054	94%	2%	4%
Gauteng	1 475 819	1 132 513	343 306	77%	6%	-4%
KwaZulu-Natal	10 070 721	9 818 855	251 866	97%	0%	-1%
Limpopo	9 525 880	8 204 856	1 321 024	86%	4%	-1%
Mpumalanga	5 443 823	5 336 381	107 442	98%	0%	1%
Northern Cape	1 465 646	1 189 886	275 760	81%	-4%	-6%
North West	5 225 090	4 705 140	519 950	90%	0%	1%
Western Cape	1 550 954	1 435 557	115 397	93%	1%	0%
Total	**46 092 965**	**42 167 632**	**3 925 333**	**91%**	**1%**	**0%**

Source: MIG-Unit Annual Reports

The grant only grew by 1 per cent over the three-year period, with Gauteng leading the pack. On the other hand, spending saw a zero percent growth over the three-year period, with the least growth recorded in Northern Cape. Limpopo has the highest underspending at R1.3 billion followed by Eastern Cape (Graph XX).

Just to reiterate, allocatively, MIG targets the poor, but the poor provinces spending levels are not supporting this objective. The sources of information such as the BAS expenditure information is not broken down to municipality or project level and the mSCOA has too many gaps to do a proper analysis (Appendix 3). But there is alignment is the allocations in BAS over the 3-year period, compared to the MIG annual reports.

Graph 10: MIG Overall underspending

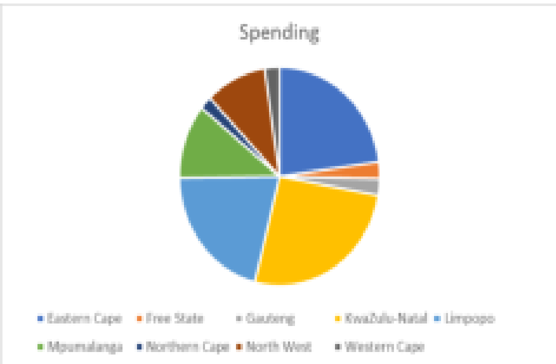


6.3. MIG- Water and Sanitation Expenditure Analysis

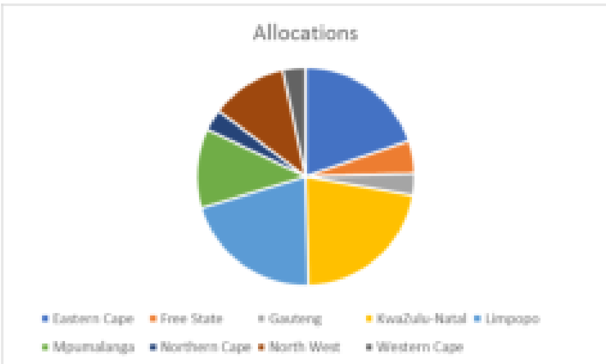
Table 4: Water and sanitation allocations vs spending

Provinces	Allocations	Spending	Variance	Spending % of allocations	MIG allocation 3-year growth rate	MIG Spending 3-year growth rate
Eastern Cape	4 903 946	6 102 755	- 1 198 810	124%	1%	9%
Free State	1 216 972	657 603	559 369	54%	2%	52%
Gauteng	796 942	648 495	148 447	81%	6%	8%
KwaZulu-Natal	5 438 189	6 986 206	- 1 548 016	128%	0%	17%
Limpopo	5 143 975	5 548 393	- 404 417	108%	4%	9%
Mpumalanga	2 939 664	2 934 804	4 861	100%	0%	-11%
Northern Cape	791 449	518 718	272 731	66%	-4%	-3%
North West	2 821 549	2 635 956	185 592	93%	0%	15%
Western Cape	837 515	633 461	204 054	76%	1%	3%
Total	**24 890 201**	**26 666 390**	**- 1 776 189**	**107%**	**1%**	**9%**

Graph 11: Spending



Graph 12: Allocation



Overall spending on water and sanitation amounted to R26.7 billion against an allocation of R24.9 billion over the 3-year period, leading to overspending of 107%. Kwa-Zulu Natal, Eastern Cape and Mpumalanga have the highest share of overspending at 128%,124% and 108% respectively. The overspending is due to water and sanitation sector benefiting from the funds originally allocated to other sectors. Municipalities have discretion in terms of prioritising the use of MIG funds as per one of the objectives of the MIG policy framework (2004:10)" ***Decentralisation of spending authority within National Standards*** *-decisions relating to the prioritisation of municipal infrastructure spending, such as the identification, selection and approval of projects, are best undertaken at municipal level*".

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6.4. Technical Efficiency analysis

The spending review used a non-parametric method known as the Data Envelopment Analysis (DEA) to analyse the technical efficiency of 9 provinces. The review measures the technical efficiency of the 9 provinces using the MIG expenditure and projects (**Appendix 5**). Data for the Model is based on a 3-year average from 2016/17 to 2018/19. There is variation in the provincial MIG spending data, as result the size of provinces matters in determining technical efficiency rates. Which is why the spending review uses an input-minimisation VRS DEA. That is, the objective is to determine the extent of MIG expenditure that can be optimised while producing the same number of the MIG projects.

4 provinces are technically efficient under the VRS (**Appendix 5**). They used the current water and sanitation MIG spending efficiently compared to the other 5 inefficient provinces. Overall, the mean technical efficiency score is 72%, implying that the inefficient provinces have to improve water and sanitation MIG spending efficiency by 28% to reach the optimal production frontier. Only the Western Cape operates at the desired efficient scale. Provinces of DRS need to scale back their operations while those on IRS need to improve the scale of their operations.

6.5. Observation

Allocation are aligned to the poverty statistics therefore this ensures that the poor households are serviced as intended by the MIG objectives. However, the spending in the poor provinces is mired by significant underspending, which means that the poor households who are waiting for the infrastructure are grossly under serviced. The main question is what could be the reason for underspending?

The persistent underspending is attributed to:

- Lack of capacity and required skills (technical, financial, project and programme management) – municipalities do not appoint service providers on time, this causes delays in the implementation of project phases.
- Leadership instability within the municipality resulting in lack of reporting which leads to the misuse of grant for unintended purposes.
- Stoppages of work due to community unrests and shortages of labour as a result delaying project implementation.

