Developing innovative approaches to national allocations and transfers to local government and its use

Report to the

WATER RESEARCH COMMISSION

by

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EXECUTIVE SUMMARY

This document is the final output of the WRC project 'Developing innovative new mechanisms for national allocations and transfers'. The project under which this report falls has been through six phases and included a literature review, stakeholder interviews, stakeholder workshops and a financial analysis. The findings are drawn from all of these sources. The study examines the mechanisms by which local government is funded to provide water and sanitation services in South Africa. Through a financial analysis, comparison with a number of case study countries, and discussions with stakeholders in South Africa, the current system of fiscal transfers and its strengths and weaknesses is assessed, and innovations proposed.

Institutional background

The system of transfers from national government to water service authorities (WSAs) in South Africa is based on differentiation, which influences grant allocation with the identification by national government of 27 ‘priority’ districts, which include the 21 which are water services authorities (WSAs) and six others. The criteria for including the six others are not clear.

Table A: Subdivision of municipalities which are water services authorities (WSAs) based on grant access (2011 data)

	Number of households (millions)	% split of households	% high-income households (> R6 400 pm)
A - Metros	6.2	43%	33%
B1 - Secondary cities	2.2	15%	26%
LW1 – Local municipalities which are WSAs and within the 6 priority districts which are not WSAs	0.7	5%	15%
LW2 – Local municipalities which are WSAs and not in priority districts	1.8	12%	20%
DW – District municipalities which are WSAs	3.7	25%	12%
Total	**14.5**	**100%**	**24%**

Table A also gives an indication of the economic circumstances in these municipalities, using the percentage of high-income households as an indicator. The DW municipalities are indicated as being much poorer than the rest. LW1 municipalities are poorer than their LW2 counterparts.

There is a degree of alignment between the economic circumstances of municipalities and their capacity although this is by no means direct; some poorer municipalities perform better than their wealthier counterparts. The situation with organisational capacity in DW municipalities is particularly severe and there have been several studies that show their low level of access to technical and financial skills and the associated poor performance in managing water services infrastructure, the primary mandate of DW municipalities.

Current system of transfers

South Africa has a complex system of transfers to local government which has evolved over the past two decades. In considering the transfers which are intended for water services, there are three broad groups (See Table B): the local government equitable share which is intended to cover operating costs; infrastructure grants which are primarily allocated by formula – the municipal infrastructure grant (MIG), the urban settlements development grant (USDG) and the water services infrastructure grant (WSIG); and infrastructure grants which are allocated at national departmental discretion – the regional bulk infrastructure grant (RBIG). As shown in the table, these grants are applied to specific groups of municipalities. The other key feature of the grants is the degree to which conditions are applied, with the equitable share being largely unconditional and all the others having conditions applied. None of the grants are allocated based on incentives.

Table B: Transfers made to municipalities which can be used for water services (2016/17 allocations)

Transfer name	Amount (R bn)	Description	Application to water services	Benefiting municipality	Type
Equitable share formula	52.6	Share of national total revenue	Used to cover WS operating costs for poor	All	Un-conditional, formula-based
Municipal Infrastructure Grant (MIG)	14.9	Primary infrastructure grant but excludes electricity	Covers WS other than for LMs in DW category	Non-metros	Formula-based, conditional
Urban Settlements Development Grant (USDG)	10.8	Infrastructure, land and social services. Emphasis on informal settlements	Covers WS	Metros	Formula-based, conditional

Transfer name	Amount (R bn)	Description	Application to water services	Benefiting municipality	Type
Regional bulk infrastructure grant (RBIG)	5.3	For bulk water and sanitation infrastructure, part to municipalities, part 'in kind'	WS only	Districts and locals (in kind)	DWS decision
Water services infrastructure grant (WSIG)	3.2	For water services to 27 priority districts	WS only	Specific municipalities (21 DW districts and local municipalities in 6 districts)	Formula-based, conditional

WS: Water services; DWS Department of Water and Sanitation; LM: Local municipality

It is notable that some municipalities get multiple grants for water services; DW and LW1 municipalities, for example, have access to MIG, WSIG and RBIG funding. Metros, at the other extreme, get only USDG funding. The extent to which these grants overlap and are subject to different conditions and administrative requirements is a concern in the design of the system.

Problem statement

The problem statement, summarised below, is based on the findings from the international literature review, the analysis undertaken as part of this research, individual stakeholder interviews and two stakeholder workshops.

Overall performance of the SA water services sector

From some perspectives, the South African water sector has performed well. Since 2001, access to infrastructure enabling people to gain access to an 'RDP' level of service has increased from 73% to 86%, and access to basic sanitation has increased from 57% to 69%. On the other hand, there are serious concerns about the capacity of the sector (national departments working together with municipalities) to keep infrastructure functioning properly. By far the greatest concern is in the rural areas of South Africa where district municipalities are WSAs.

Understanding costs

In designing a system of transfers, it is important to understand the costs of providing the infrastructure and keeping it fully operational. With regard to relative capital costs, the limited analysis undertaken for this study indicates that there are no significant differences in cost per

capita for regional and smaller stand-alone schemes in rural areas. In the case of the operating costs of these schemes, further work is required to better understand operating costs but indications are that smaller, stand-alone schemes are more cost effective. Another most important finding from the research is that there is no or little incentive for keeping costs low in municipalities which are largely grant funded. This leads to a situation where expensive systems are built, and high operating overheads incurred, with too little effort made to raise revenue.

Fiscal framework adequacy

The local government fiscal system, under which the range of transfers has developed, is held in high regard by international observers; overall, South Africa has a sound local government fiscal framework, at least from the point of view of water and sanitation funding. The shortcomings relate to the design of some grants and the lack of performance incentives. Promoting access to sources of finance other than grants is a central feature of the framework. Here it is recognised that some municipalities will never be self-reliant, but the system should promote self-reliance with greater fiscal effort by municipalities.

Equitable share and operating transfers

Currently, the equitable share is the primary transfer intended to be used to cover operating costs, with the emphasis on funding free basic services for the poor. While the adequacy of the transfer in terms of quantum is somewhat contested, the analysis available currently indicates that the level of transfers is sufficient. The experience of individual municipalities that they do not have sufficient revenue is typically related to a lack of fiscal effort on the part of municipalities with resulting over reliance on grant funding. Secondly, there are concerns with regard to the allocation of funding within the municipality. Municipalities can prioritise equitable share allocations at their discretion and this may result in other services being prioritised at the expense of operation and maintenance of water services infrastructure, or an excessive allocation to administrative overheads. A further challenge is the need for municipalities to ensure greater ‘value for money’ through increased efficiency.

Separate funding for maintenance

There has been considerable debate amongst stakeholders on the merits of taking some of the equitable share and allocating it to a separate transfer for maintenance. While several stakeholders were in favour of this there are also strong arguments against this from National Treasury, backed by the researchers responsible for this report. The problems with a new

grant are partly related to increased grant fragmentation and partly that this is using a funding mechanism to do what a well-functioning municipality should do anyway.

Capital finance and structure of capital grants

The level of transfers to local government for capital works has been increasing rapidly over the past decade, but the available analysis indicates that a substantial capital finance gap remains across all municipal categories. It is clear that the problem does not only relate to transfers but to lack of capacity to borrow and lack of attention to other sources of capital finance, borrowing and development charges included.

There are certainly wide differences across South African municipalities. Both international and local experience suggests that this needs to be built into grant design. This is already happening with five categories of municipality treated differently (see tables A and B). But there are shortcomings. Firstly, the criteria for identifying 'LW1' municipalities, giving them access to WSIG funding, are very unclear. Secondly, WSIG funding is also allocated to some secondary cities with uncertain criteria. And thirdly, in the case of RBIG, this is allocated based on application and the discretion of the national Department of Water and Sanitation, and the extent to which this is equitable is open to question.

Co-funding

The literature strongly favours co-funding incentives as this has the potential to bring more capital into a municipality and break down dependence on grants. While this is built into conditions for some grants, RBIG most notably, there is a consistent recognition that economically weaker municipalities just do not have the credit-worthiness to raise their own capital through borrowing.

Consolidated vs sector-specific grants

Consolidated grants are those which can be used by municipalities for a variety of infrastructure. Examples are MIG and USDG. They allow municipalities to prioritise expenditure based on their unique contexts, whilst sector-specific grants require municipalities to focus on national developmental agendas. International experience is not clear on whether consolidation is better or not, although the trend is towards consolidation. Ambiguity was also evident from stakeholder interviews; typically, sector departments at national and local level favour sector-based grants in that they provide greater control over the way the funds are used by the departments concerned, while cross-sectoral national departments, municipal treasuries and municipal managers are likely to favour consolidated grants.

An argument against fragmentation emanating from the analysis undertaken from this research is that where water services-specific grants are introduced, this does not necessarily lead to more expenditure on water and sanitation. There are still several separate grants allocated to some individual municipalities: MIG, WSIG and RBIG. Where municipalities get more water services grant funding the evidence indicates that they merely cut back on the use of MIG for water services and divert this funding to roads, for example. Another argument against fragmentation of grants is that it becomes increasingly difficult for municipalities to understand and manage them.

Direct or indirect grants

Internationally, the trend is towards direct grants. In South Africa, this has also been favoured with current concerns over the use of indirect grants raised by the Financial and Fiscal Commission and National Treasury, based on their assessment that RBIG funds are not being spent effectively.

Capital transfer allocation mechanisms

The allocation mechanism for capital grants is probably the most controversial aspect of capital grant policy. Firstly, it needs to be recognised that formula-based grants are widely used and widely accepted internationally, with Mexico, Colombia and India using this approach, for example. Much depends on the design of the formula and there are concerns here, one being over the way the formula provides for new infrastructure as well as the renewal of infrastructure. The MIG formula currently favours new infrastructure, for example, yet increasingly municipalities need to invest in renewal of their existing infrastructure systems. Another common argument over the formula-based approach is that it does not take varying infrastructure cost factors into consideration.

Where a formula is not used, as is the case with RBIG, there is typically the requirement to apply for a grant and for the national department to respond or identify the need for a particular project itself. There are equity concerns here related to the extent to which 'smarter' municipalities benefit and the favouring of large-scale infrastructure over smaller schemes.

Grant conditionality

The views on conditionality are ambiguous, both internationally and locally. Departments responsible for grants want to ensure they are properly spent and hence apply conditions, while municipalities believe there should be greater flexibility. South African stakeholders

accept that for conditionality to work there needs to be sound monitoring and intervention mechanisms and these are not well established in the country.

Penalties and incentives

An obvious conclusion from the financial and performance assessment carried out as part of this study it that the current grant system does not incentivise good performance. Many municipalities, specifically in the DW category, spend large amounts of capital grant funding on infrastructure which they cannot manage properly with the result that the infrastructure fails to function properly. The extent to which this can be solved through greater incentives or penalties is open to question but there is certainly room for improvement. This improvement probably has to be applied to capital grants as the equitable share transfer cannot be made conditional.

International experience indicates that incentive-based grants and loans have proven to be an effective driver for reform. Stakeholders in South Africa broadly support the introduction of incentives but it is clear that these would need to be correctly designed, communicated and applied.

Capacity building

There is strong case for funding capacity building, from the international literature. This is backed up by the research undertaken for this study. The returns on money invested in capacity building are considered to be high as large savings can be made on infrastructure with proper maintenance and revenue raising can be dramatically improved. Further, the research, backed up by stakeholder interviews, indicates that lack of technical capacity, particularly in more rural municipalities, is the most serious issue facing the water sector in South Africa. Yet capacity-building initiatives have generally not been successful; these programmes are seen to be diffuse and uncoordinated. The argument emanating from this research is that capacity-building programmes have not been well enough designed and funded. There is some hope for the Municipal Infrastructure Support Agent (MISA) regional management support contract initiative, but this is not going well currently.