The point in bullet 1, could be the crux of the matter as the other two bullets are as result of the assertions in that bullet.

7. Recommendations

Improved understanding of the financial and non-financial implications of the MIG policy framework and implementation options in the water and sanitation infrastructure through MIG would enable different stakeholders like Treasury and Cabinet in making allocation of public funds easier and transparent. Therefore, the following recommendations are proposed:

- **Capital Expenditure Oversight, Reporting, monitoring and evaluation** -Tightly controlled and monitored municipal Infrastructure grant expenditure and the support attached to it. This means that oversight from the NT, DCoG, DWS, the Provincial CoGTA's, the Regional Offices of DWS, the district and local municipalities with water and sanitation authority including the Project Management units. Each one must play their roles and responsibilities in terms of the Municipal Systems Act, the Water Services Act and the Municipal Infrastructure Grant framework for roles and responsibilities, including the Division of Revenue Act (DORA).
- **Performance Information oversight, reporting and monitoring** – All the role players are bound by rules and regulations on the importance of performance information collection and reporting. It is recommended that the role-players collaborate with the Stats SA on the format of municipal non-financial information they collect and customise their reporting systems accordingly. If we have uniform and verifiable information the credibility of the socio-economic information could be enhanced enabling informed policy decisions. Therefore, there is need for improvement in the MIG-MIS. Moreover, expenditure needs to be assigned and accounted for in a consistent manner to gain insights into the necessary and acceptable levels of expenditure for these items. This initiative would need to be coordinated by NT through the mSCOA system as it will make comparisons easier and will provide improved management information.
- **Coordinated Planning** – The DWS & DCoG have a critical role in ensuring that planning for provision of water services is not done in silos to ensure alignment to water infrastructure plans and municipal infrastructure plans. This will improve the condition of water infrastructure assets, enhance value for money which will have a major impact on water services delivery.
- **Enhance budgeting and reporting on operational costs** – Operation costs are another important input in the delivery of water infrastructure. Municipalities are not adequately budgeting for operations and maintenance as a result, municipal infrastructure for water and sanitation has collapsed. Furthermore, there is paucity of information reported related to operations and maintenance and therefore there is a need to review the MIG DORA framework.

- **MIG Policy Review** – the policy framework was last updated in 2004. There have been many developments within the water and sanitation infrastructure arena, such as the proclamation of the Municipal Infrastructure Support Agent (MISA) as an infrastructure support agent and clear possible duplication of support between DCoG and MISA, the alignment with the district development model as well as the proposed indirect municipal infrastructure grant proposal. It is recommended that the MIG policy be reviewed.
- **Further Spending Review** – after the expenditure and performance information have been improved, it is proposed that there should be a spending review which includes a costing model. Moreover, the is a need to conduct a review of MIG project costs country-wide to determine factors resulting in varying project costs. There is scope for efficiency gains and an opportunity for the development of a standard costing guideline for MIG projects.

8. Actions

The proposed actions are imperative for the improvement in the infrastructure delivery, reduction of backlog and enhance access of poor households and micro enterprise to water and sanitation. Therefore, in the short term the following actions will executed:

- Request that there is collaboration in planning, oversight monitoring between DWS, MISA and DCoG to ensure alignment to the MIG roles and responsibility framework;
- Meeting with Intergovernmental relations policy and local government analysis units for improvement in the oversight of the operational and capital costs from municipalities as mSCOA;
- Meeting with NT (mSCOA) responsible unit and MIG unit (MIG-MIS) on enhancement in information collection and oversight of financial and non-financial information;
- Meeting with the department of Planning, Monitoring and Evaluation, DCoG and DWS providing oversight on infrastructure performance information challenges to find ways to improve planning, monitoring and reporting;

On the other hand, medium to long term considerations should be given to a second spending review including a cost model and at project level. Moreover, an evaluation will be necessary to track implementation and outputs systematically at all three spheres of government and measure the effectiveness of the grant. The evaluation will help determine exactly whether the grant is on track and where changes may be needed. Lastly, there should be considerations for review the MIG policy, 2004 is too far and a lot has happened which warrants attention.

9. Appendices

9.1. Appendix 1: Legislations and policies

9.2. Appendix 2: MIG Process analysis

9.3. Appendix 3: Municipal Infrastructure Grant Spending 2016/17 – 2018/19

9.4. Appendix 4: Example of MIG-MIS and mSCOA non-financial and financial data

9.5. Appendix 5: Efficiency analysis

Appendix 1: Legislations and policies

Table 1 : Policies, Legislations and regulations

	Policy, legislation, and regulations	
	Name	**Purpose (summarised)**
Legislation and regulation	Constitution of the Republic of South Africa Act 108 of 1996	The right to have access to sufficient water and basic sanitation is encompassed in the constitution.
	Water Services Act 108 of 1997	The Water Services Act provide for the right to basic water supply and basic sanitation services. It recognises that the right of access to basic water supply and to basic sanitation services is necessary to ensure sufficient water and an environment that is not harmful to health or wellbeing of people and animals.
	Intergovernmental Relations Framework Act, 2005	A framework for the national government, provincial governments and local governments to promote and facilitate intergovernmental relations; to provide for mechanisms and procedures to facilitate the settlement of intergovernmental disputes
	National Water Act 36 of 1998	The National Water Act regulates the protection, use, development, conservation, management and control of water resources, including the allocation of water to municipalities for the provision of water services.

	Local Government: Municipal Structures Act 117 of 1998	The Municipal Structures Act provides for the establishment of municipalities in accordance with the requirements relating to categories and types of municipality. It establishes the criteria for determining the category of municipality to be established in an area and defines the types of municipality that may be established within each category.
	Local Government: Municipal Systems Act 32 of 2000	The Act allows municipalities to move progressively towards the social and economic upliftment of local communities, and ensure universal access to essential services that are affordable to all and defines the legal nature of a municipality, including the local community within the municipal area.
	Municipal Property Rates Act, 2004 (Act No. 6 of 2004)	Regulate the power of a municipality to impose property rates.
		Enable fair and equitable valuation methods of properties.
	Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003)	Secure sound and sustainable management of the financial affairs of municipalities and other institutions in local government.
		Establish treasury norms and standards for local government.