Administrative challenges of the national transfer system

Grant administration has been found to be one of the broader systemic challenges identified in the study. This is not because there is inadequate reporting; in fact, this has been found to be onerous for municipalities, yet has little effect on the performance of the grants. Further to this, there would appear to be instances in which the application of the grant differs in practice, compared to what was envisaged.

Monitoring and evaluation of the current grant framework is lacking. The current focus tends to be on ensuring that all funds are spent, rather than assessing other indicators such as value for money and longer-term impacts. There is also a lack of data being used to inform decision making. This is not because municipalities are not providing information. The primary reason is argued to be poor design of the performance system and inadequate national data monitoring and information feedback systems.

Policy recommendations

The research has shown that the overall system of transfers in South Africa is sound and there is no need for radical change. However, there is a general lack of incentives to promote efficiency and better performance. There are also equity concerns and other areas where improvements need to be made, with the key recommendations summarised below.

Understanding costs of infrastructure

A system of transfers aimed at providing finance to cover specific costs must be based on an understanding of these costs. A recent review by the FFC and the South African Local Government Association (SALGA) has gone some way to addressing these costs, and this needs to be followed up to assess the implications for the design of transfers. The need to get a better understanding of the difference in costs between regional and smaller local schemes is also evident, as is the importance of cost benchmarking for water and sanitation operating costs in order to inform the design of transfers.

The equitable share and operating transfers

The existence of a funding gap in the operating account is a controversial topic, with this research concluding that there is not a structural funding gap. Where a gap exists in particular municipalities the problem is typically a low level of fiscal effort resulting in revenue due to the municipality not being collected. In this light, additional operating transfers are not recommended, with the local government equitable share system appearing sound in general, at least from the point of view of water services. But the way the equitable share is applied to different services within a municipality is concerning. A guideline on how to apply the equitable share would be useful to municipalities and could build on previous WRC work.

Capital finance and structure of grants

In the case of the capital account, the situation is different; there is a serious funding gap with municipalities not having access to sufficient capital finance to cover provision of new

infrastructure and renewal of existing infrastructure. But it is accepted that currently it is not possible to further increase the level of capital grant allocations to municipalities. Rather, the emphasis in the medium term needs to be placed on other sources of funding. Co-funding through raising debt finance or direct involvement of the private sector in providing services are possibilities. But economically weak municipalities face large constraints in raising such funding. While it is outside the mandate of this research to propose other funding sources, it is clear that means of improving credit ratings, more attention to public private partnerships and improved application of development charges all need attention.

The extent to which capital grants should be consolidated or be applied as separate grants is a key issue. While there is no universal preference for consolidated grants over separate sector-based grants, the experience in South Africa strongly favours consolidation. Recent evaluations of MIG have generally been positive, for example. Therefore, it is proposed that over the coming years the WSIG and RBIG grants should be progressively reintegrated into MIG, even if this means adapting the MIG formula. However, it is recognised that there still needs to be separate funding for larger, truly regional water supply projects. Therefore, RBIG needs to be re-designed and, along with greater regionalisation of water boards, may be targeted at them. A motivation for this is that water boards can come up with co-funding.

Horizontal distribution of capital transfers

Differentiation in the way capital transfers are allocated has taken place firstly through the categorisation of municipalities into five groups: metros (A), secondary cities (B1), local municipality WSAs which are part of priority districts (LW1), other local municipality WSAs (LW2) and district WSAs (DW). While there are rational arguments for differentiating between A, B1, LW and DW WSAs, no rationale could be found for the splitting of local municipality WSAs between LW1 and LW2 which is related to the way the six priority districts which are not WSAs were identified. Policy on this must be clarified.

Looking at the way the distribution of individual grants takes place, a formula is applied in the case of MIG, with a recent policy review by the Department of Cooperative Governance (DCoG) making recommendations on how this can be improved. WSIG is also allocated by formula to DW, LW1 municipalities and some others. The motivation for selecting the others is not clear. In distributing between DW and LW1 municipalities, the formula is based on the numbers of households with water and sanitation backlogs. A policy for WSIG, including the basis for distribution, could not be obtained. Policy needs to be provided and be subject to review.

Turning to the distribution of RBIG funds, this research shows that there are important concerns around the way RBIG funds are distributed and there are clear indications of lack of equity in the distribution. Further, the RBIG grant by definition favours large schemes over small ones and this raises sustainability concerns. The policy needs to be reviewed taking equity and sustainability criteria into consideration.

Capital grant conditions

It has not been possible to assess all the conditions for all grants. However, it is evident from the research that conditions are often excessive and there is little means to ensure compliance. The conditions for the USDG and MIG have recently been assessed as part of an evaluation and policy review respectively. The recommendations there need to be implemented. In the case of RBIG and WSIG, an assessment of performance criteria and associated conditions needs to be undertaken.

Incentives

There is widespread support for an incentive-based orientation of grants, both locally and internationally. Yet little has been done in South Africa outside the metros. However, there are policy initiatives; the MIG policy review makes detailed incentive proposals, although there is no intention from DCoG to implement these in the medium term, and FFC is working on a policy position on incentives. It is important for these policy positions to be moved into implementation.

Capacity-building grants

The best way of approaching the capacity problem in SA municipalities is to undertake a review of what has happened in the past and get buy-in at cabinet level to a large-scale initiative which is adequately backed with finance. In the interim, the shortcomings in the way the regional management support contracts are being rolled out by MISA must be assessed. The concept is based on an accepted business plan and needs high-level backing and funding.

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Thank you, too, to the many people representing stakeholders who gave up their time to be interviewed for this study.

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LIST OF ABBREVIATIONS

ADM	Amathole District Municipality
AIIM	African Infrastructure Investment Managers
BVM	Breede Valley Local Municipality
CMA	Catchment Management Agency
CNA	Comisión Nacional del Agua- National Water Commission, Mexico.
CoGTA	Department of Cooperative Governance and Traditional Affairs
CT	Cape Town
DBSA	Development Bank of Southern Africa
DCoG	Department of Cooperative Governance
DHS	Department of Human Settlements
DLM	Drakenstein Local Municipality
DWS	Department of Water and Sanitation
DWSRF	Drinking Water State Revolving Fund
EPWP	Expanded Public Works Programme
ES	Equitable share
FFC	Financial and Fiscal Commission
FISM	Fondo para la Infraestructura Social Municipal
FPF	Federal Participation Fund
GAPD	Governance, administration, planning and development
ICDG	Integrated City Development Grant
LGES	Local government equitable share
LGFF	Local Government Fiscal Framework
MDB	Municipal Demarcation Board
MIG	Municipal Infrastructure Grant
MIIF	Municipal Infrastructure Investment Framework
MISA	Municipal Infrastructure Support Agent
MPF	Municipal Participation Fund
MWIG	Municipal Water Infrastructure Grant
NT	National Treasury
O&M	Operation and maintenance
PBG	Performance-based grant
PM	Participaciones Municipales
PMU	Project management units
PSP	Professional service providers
RBIG	Regional bulk infrastructure grant
SALGA	South African Local Government Association
SBM	Saldanha Bay Local Municipality
SC	Special category
SGP	Sistema General de Participaciones
TCTA	Trans-Caledon Tunnel Authority
TVU	Transferencias Voluntarias da Uniao
ULB	Urban Local Bodies
USDG	Urban Settlements Development Grant
WCDM	Water conservation and demand management
WDM	Water demand management
WRC	Water Research Commission
WSA	Water services authorities
WSIG	Water services infrastructure grant
WSS	Water and sanitation services

1 INTRODUCTION

This document is the final output of the Water Research Commission (WRC) project 'Developing innovative new mechanisms for national allocations and transfers'. The project under which this report falls has been through six phases with the following reports and memoranda forming the combined output of the project:

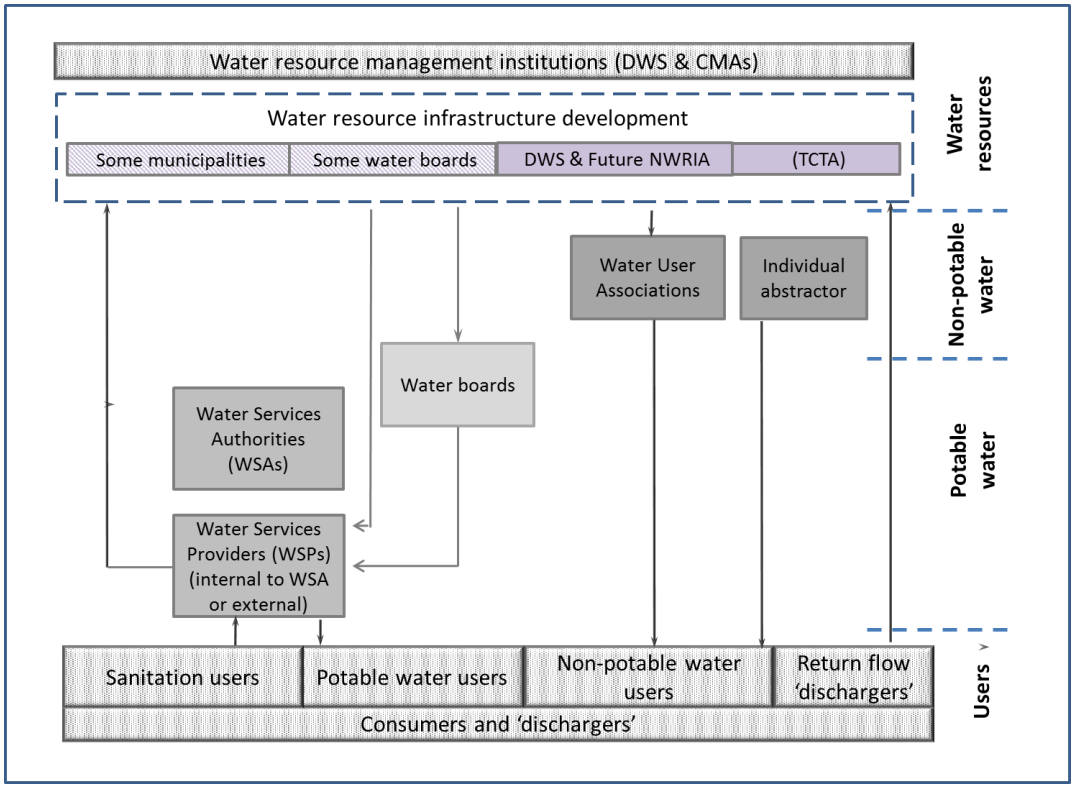
- Inception report
- Literature review
- Phase 3 report incorporating literature review and partial stakeholder interviews overview
- Financial and associated analysis report
- Workshop report for first stakeholder workshop in August 2016
- Notes from second stakeholder workshop in September 2016.

This report includes all the relevant information from the above reports as well as an integrated assessment from all stakeholder engagements and recommendations which have emanated from the research after discussions at the final two stakeholder workshops.

2 CURRENT SITUATION WITH WATER SECTOR FINANCE IN SOUTH AFRICA

2.1 Institutional arrangements

The institutional framework for the water and sanitation sector in South Africa is shown in the diagram below.



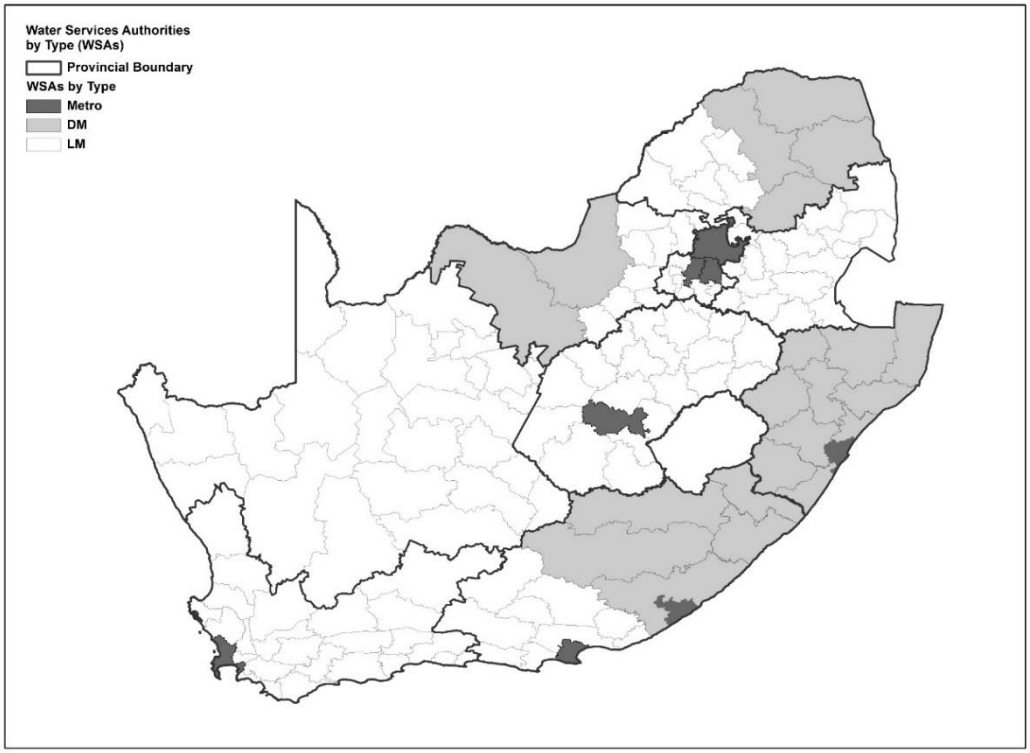
Note: DWS – Department of Water and Sanitation
CMA – Catchment Management Agency
TCTA – Trans-Caledon Tunnel Authority
NWRIA – Proposed National Water Resource Infrastructure Agency

Figure 1: Diagram showing infrastructure arrangement and associated institutions for the water sector in South Africa

This report deals only with water services, the left-hand side of the diagram. More specifically, it deals with the way transfers of funds are made to municipalities which are authorised to be water services authorities (WSAs). The term 'water services' includes water supply and sanitation, confined to bulk and distribution systems and excluding water resources infrastructure. But there are two qualifiers in the way funding aligns with this institutional structure:

- Some water services funding is allocated directly to water boards and does not pass through the water services authority account.
- Some WSAs also provide their own water resources infrastructure without there being a transfer of funds to them from the national fiscus for this component of the infrastructure system.

WSAs are broadly divided into three groups in relation to the category of municipality they inhabit: metropolitan municipalities, district municipalities and local municipalities (See figure below).



Source: Department of Water Affairs, 2013

Figure 2: Map of Water Service Authorities (metro, local and district municipalities)

Local municipalities are further divided into secondary cities – all of which are WSAs – and other local municipalities which are water services authorities, noting that where the district municipality is the water services authority, the local municipality cannot be. Statistics for these four groups are given in Table 1.

Table 1: Summary of Water Services Authority categories

WSA category	No of municipalities	Households (million)	Population (million)	Population split	% urban
	Census 2011				MIIF
A – metros	8	6.1	20.3	40%	97%
B1 – secondary cities	19	2.2	7.4	14%	75%
LW – other local municipalities	104	2.6	8.9	17%	36%
DW – district municipalities	21	3.6	15.1	29%	15%
Total	**152**	**14.5**	**51.8**	**100%**	

Source: Census 2011 and Municipal Infrastructure Investment Framework (MIIF)

This breakdown was used for the Municipal Infrastructure Investment Framework (MIIF) analysis (DBSA and CoGTA, 2010) and therefore allows for the MIIF financial models to be used for the current research and for sharing of MIIF conclusions.

This type of differentiation follows from the division applied by national departments into metros, four groups of local municipalities and two types of districts (DPLG, 2012). However, for the assessment of water services grants which is the subject of this report, the four-way breakdown which mixes metros, local municipalities and districts is more appropriate. The considerable variation from large urban metros (average population 2.5 million) to smaller local municipalities (average population 86 000) to large, mostly rural districts (average population 720 000) is evident.

As will be explained later in this report, the local municipalities group in Table 1 can be further divided into those which are within priority districts (LW1) and others which are not given specific priority (LW2), as shown in Table 2.

Table 2: Subdivision of municipalities which are water services authorities based on grant access (2011 data)

	Number of households (million)	% split of households	% high-income households (> R6 400 pm)
A	6.2	43%	33%
B1	2.2	15%	26%
LW1	0.7	5%	15%
LW2	1.8	12%	20%
DW	3.7	25%	12%
Total	**14.5**	**100%**	**24%**

2.2 Financial arrangements - overview

Funding for water supply and sanitation fits within the national local government fiscal framework shown in Figure 3 below. This deals with all local government expenditure and the means for funding this. The key principle is that each local government needs to be funded sufficiently, through a combination of funds raised by the municipality itself and transfers from the national fiscus, in order for the municipality to provide an effective service to all citizens in a sustainable manner (Department: Cooperative Governance, 2012).

The Local Government Fiscal Framework (LGFF) is designed to fund local government and not only the transfers from national government. The structure of the LGFF is complex and multi-dimensional and whilst there have been various structures of the LGFF in the past, the Financial and Fiscal Commission (FFC) has proposed the framework depicted in the diagram below (Financial and Fiscal Commission, 2012).

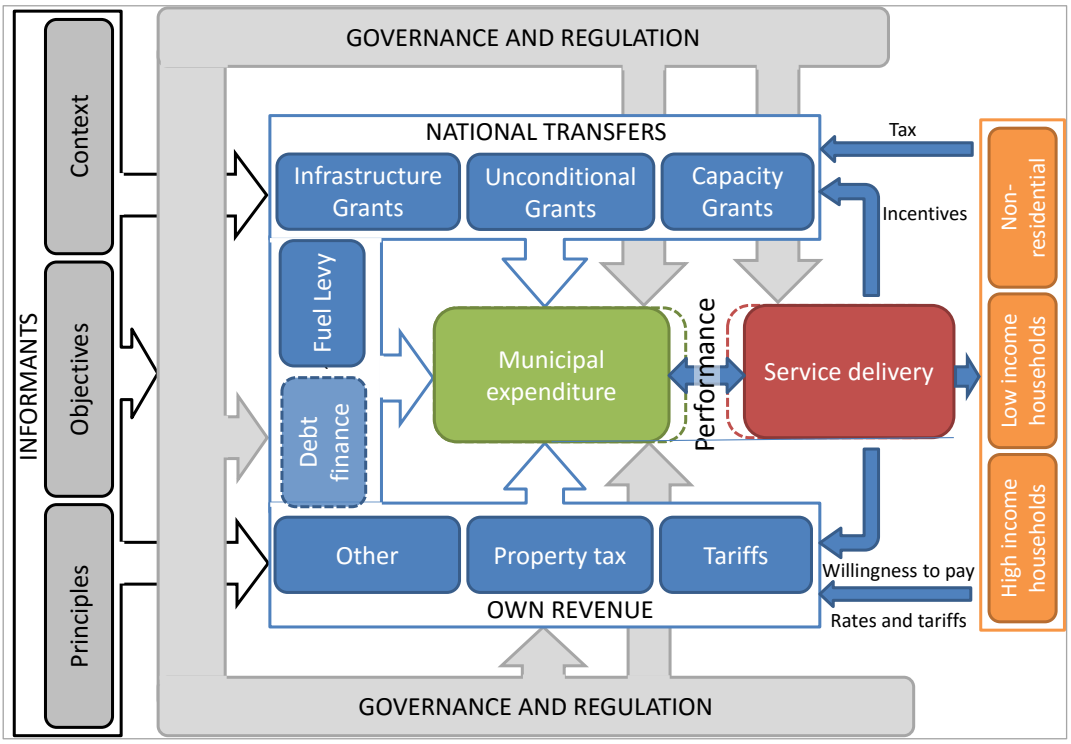


Figure 3: Structure of the Local Government Fiscal Framework

The informants to the LGFF and the recipients of municipal services are seen to be external to the LGFF. The principles and objectives and municipal context will inform the design of the fiscal and regulatory instruments as well the criteria for the evaluation of options within the LGFF.

National Treasury (NT), the Department of Cooperative Governance (DCoG) and Department of Water and Sanitation (DWS) are key players in terms of the governance and regulation layer of the framework. NT is responsible to ensure compliance with fiscal regulation, whilst DCoG is responsible for overall monitoring of service delivery and functioning of municipal systems. DWS is responsible for oversight of water services-related transfers and the regulation of water services, in terms of the Water Services Act No. 108 of 1997.

The revenue layer of the framework can be separated into two broad categories, namely, national transfers and municipal own revenue. Debt finance has also been included within the framework as a potential source of funding.

The LGFF has municipal expenditure at the core but service delivery remains the focus. Hence the introduction of a feedback loop between municipal expenditure and service delivery. Fiscal and municipal performance can be evaluated and measured at this point.

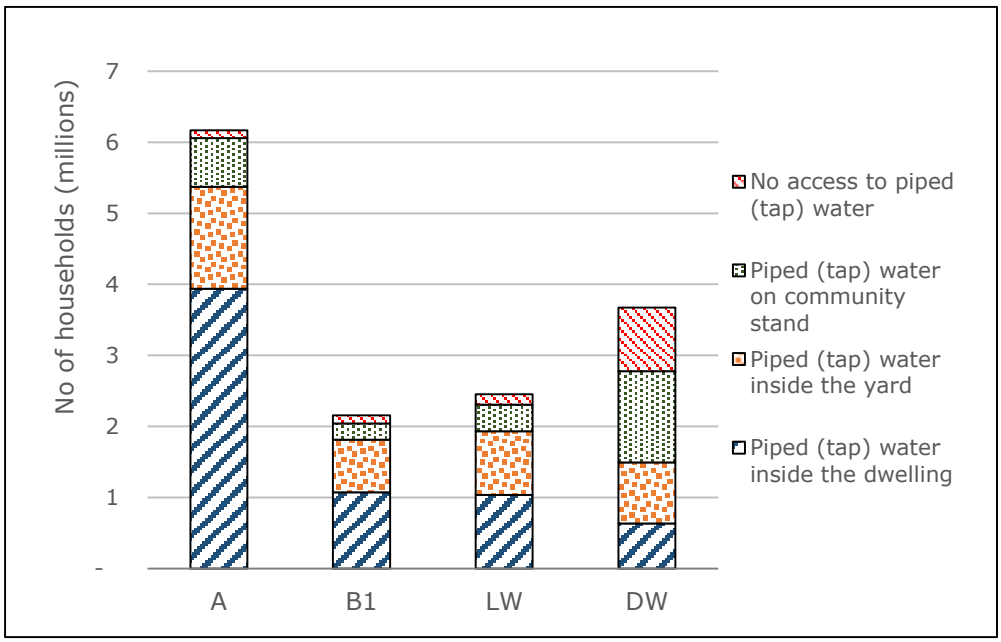
The LGFF has separated national transfers into the fuel levy, infrastructure grants, equitable share and other transfers. However, for the purposes of this report, fuel levies are excluded as they are not used for water services, and the remaining transfers which relate to water services are grouped as follows:

- Equitable share and other operating transfers
- Capital transfers intended to fund infrastructure
- Capacity-building transfers
- Transfers aimed at resource conservation with environmental objectives.