	Local Government: Municipal Systems Act, 2000 (Act No. 32	Establish a framework that supports, monitors and sets standards for other spheres of government to progressively build local government into an efficient frontline development agency that integrates all governmental activities involved in socially and economically uplifting communities in harmony with their natural, local environment.
		Ensure universal access to essential affordable services affordable to all.
		Define the manner in which municipal powers and functions are exercised and performed.
		Establish a simple and enabling framework for the core planning, performance management, resource mobilisation and organisational change processes that underpin the notion of developmental local government.
	Local Government: Municipal Structures Act, 1998 (Act No. 117 of 1998)	Appropriately divide functions and powers between municipal categories.
		Regulate the internal systems, structures and office-bearers of municipalities.
	Division of Revenue Act (DoRA)	The transfer of RBIG funds from the National Treasury to the Department of Water and Sanitation take place as per the DoRA.

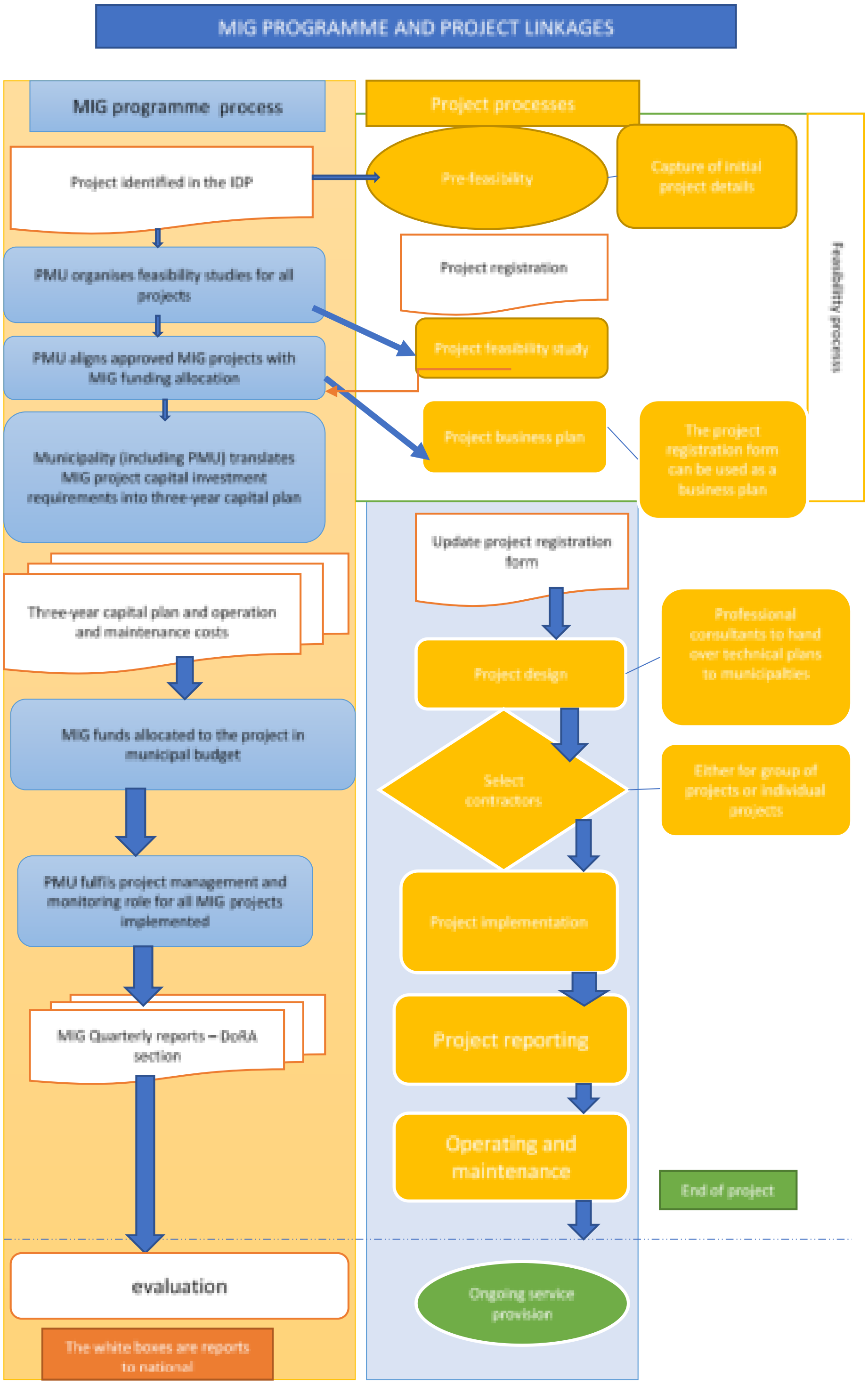
Policy and strategies	White Paper on Water Supply and Sanitation (1994)	The White Paper on Water and Sanitation outlines the institutional framework proposed for water supply and sanitation services. It also provides standards and guidelines for basic service delivery and sets out policy for the financing of services.
	White Paper on a National Water Policy for South Africa (1997)	The White Paper on National Water Policy set out new integrated policy positions for protection, use, development, conservation, management and control of South Africa's water resources.
	White Paper on Basic Household Sanitation (2001)	The policy focuses on the provision of a basic level of household sanitation to mainly rural communities and informal settlements. It also deals with the need for an environmentally sound approach to providing sanitation services and addresses the need to protect surface and ground water resources from sanitation pollution through integrated environmental management practices.
	Strategic Framework for Water Services (2003)	The policy outlines the institutional framework for water provision in the country, ranging from small community water supply and sanitation schemes in remote rural areas to large regional schemes supplying water and wastewater services to people and industries in our largest urban areas. The

		framework provides that the Department of Water and Sanitation will regulate and support water services authorities in their role of providing water services.
	Medium Term Strategic Framework (MTSF)	Outcome 6: An efficient, competitive and responsive economic infrastructure network
		Outcome 7: Comprehensive rural development and land reform
		Outcome 9: Responsive, accountable, effective and efficient developmental local government
	White Paper on Local Government (1998)	It provides the transitional framework and programme for the transformation of the local government of South Africa. Its aim is to improve the value of the lives of the citizens and to meet their social, economic and material needs in a sustainable way.
	Spatial Planning and Land Use Management Act 16 of 2013	Develops a new framework to govern planning permissions and approvals, sets parameters for new developments and provides for different lawful land uses in South Africa. SPLUMA is a framework law, which means that the law provides broad principles for a set of provincial laws that will regulate planning.
	Policy Framework for the Introduction of the Municipal Infrastructure Grant MIG (2004)	A Policy Framework for introducing MIG was presented by government to provide capital finance for basic municipal infrastructure of poor

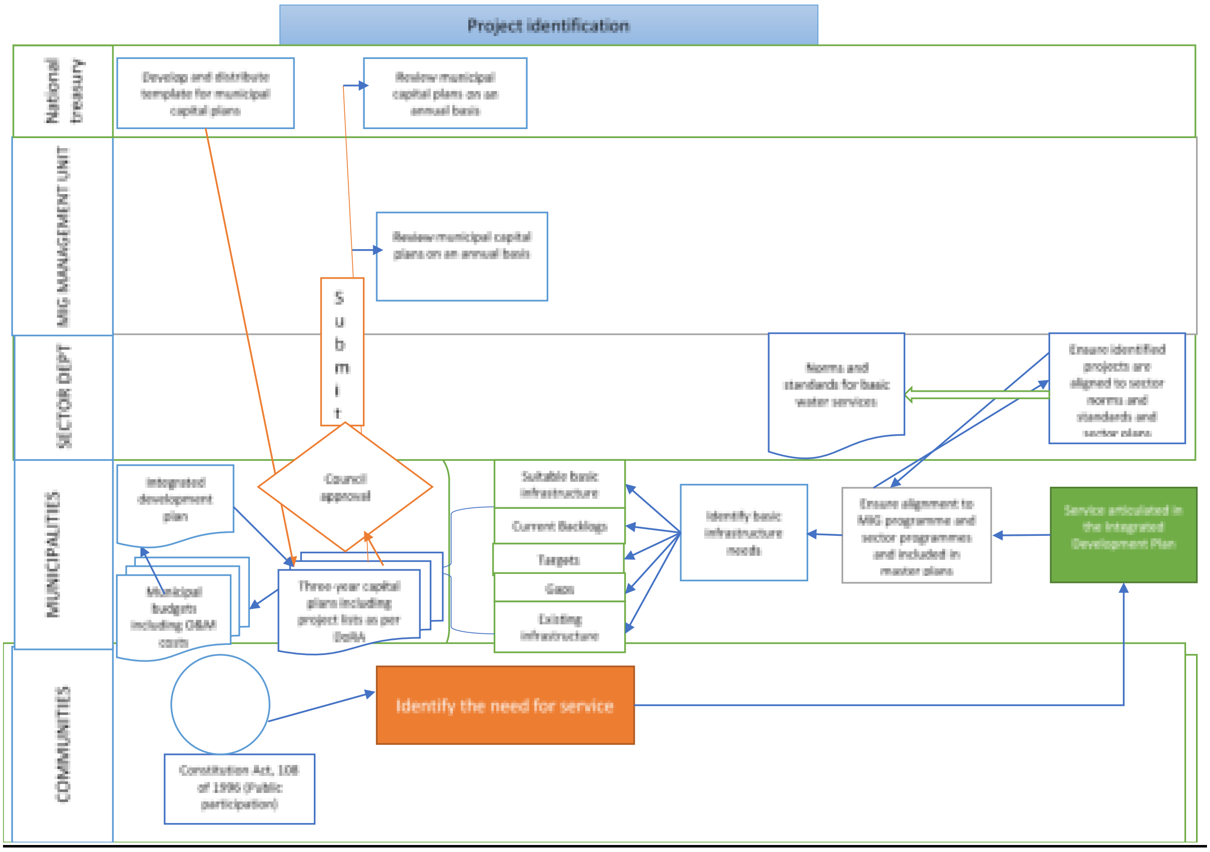
		households, and to a limited extent, to micro enterprises and deserving institutions
	National Water and Sanitation Master Plan (NW&SMP)	The purpose of the National Water and Sanitation Master Plan is to provide an overall perspective of the situation in the water and sanitation sector and a consolidated plan of actions, to improve the current situation to meet the desired future state of the sector, defined by Government's vision, goals and targets until 2030 (National Development Plan and Sustainable Development Goals').
	A Guide for the Establishment of a Project Management Unit (PMU) by municipalities 2007/08	To guide PMUs in the development of the capacity to deliver MIG.
Norms and standards	National Norms and Standards for Domestic Water and Sanitation Services (2017)	The norms and standards for levels of water services draw on the principles of universal access, human dignity, user participation, service standards, redress, and value for money. The norms and standards ensure the principles of sustainability, affordability, effectiveness, efficiency, and appropriateness are kept upmost in supplying water to a community.