2.3 The contextual picture

Access to water

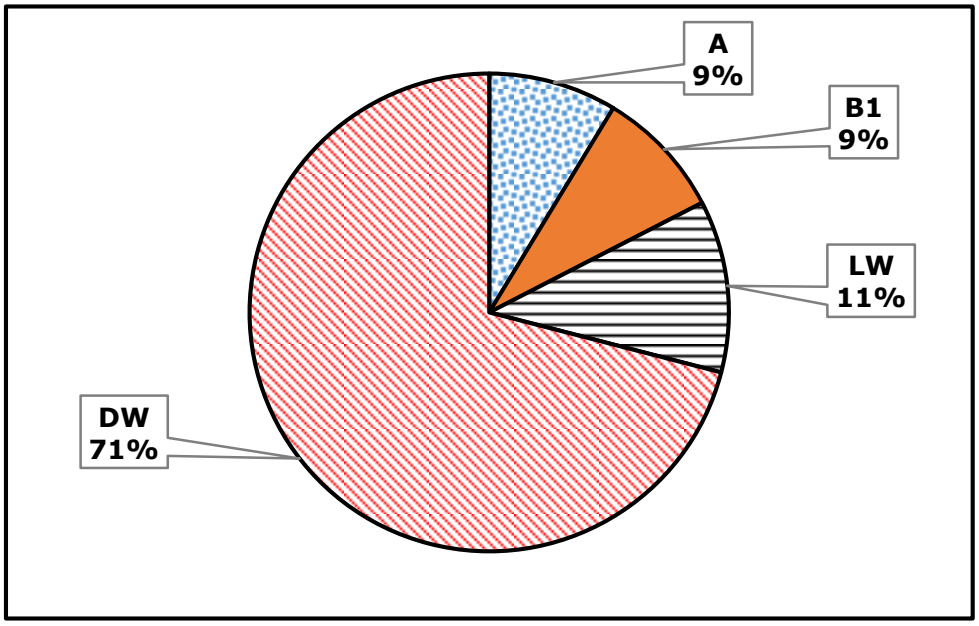
Given the variation in number and households in the different municipalities, it is necessary to understand the state of water services in each of the different categories. This is presented in the figure below.



Source: Census, 2011

Figure 4: Access to water: Census, 2011

Metropolitan municipalities have a small number – 2% – of households that do not receive piped (tap) water. Conversely, a higher proportion of people served by district WSAs do not have access to piped water – 24% – and there is a high proportion of households using community standpipes, consistent with the rural nature of settlements in these districts. The fact that lack of access to piped water is largely a rural problem, concentrated in the districts which are WSAs is illustrated in Figure 5. Source: Census 2011.



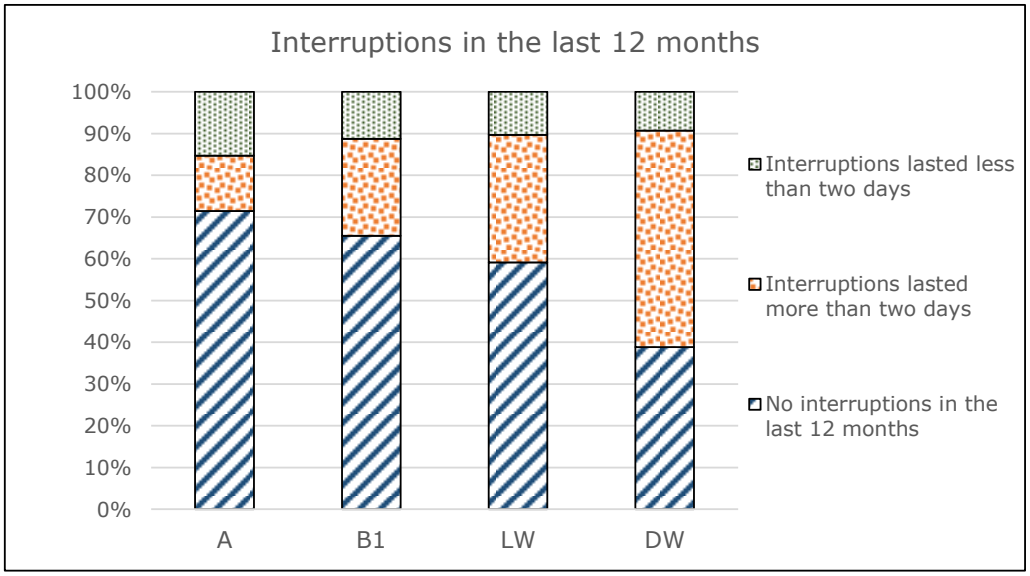
Source: Census 2011

Figure 5: Households with no access to piped water

There were 1.3 million households that did not have access to piped water in DW municipalities in 2011, a figure which is unlikely to have changed much since then.

Having access to piped water in the sense that there is a tap in place, either for the private use of the household or as a communal standpipe, is one thing. Having it functional continuously is another. In the 2011 Census, households that received water from a regional or local scheme were also asked if they had experienced any interruptions to service in the last 12 months and the duration of interruption experienced. This is used by DWS as a measure of the functionality of water supply infrastructure. The results are shown in Figure 6. Source: Census 2011

Figure 6.



Source: Census 2011[1]

Figure 6: Interruptions to water supply experienced in the last 12 months

Once again, it can be seen that metropolitan municipalities generally deliver a relative high quality of service with 71% of households that receive water from a regional or local scheme not experiencing any interruptions to their service. On the other hand, 61% of households in DW municipalities that receive water from a regional or local scheme had experienced interruptions to their service in the past 12 months, mostly for longer than two days.

While there are shortcomings in the extent of access to a functional water supply across all municipalities, the problem is concentrated in the DW category of municipalities which serve the mostly rural areas of the former homelands. It is evident that there has not been sufficient capital to build new infrastructure in these rural areas and the management of this infrastructure is poor, either because of a lack of operating finance or because of a lack of capacity, or both.

[1] Total households are lower than figure above as this question is only asked to households that state they receive water from a regional or local source.

Access to sanitation

Access to sanitation across the four sub-categories of municipalities is shown in the two graphs below[2].

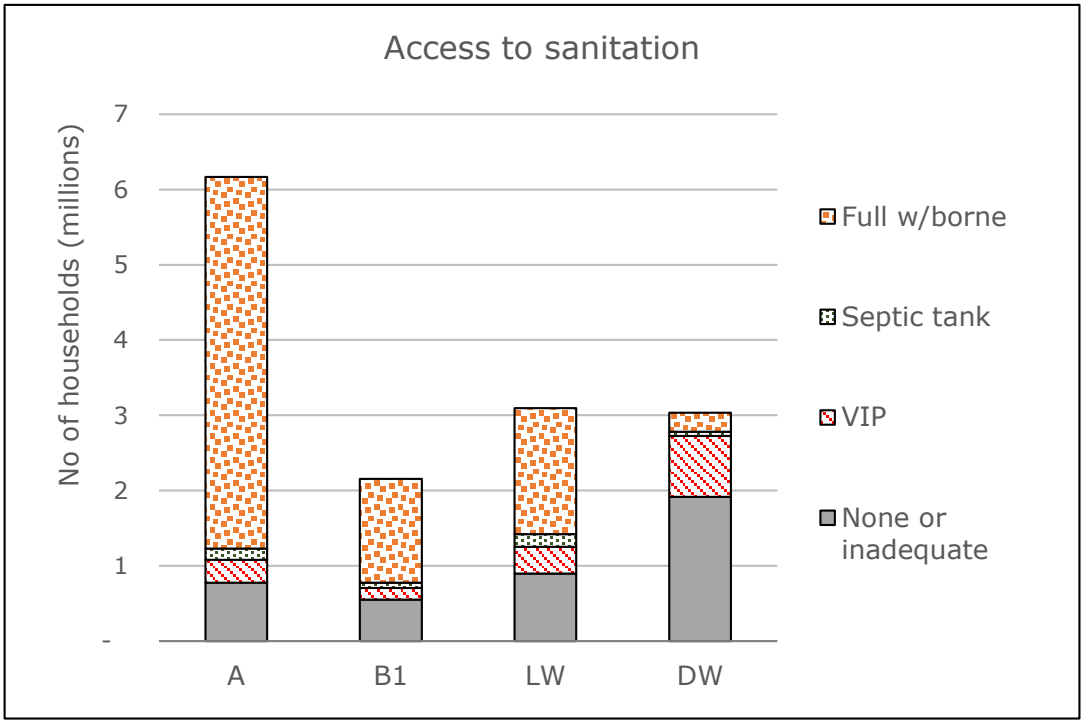


Figure 7: Access to sanitation service level by number of households

[2] Note that for this analysis the sanitation figures for the LW category were estimated as those for small and large towns (B2 and B3), while those for the DW category for mostly rural local municipalities (B4).

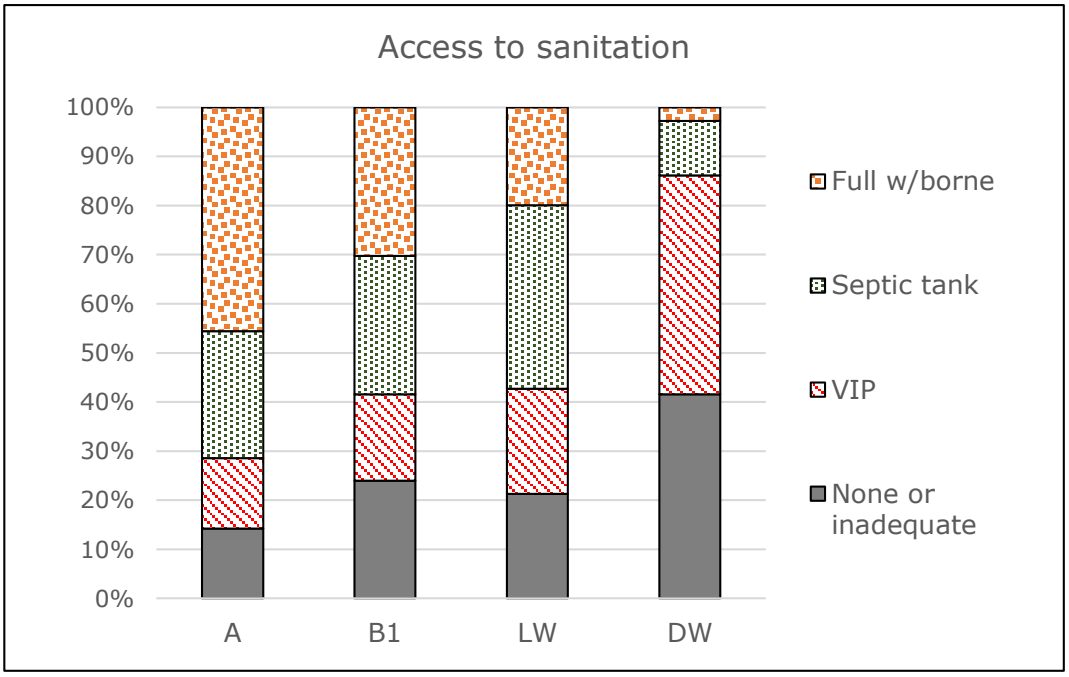


Figure 8: Percentage split of sanitation service levels by municipal category

The obvious observation from these graphs is that the situation with sanitation access is most concerning in DW municipalities which cover most of the former homelands.