Appendix 2: MIG Process analysis

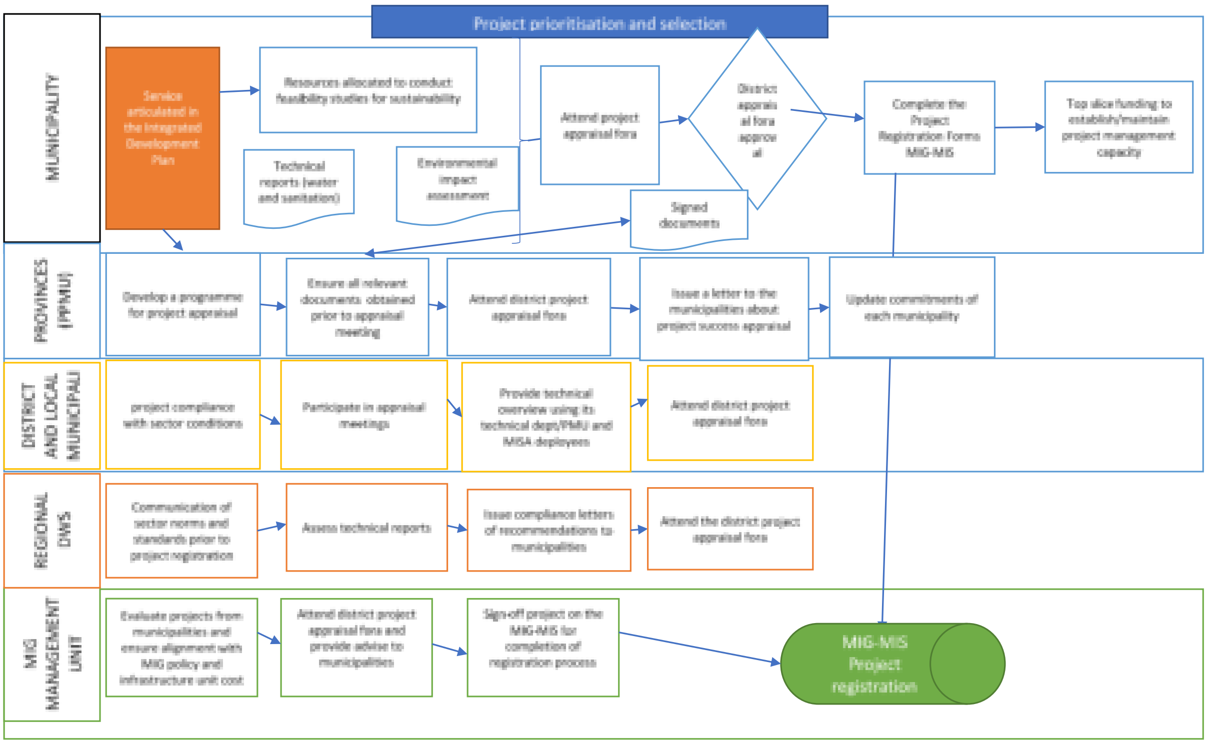
Programme and project link



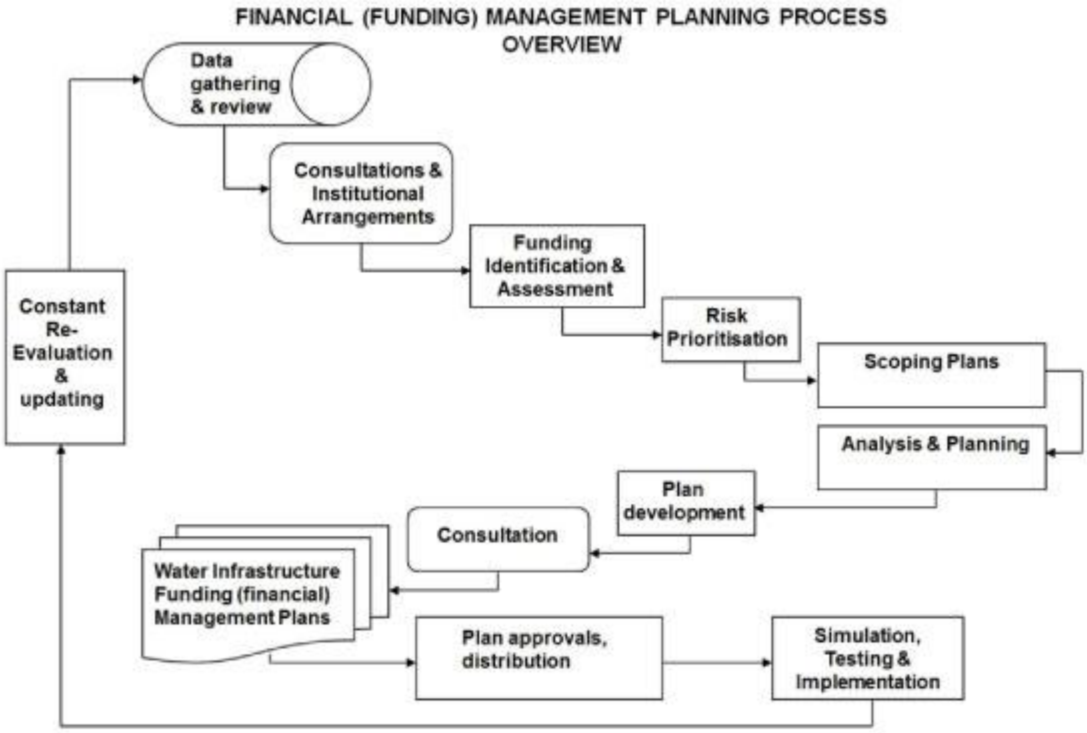
Project Identification Process



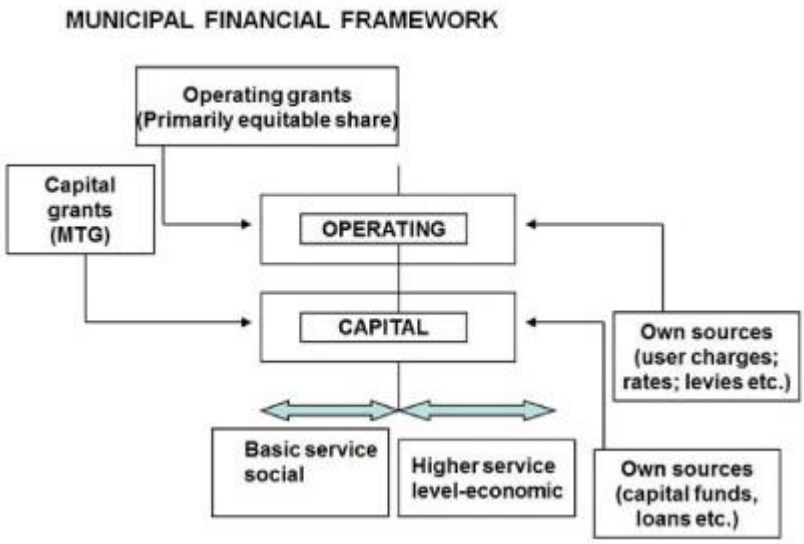
Project Prioritisation and selection



Funding Process



Municipal Financial Framework



Appendix 3:Municipal Infrastructure Grant Spending and Household information

MIG Allocation for All Sectors - 2016/17 to 2018/19

Provinces	Allocations	Spending	Variance	Spending % of allocations	MIG allocation 3-year growth rate	MIG Spending 3-year growth rate