Capital expenditure perspective

Based on the municipal expenditure records for all municipalities kept by National Treasury, it is possible to assess how municipalities are using their capital spending. In order to so, the figures for actual expenditure in 2013/14 for district municipalities are added to those of local municipalities[3]. The results for all expenditure is shown in the series of graphs below.

[3] Figures for districts are proportioned to local municipalities on a per household basis.

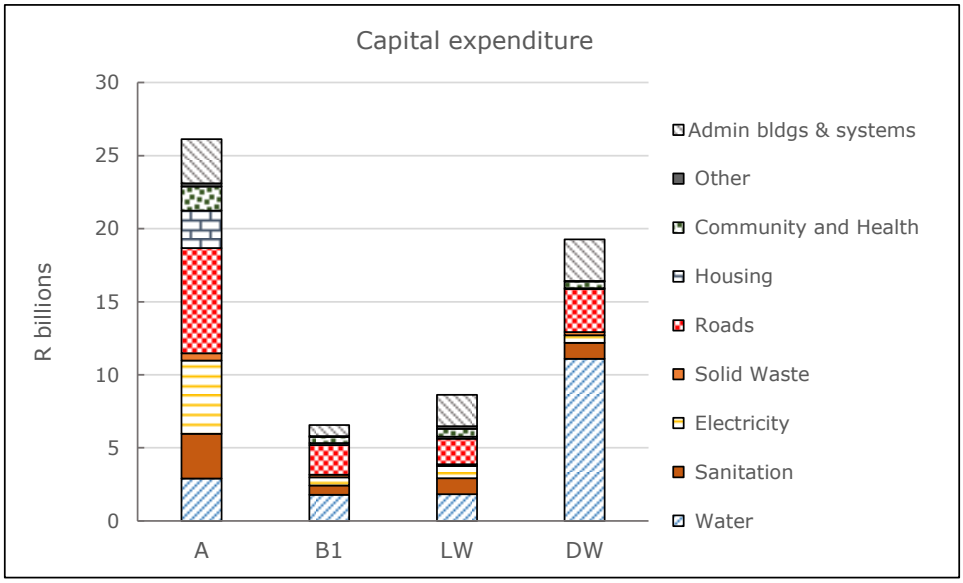


Figure 9: Capital expenditure per category (2013/14 actual)

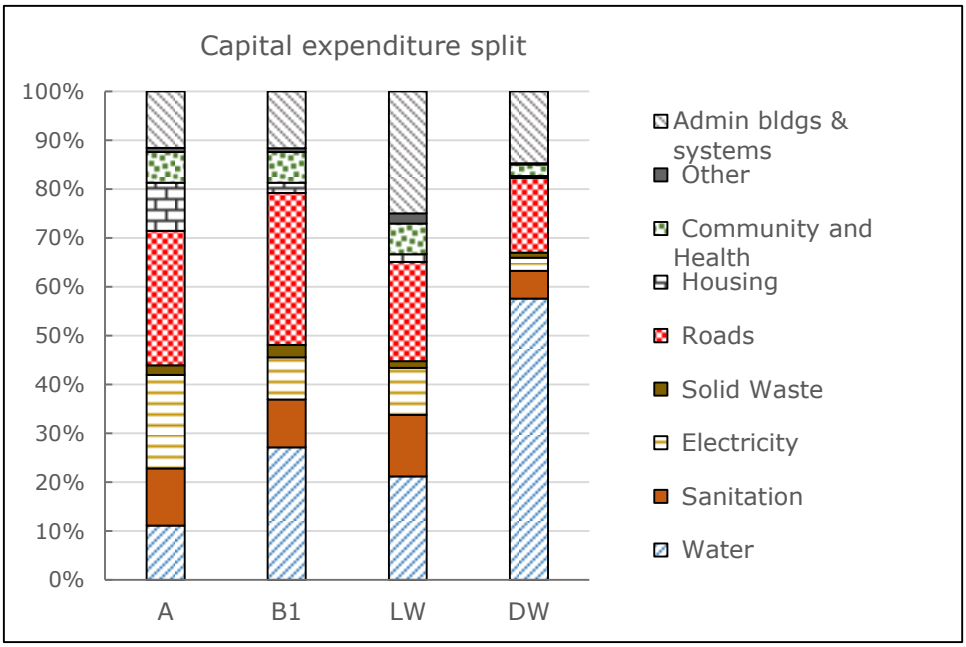


Figure 10: Capital expenditure split by municipal category

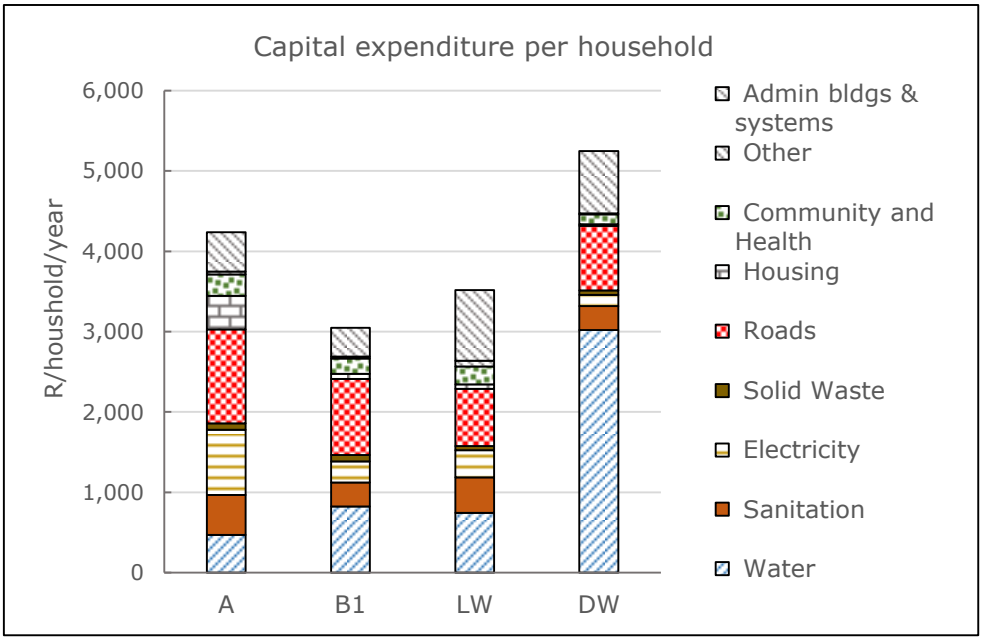


Figure 11: Capital expenditure per household

The key observations from this series of graphs can be summarised as follows:

- Water supply investment is dominant in the mostly rural areas of South Africa where district municipalities are the water service authorities. The high levels of investment per household is consistent with the fact that water backlogs are highest in these areas.
- In looking at the overall spending patterns of municipalities it is notable that DW municipalities (both the districts and their local partners) invest little in electricity infrastructure as Eskom is the dominant provider in these areas.
- While there is a similar level of investment per household in roads in all categories, the backlogs and condition of roads in the former homelands served by DW municipalities is by far the worst. It could be argued that investment here is biased towards water supply. In making this statement it is important to note that water is the responsibility of districts in these areas and roads are the responsibility of local municipalities.
- Expenditure on sanitation per household is relatively low in B1 and DW municipalities. It is uncertain why this is the case in B1s but in DW municipalities it is associated with the fact that most households are rural with the policy focused on providing on-site sanitation which has a lower cost per household than sewered sanitation systems. However, the fact that backlogs are so high in the rural areas within DM areas would suggest that higher levels of investment may be needed.

Capital finance perspective

Again, using actual figures for capital finance, taken from the NT database as actuals for the 2013/14 year, the pattern is illustrated in the graphs below.

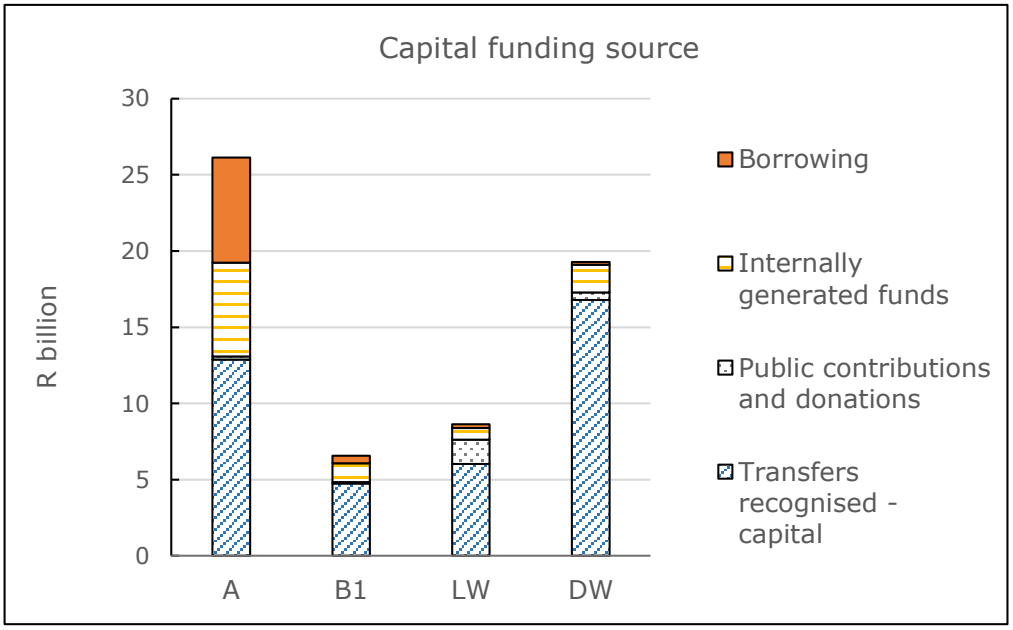


Figure 12: Capital finance profile by municipal category (2013/14 actual figures)