Eastern Cape	9 081 381	8 232 847	848 534	91%	1%	3%
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Limpopo	5 143 975	5 548 393	- 404 417	108%	4%	9%
Mpumalanga	2 939 664	2 934 804	4 861	100%	0%	-11%
Northern Cape	791 449	518 718	272 731	66%	-4%	-3%
North West	2 821 549	2 635 956	185 592	93%	0%	15%
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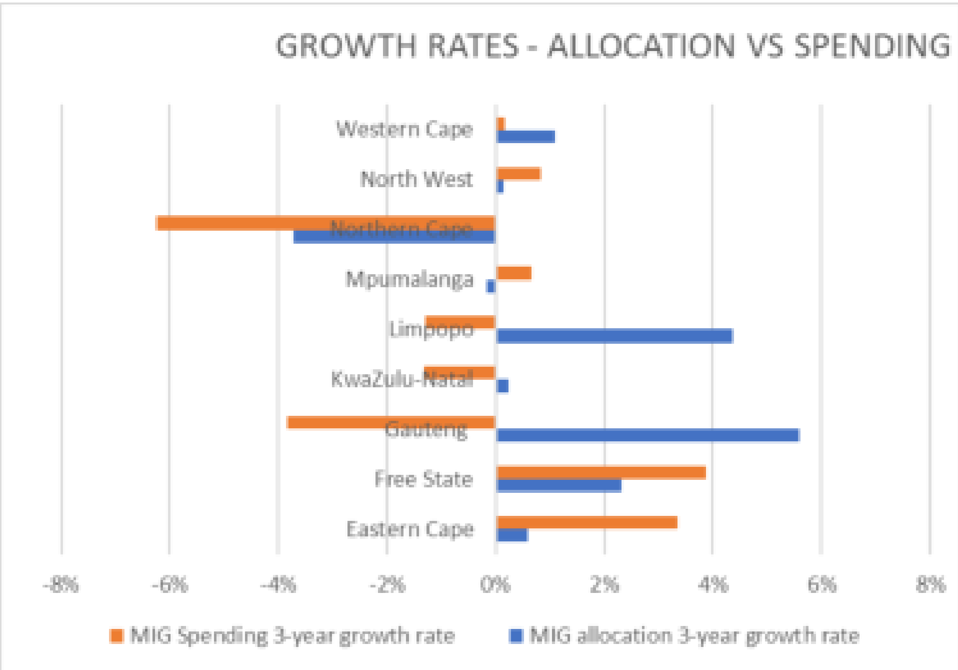
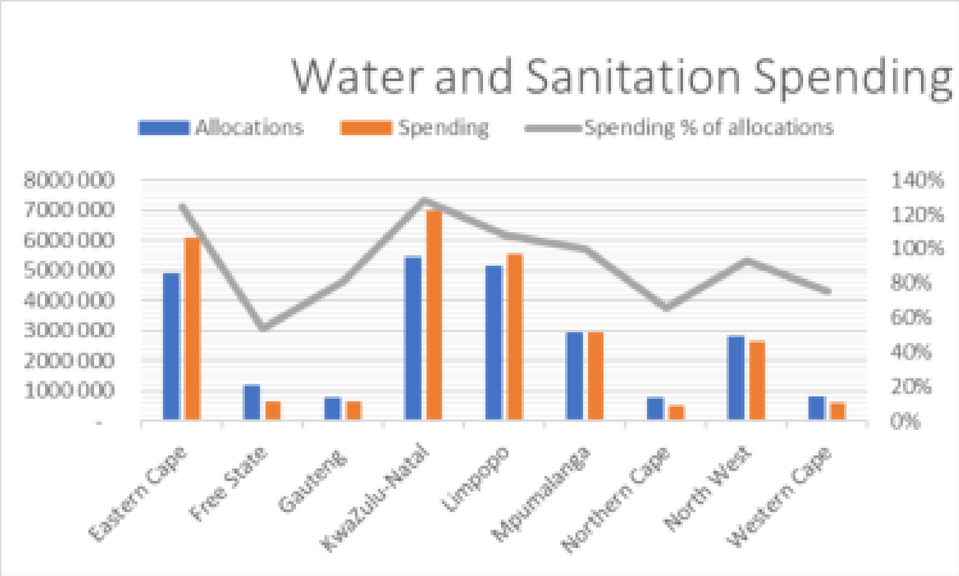
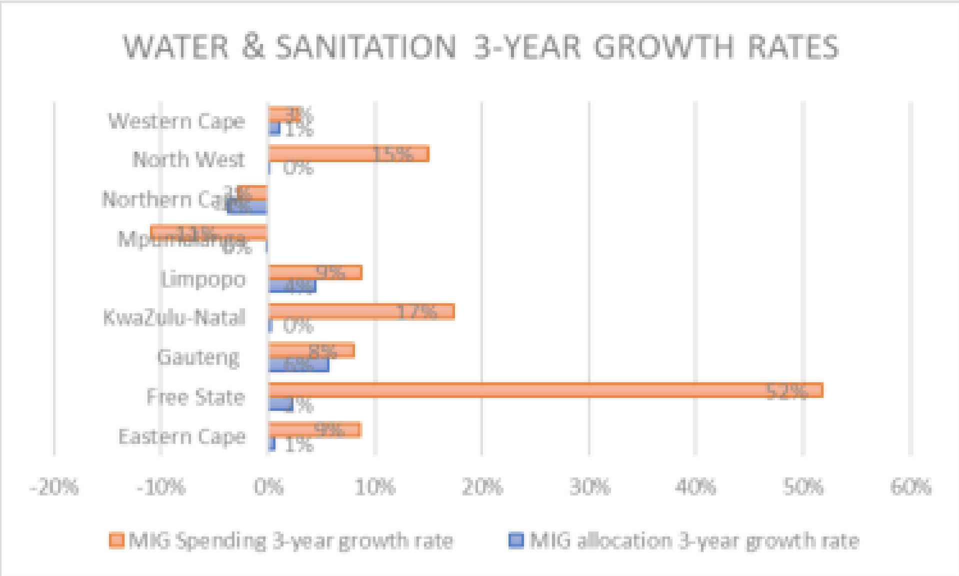




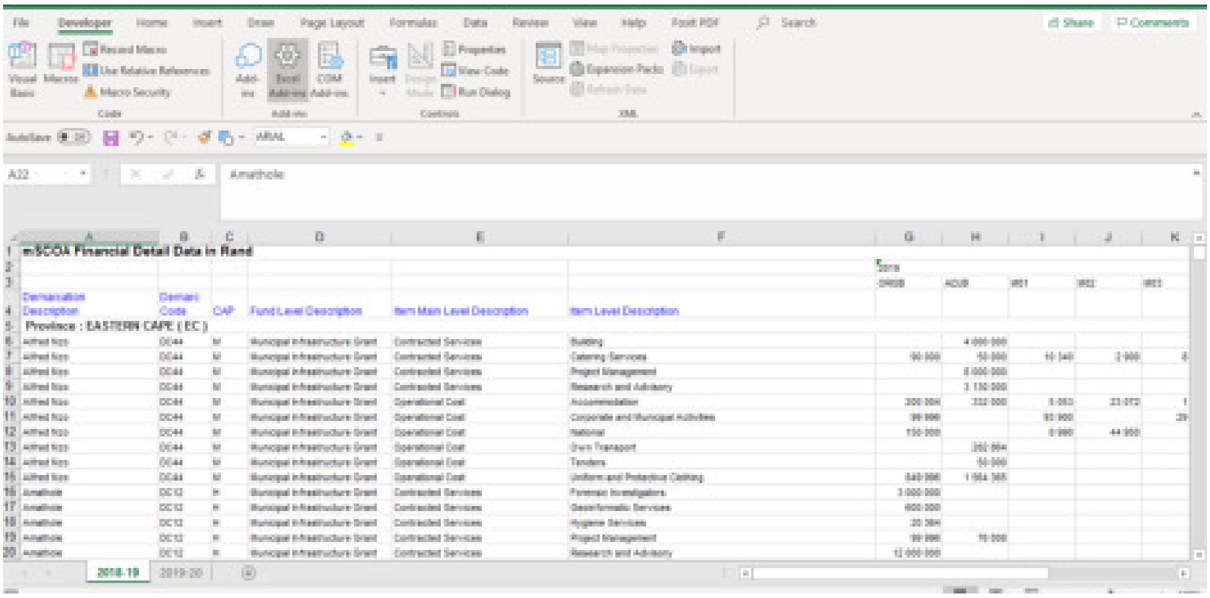
Water and Sanitation Spending
Allocations
Spending
Spending % of allocations
8000 000
7000 000
6000 000
5000 000
4000 000
3000 000
2000 000
1000 000
140%
120%
100%
80%
60%
40%
20%
0%
Eastern Cape
Free State
Gauteng
KwaZulu-Natal
Limpopo
Mpumalanga
Northern Cape
North West
Western Cape



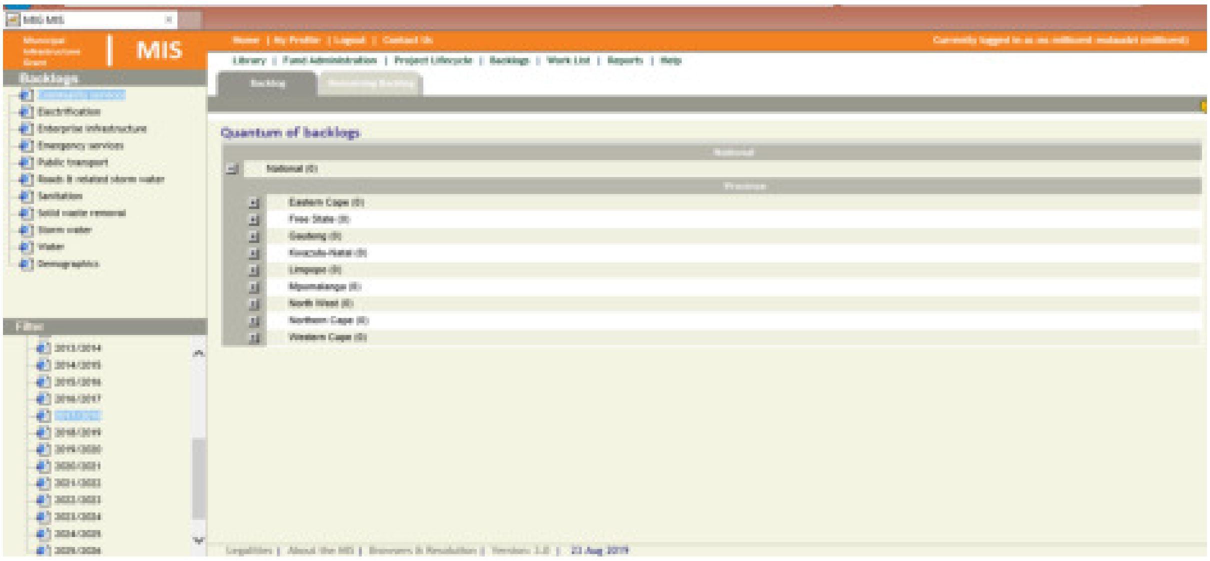
WATER & SANITATION 3-YEAR GROWTH RATES
Western Cape
North West
Northern Cape
Mpumalanga
Limpopo
KwaZulu-Natal
Gauteng
Free State
Eastern Cape
15%
17%
52%
-20%
-10%
0%
10%
20%
30%
40%
50%
60%
MIG Spending 3-year growth rate
MIG allocation 3-year growth rate

Appendix 4: Example of MIG-MIS and MSCOA non-financial and financial data

1. mSCOA example – 2018/19



2. MIG-MIS example



Appendix 5: Efficiency analysis

1. Introduction

The spending review used a non-parametric method known as the Data Envelopment Analysis (DEA) to analyse the technical efficiency of 9 provinces. The DEA is a comparative efficiency benchmarking tool that uses sectoral inputs and outputs (production technology) to form the best efficiency frontier (score of 100%). The inefficient Decision-Making Units (DMUs) mimic the best technology by improving inputs or outputs. This benchmarking tool considers actual data and not estimates, and it adjusts for variances in size in the selected Variable Returns to Scale (VRS) orientation. The data considered in this case is the 3-year water and sanitation MIG expenditure and projects.