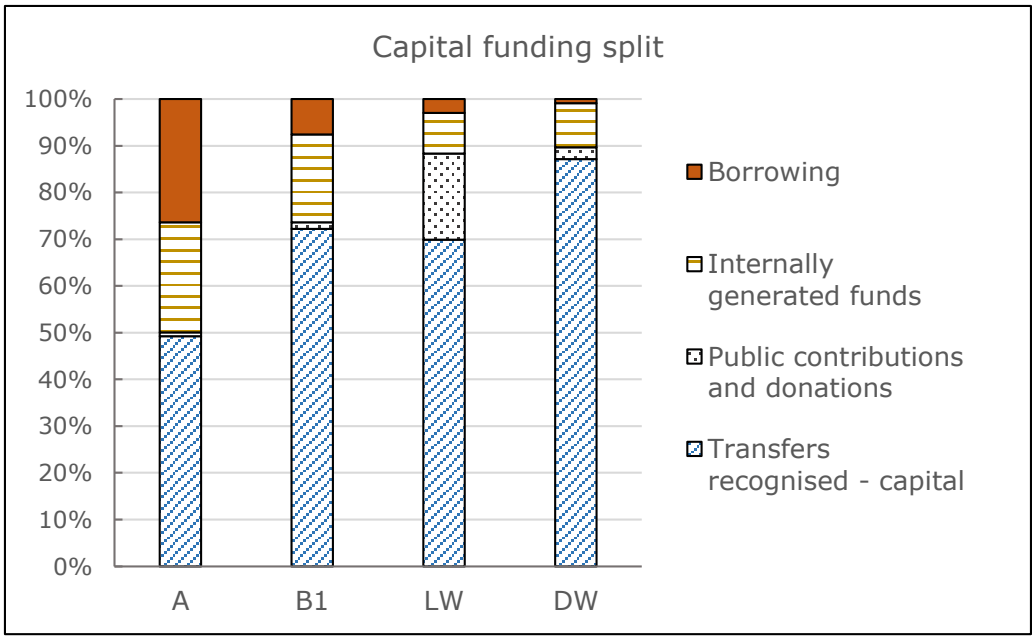


Figure 13: Capital finance splits by municipal category

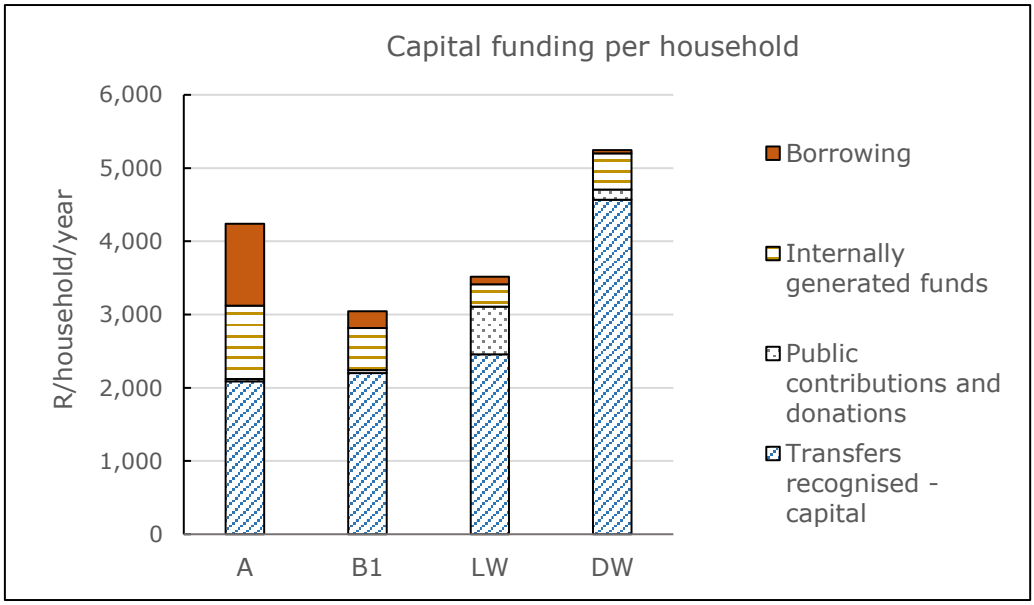


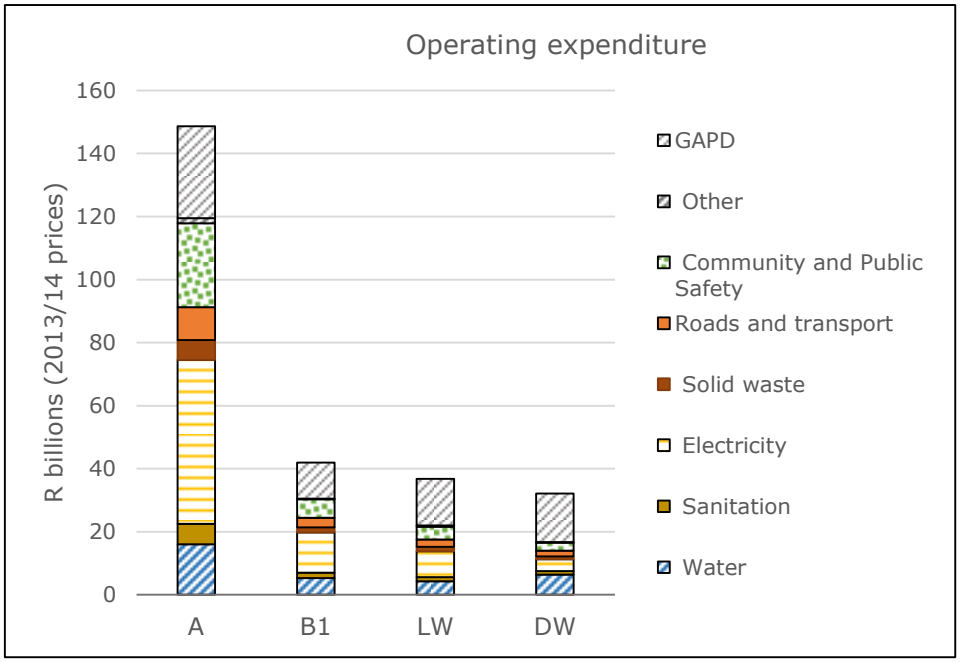
Figure 14: Capital finance per household by municipal category

It is clear from these figures, firstly, that only metros (category A) have reasonably diversified sources of capital finance. This needs to be qualified by the observation that there a low level of 'public contributions and donations' which include development charges which it could be expected should be higher in metros. (The high figure for these contributions and donations in LW municipalities cannot be explained). Secondly the high levels of capital transfers allocated to DW municipalities (district and local partners together) is notable. This is largely consistent with the high infrastructure backlogs in these municipalities.

Operating expenditure perspective

The operating expenditure per function, of each category of municipality, is presented in the series of figures below, again taken from the NT database as actual figures for 2013/14. As with capital figures, the expenditure by districts is added to the local municipality figures[4].

[4] As with capital figures the district expenditure is distributed in proportion to households in each local municipality.



Note: GAPD stands for governance, administration, planning and development facilitation.

Figure 15: Operating expenditure by category

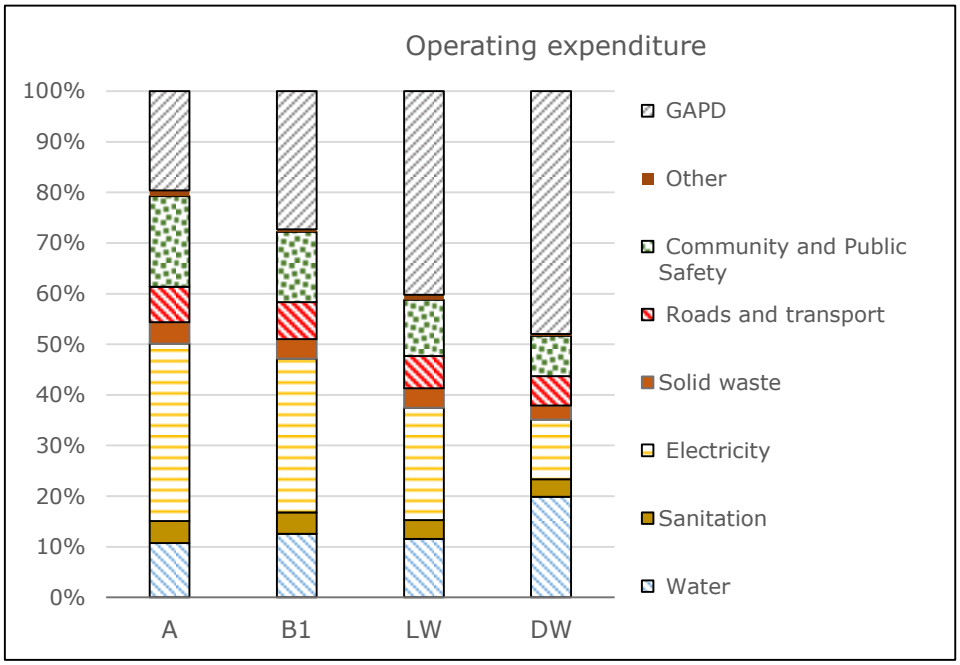


Figure 16: Split of operating expenditure by municipal category

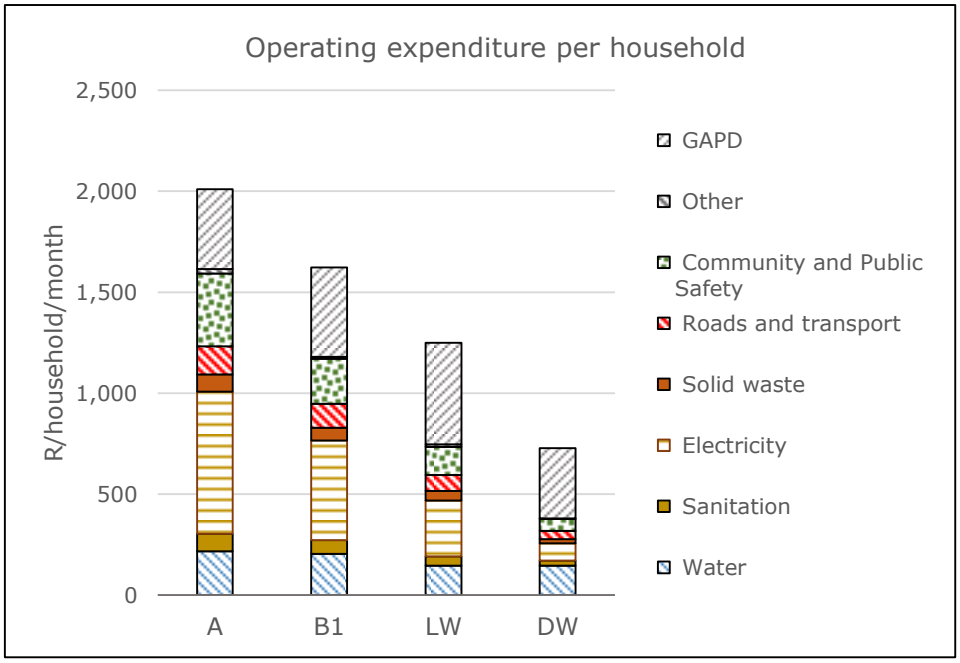


Figure 17: Operating expenditure per household

Metros have substantially higher operating budgets than other groups of municipalities. Other key observations relating to each service follow.

Electricity

The dominance of electricity expenditure as a proportion of operating expenditure in the case of metros and secondary cities is evident. But this does distort the figures somewhat as a large proportion of electricity expenditure is on bulk purchases which require no staffing or overheads from the municipality. In the case of DW municipalities the low figure for electricity is related to the fact that Eskom is usually the electricity service provider.

Roads and transport

Roads and transport is currently not a large expenditure item in any category of municipality. But the low figure in the DW category grouping (spending by local municipality in this case) is a concern as rural roads are extensive and in far the worst condition in these areas.

Community services and public safety

Metros allocate by the far the largest proportion of their budgets to this functional grouping which includes community facilities, sport and recreation facilities, clinics, libraries, parks and

fire and other emergency services. The low level of expenditure on these services in rural areas (DW category) has an obvious influence on the quality of life in these areas.

Water supply

Relative expenditure on the water supply service is shown in the diagram below.

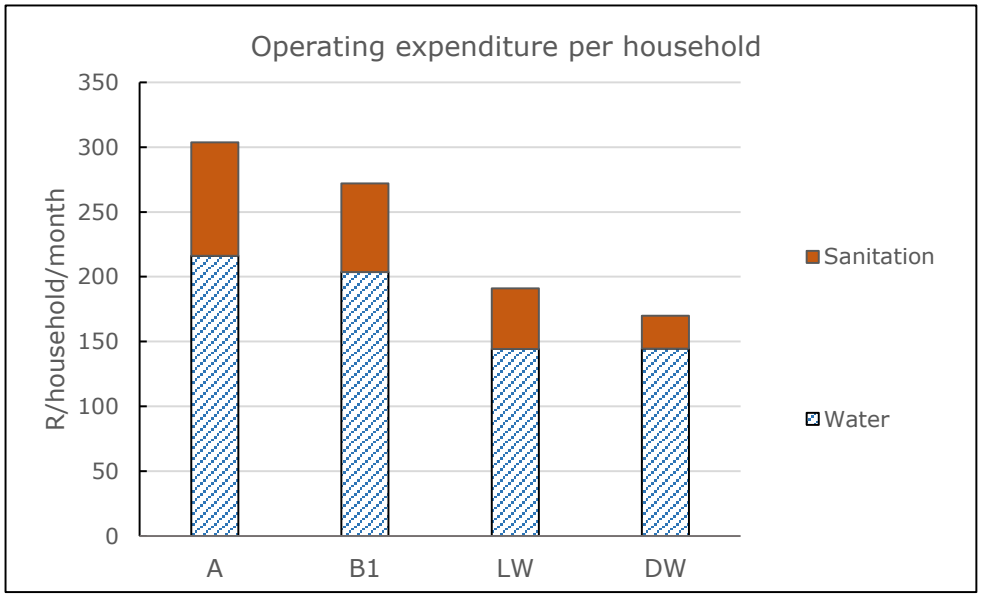


Figure 18: Relative expenditure on water and sanitation

It is important to note that these figures are normalised on a per household basis but water is not only supplied to households and not all households have access to the service or the same level of service. The following adjustments are made to get a realistic comparison between municipal categories:

- Estimated expenditure on non-residential services is deducted.
- Costs are adjusted to provide for only those households which have access to publicly provided water and sanitation infrastructure.
- An adjustment is made for service level to provide for the fact that public standpipe water services are less expensive to provide in comparison with yard and house connections as is on-site sanitation in comparison to sewered sanitation.

The results are shown below.

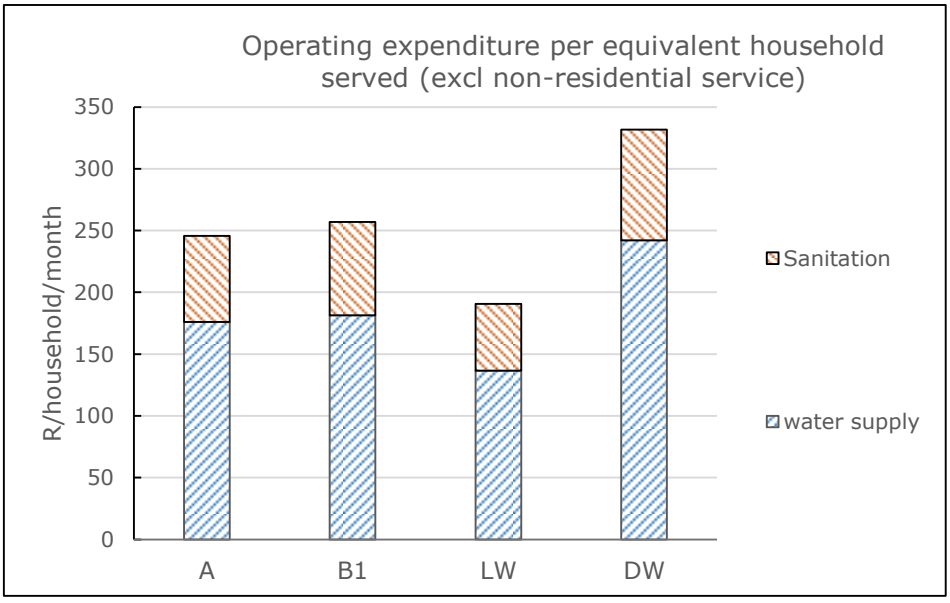


Figure 19: Comparison of water and sanitation operating costs after adjustment

This figure leads to an important observation: the actual operating expenditure on water supply and sanitation is higher in mostly rural areas served by district WSAs when compared to more urban municipalities.

Governance, administration, planning and development facilitation (GAPD)

It is obviously necessary and important for municipalities to have sound governance and administrative arrangements. They also need to plan properly and facilitate social and economic development within their areas of jurisdiction. The total of these expenditure items is grouped under the 'GAPD' type of expenditure.

In order to get a sound understanding of what this implies for water and sanitation services the GAPD for each municipal category is allocated proportionally to all services provided in the category. The value for both district and local municipalities is added. Using the unadjusted water and sanitation figures (Figure 18) as the basis, the results look as follows:

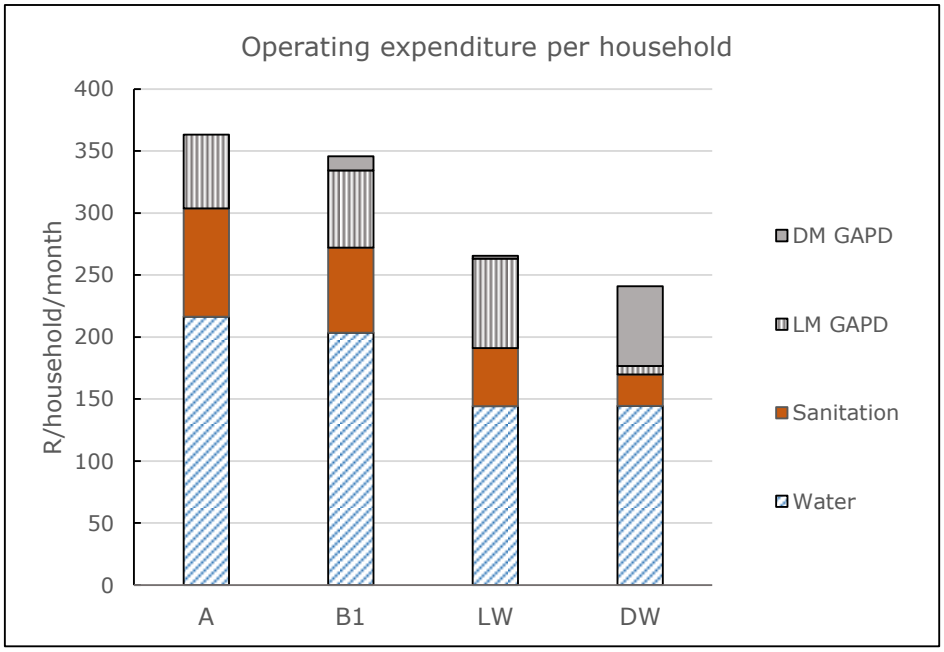


Figure 20: Relative expenditure on water, sanitation and related GAPD

The percentage of GAPD in relation to water and sanitation expenditure is shown below:

Municipal category	**A**	**B1**	**LW**	**DW**
% GAPD	20%	27%	39%	42%

It is evident that both small urban WSAs (LW) and large rural ones (DW) incur very high levels of GAPD expenditure. This is likely to be related to inefficiencies and, to a lesser extent, lack of economy of scale in the case of the LW category.

Operating revenue perspective

The local government fiscal framework enables municipalities to raise revenue from a variety of sources. The graphs below show the relative levels of revenue from each major source for each municipal category.

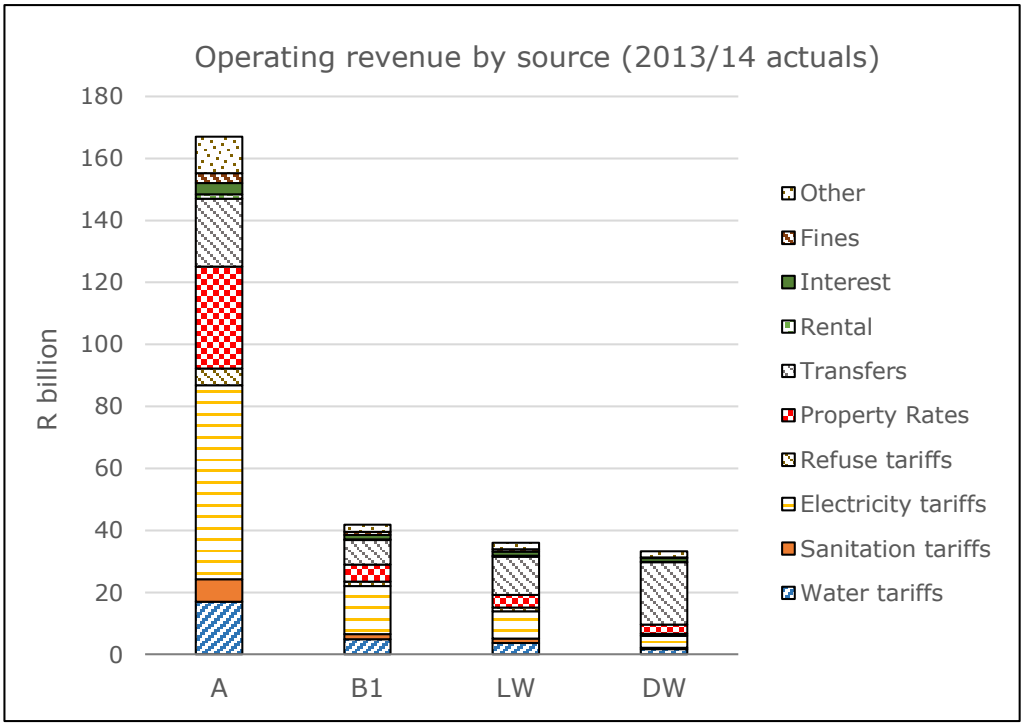


Figure 21: Total operating revenue by source (2013/14 actual)