2. Analysis

The sample of the spending review consists of 9 provinces for the Model. The review measures the technical efficiency of the 9 provinces using the MIG expenditure and projects (**Table 3, below).** Data for the Model is based on a 3-year average from 2016/17 to 2018/19. There is variation in the provincial MIG spending data, as result the size of provinces matters in determining technical efficiency rates. Which is why the spending review uses an input-minimisation VRS DEA. That is, the objective is to determine the extent of MIG expenditure that can be optimised while producing the same number of the MIG projects.

Table 3: 3-year MIG data in water and sanitation (Spending in R'000)

Provinces	Spending	No. of MIG projects
Eastern Cape	6 102 755	354
Free State	657 603	139
Gauteng	648 495	37
KwaZulu-Natal	6 986 206	482
Limpopo	5 548 393	288
Mpumalanga	2 934 804	381
Northern Cape	518 718	122
North West	2 635 956	197
Western Cape	633 461	233
Total	**26 666 390**	**2 233**
Min	518 718	
Max	6 986 206	
Median	2 635 956	
Mean	2 962 932	
Standard deviation	2 619 859	
Correlation coefficient	83%	

4 provinces are technically efficient under the VRS (Table X, below). They used the current water and sanitation MIG spending efficiently compared to the other 5 inefficient provinces. Overall, the mean technical efficiency score is 72%, implying that the inefficient provinces have to improve water and sanitation MIG spending efficiency by 28% to reach the optimal production frontier. Only the Western Cape operates at the desired efficient scale. Provinces of DRS need to scale back their operations while those on IRS need to improve the scale of their operations.

Table 4: Model 1 Technical Efficiency: Water and sanitation

Provinces	CRS	VRS	Scale	
Eastern Cape	0,16	0,41	0,38	DRS
Free State	0,58	0,82	0,70	IRS
Gauteng	0,16	0,80	0,19	IRS
KwaZulu-Natal	0,19	1,00	0,19	DRS
Limpopo	0,14	0,27	0,53	DRS
Mpumalanga	0,35	1,00	0,35	DRS
Northern Cape	0,64	1,00	0,64	IRS
North West	0,20	0,23	0,90	IRS
Western Cape	1,00	1,00	1,00	-
Mean	0,38	0,72	0,54	

On the other hand, R26.6 billion (Table X) was spent on water and sanitation from 2016/17 to 2018/19. The EC, FS, GP, LP and NW could still implement the current number of MIG projects while reducing or improving the efficiency of their current spending collectively by R9.9 billion. Put differently, the savings of R9.9 billion could be used to implement additional MIG projects in these provinces or could be reallocated to other provinces or for alternative uses. 4 efficient provinces serve as peers for the 5 inefficient ones.

Table 5: MIG water and sanitation inefficiency indicators

Provinces	1. EC	2. FS	3. GP	4. KZN	5. LP	6. MP	7. NC	8. NW	9. WC	Total
Model : VRS										
Input 1: Expenditure (R'000)	6 102 755	657 603	648 495	6 986 206	5 548 393	2 934 804	518 718	2 635 956	633 461	26 666 391
Input radial movement	(3 587 791)	(121 312)	(129 777)	-	(4 059 703)	-	-	(2 039 709)	-	(9 938 292)
Input slack movement	-	-	-	-	-	-	-	-	-	-
Input target	2 514 964	536 291	518 718	6 986 206	1 488 690	2 934 804	518 718	596 247	633 461	16 728 099
Output 1: Projects	354	139	37	482	288	381	122	197	233	2 233
Output radial movement	-	-	-	-	-	-	-	-	-	-
Output slack movement	-	-	85	-	-	-	-	-	-	-
Input target	354	139	122	482	288	381	122	197	233	2 318
DMU peers	6;9	9;7	7	4	6;9	6	7	9;7	9	

Note: Expenditure is in R'000

Table 6 shows variations in project average costs across the country but there appears to be no correlation between the number of projects implemented and the average project costs. 2 333 MIG projects were implemented over the period and on average, a MIG project over the 3 years cost R11.9 million. 749 293 households benefited from these projects, translating into 336 beneficiaries with a spending per capita of R36 000.

Table 6: Project cost and benefit analysis

Provinces	Spending	No. MIG projects	Project average costs
Eastern Cape	6 102 755	354	17 239
Free State	657 603	139	4 731
Gauteng	648 495	37	17 527
KwaZulu-Natal	6 986 206	482	14 494
Limpopo	5 548 393	288	19 265
Mpumalanga	2 934 804	381	7 703
Northern Cape	518 718	122	4 252
North West	2 635 956	197	13 380
Western Cape	633 461	233	2 719
Total	**26 666 390**	**2 233**	**11 942**
No. Beneficiaries	**Beneficiaries/project**	**Spending per capita**	
749 293	336	36	

Note: Expenditure is in R'000

Observation

The provinces with the most underspending also appeared to be inefficient. However, it is important to note that the Model did not include various provincial dynamics or factors such as such as backlogs, vast distance, mountainous and rocky terrain, poor contract and project management, community protests which could influence the efficiency scores. Therefore, realised efficiencies could be overestimated. Given the dire needs in provinces like the Eastern Cape, Limpopo and North West, the inefficiency rates points to the need to serious dedicated interventions to improve spending efficiency. These factors could also affect project costs and efficiency rates. In terms of these, the spending review proposes for the benchmarking of costs in provinces affected by these factors separate from those not experiencing most of them. Therefore, the department can also develop standardised costing guidelines for a group of provinces. The average provincial beneficiaries and cost per capita could not be determined as provincial-level data was not provided.

All the MIG components have inefficiencies signalling the need for municipal capacity support by the sector departments and DCOG. It is proposed that some of the potential savings be allocated for operations and maintenance of municipal infrastructure within the MIG, given the high inefficiency rate.