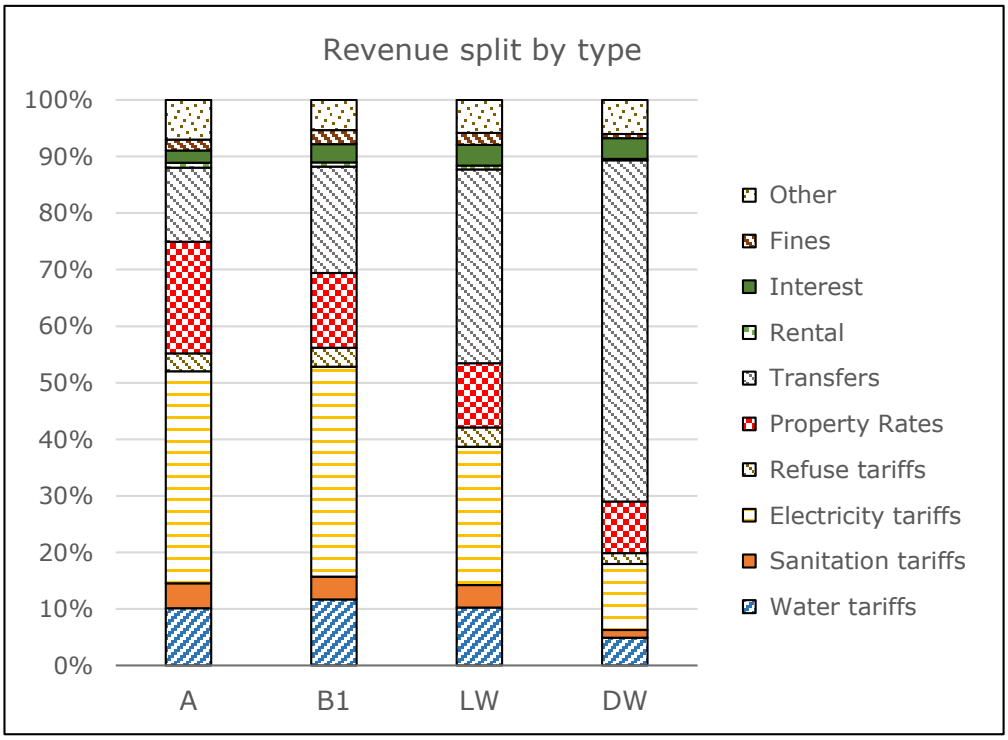


Figure 22: Split of revenue by type

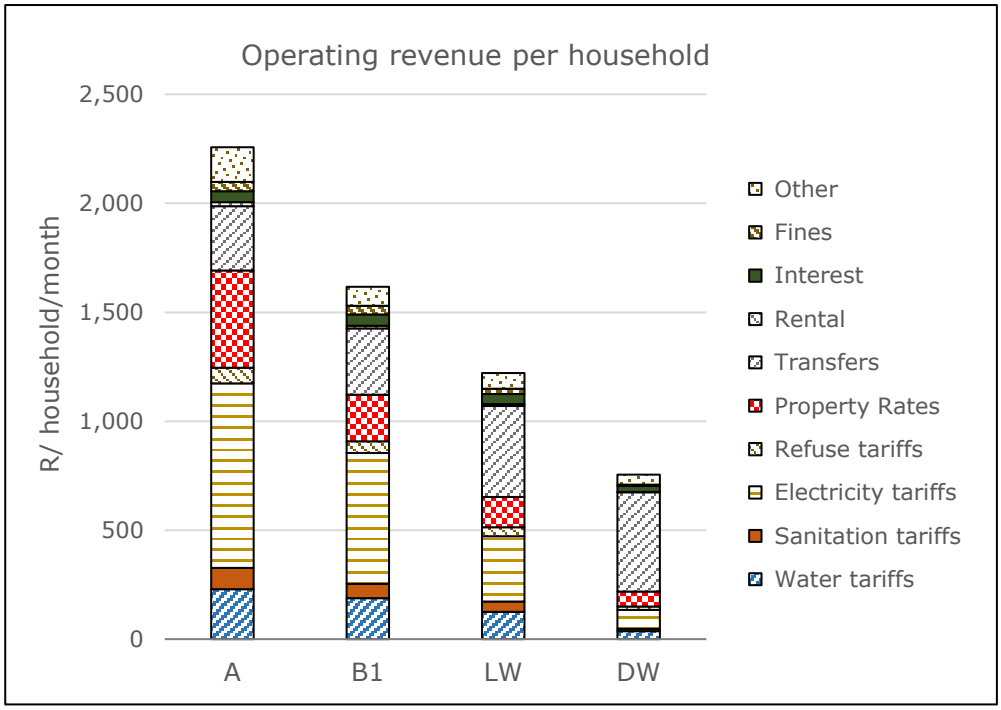


Figure 23: Operating revenue per household

Key observations from this data are summarised below:

- Metropolitan municipalities generally have strong revenue bases, with a large proportion of their revenue raised from electricity sales and a relatively low reliance on transfers in the form of the equitable share.
- At the other extreme, DW municipalities (district and local combined) have weak revenue bases and are heavily reliant on transfers which cover 60% of their expenditure. Only 7% of their revenue is from water and sanitation charges.
- Electricity supply in DW municipalities (supplied mostly by local municipalities) is relatively unimportant as most consumers are supplied by Eskom.
- In DW municipalities a large proportion of land is held under communal tenure and is not, therefore, rateable for property tax. Hence the low levels of revenue from this source.

The reasons for low levels of revenue per household in mostly rural municipalities can be divided between the low levels of affordability and the lack of fiscal effort to raise revenue through applying sound metering, billing and credit control arrangements. In order to adjust for the affordability factor, it is useful to look at how much revenue is raised per higher income household. This is a reflection not only of non-poor households but also of non-residential

business activity which also increases the revenue potential in a municipality. The diagram below provides an indication of the revenue received per number of high-income households.

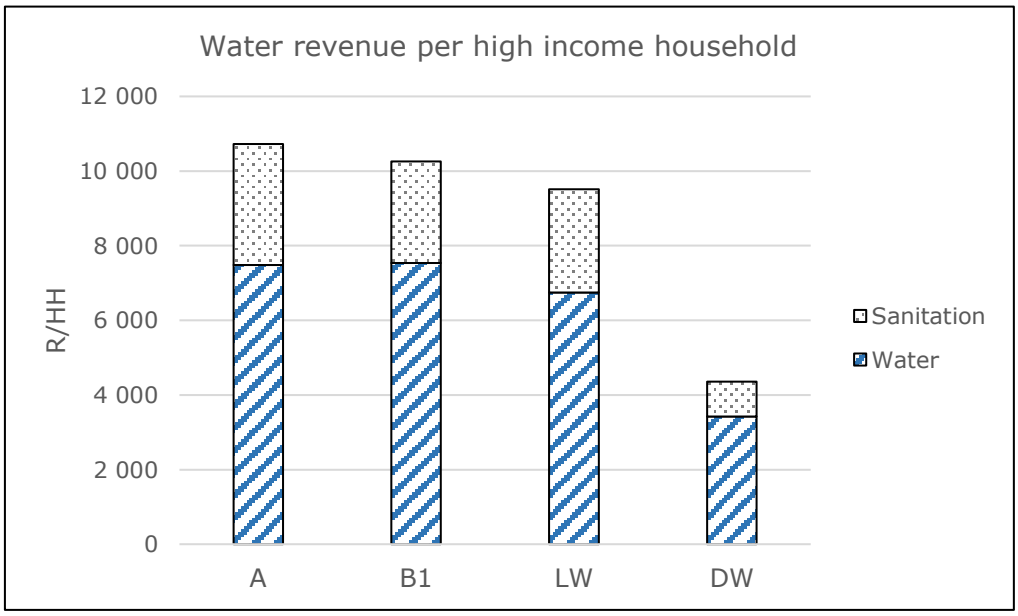


Figure 24: Water services revenue per higher income household[5]

It is clear that DW municipalities are generating significantly lower income from high-income households, while other categories of municipalities appear to be able to generate similar levels of revenue in terms of this indicator. This result raises the question as to whether, in DW municipalities, the district WSAs, working with their local municipality (LM) partners in some cases, are applying sufficient fiscal effort.

Another view of relative performance in raising revenue can be taken by looking at water services revenue for each litre of revenue water. This is essentially highlighting the ability of the municipality to generate income from a litre of water sold, with the results shown in the figure below.

[5] Households that have a monthly income of more than R6 400 per month were considered to be high-income households

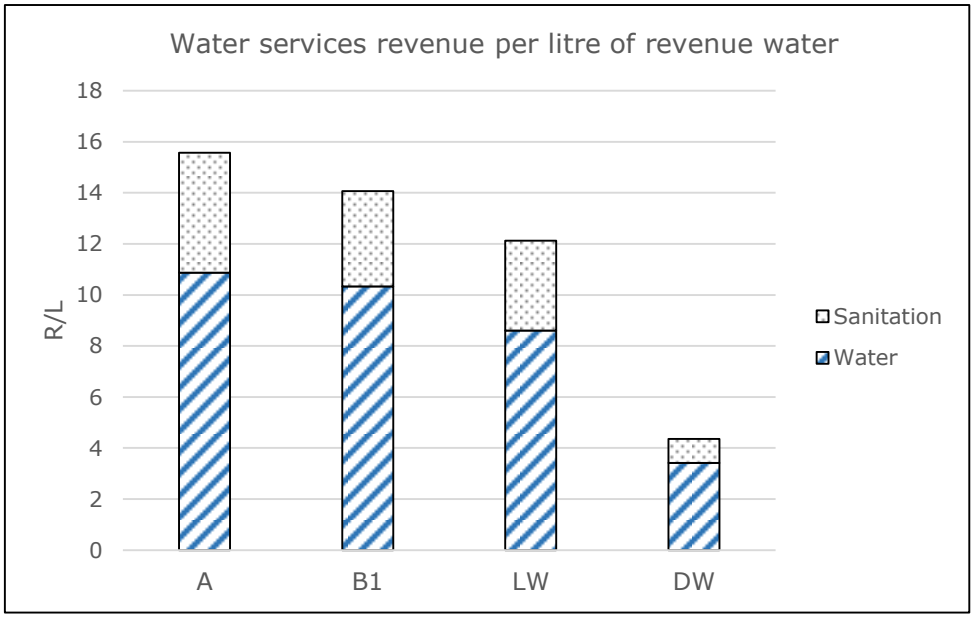


Figure 25: Water services revenue per litre of revenue water

Metropolitan and B1 municipalities are able to generate water income of R10 for every litre of water sold while DW municipalities are only able to generate R3.40 per litre of revenue water. This is a further indication of the inability of DW municipalities to generate operating income from water tariffs.

Conclusion

Municipalities have a number of different revenue sources to finance their operating expenditure. However, it is clear that water services charges comprise a relatively small portion of their overall funding mix. More urban municipalities are able to generate a fair portion of revenue from property rates and service charges. In contrast, DW municipalities serving mostly rural areas are over-reliant on equitable share transfers from the national fiscus.

It is often argued that A and B1 municipalities have stronger local economies and are thus able to access sufficient revenue from households and enterprises that are able to pay for services. However, the analysis has revealed there is potential for DW municipalities to raise additional funds from higher income households and enterprises. It can be argued that there is a lack of fiscal effort on the part of these municipalities.

Municipalities have to allocate operational revenue to a number of different functions. Given that the equitable share is an unconditional allocation it is possible that this could be prioritised to other activities rather than water and sanitation. The allocation to governance,

administration, planning and development (GAPD) facilitation is discussed later in this document.

2.4 Analysis of existing transfers

Summary of transfers

Transfers which may be used for water supply and sanitation are summarised in the table below.

Table 3: Transfers made to municipalities which can be used for water services (2016/17 allocations)

	Amount (Rbn)	Description	Application to water services	Benefiting municipality	Type
Transfers covering general expenditure					
Equitable share formula	52.6	Share of national total revenue	Used to cover WS operating costs for poor	All	Un-conditional, formula-based
RSC Levies Replacement		Residual from when districts raised own levy	Not strictly for WS but may be used	Districts	Un-conditional, formula-based
Fuel levy sharing		Share of national fuel levy	Not strictly for WS but may be used	Metros	Un-conditional, based on fuel sales
Infrastructure grants					
Housing subsidies		Provincial grant allocated to projects and specific beneficiary households	Housing subsidies can be used for internal WS infrastructure	Metros and locals	Allocated to provinces by formula; province decides on projects
Municipal Infrastructure Grant	14.9	Primary infrastructure grant but excludes electricity	Covers WS other than for LMs in DW category	Non-metros	Formula-based, conditional
Urban Settlements	10.8	Infrastructure, land and social services.	Covers WS	Metros	Formula-based, conditional

	Amount (Rbn)	Description	Application to water services	Benefiting municipality	Type
Development Grant		Emphasis on informal settlements			
Regional bulk infrastructure grant	5.3	For bulk water and sanitation infrastructure, part to municipalities, part 'in kind'	WS only	Districts and locals (in kind)	DWS decision
Water services infrastructure grant	3.2	For water services to 27 priority districts	WS only	Specific municipalities (21 DW districts and local municipalities in 6 districts)	Formula-based, conditional
Bucket eradication grant	0.4	Used to replace buckets with higher service sanitation (phasing out)		Specific municipalities (mainly LW)	DWS decision
Capacity-building grants		Various small transfers	Minimal use for WS capacity	All	Various

The way capital transfers related to water services are distributed is shown in

Table 4 with the subdivision between LW1 and LW2 municipalities following the grouping in Table 2.

Table 4: Capital grants allocated to specific municipal categories

	Description of category related to WSA	Grants allocated (2016) for water services
A	Metros	USDG
B1	Secondary cities	MIG and small amounts of WSIG and RBIG grants. The new MIG policy has less conditionality for these municipalities

LW1	Local municipalities which are WSAs and which are deemed to be 'disadvantaged' (within six of the 27 'disadvantaged' districts which are not WSAs)	MIG, WSIG and RBIG
LW2	Local municipalities which are WSAs which are not deemed to be disadvantaged	MIG and RBIG
DW	District municipalities which are WSAs	MIG, WSIG and RBIG

MIG: Municipal Infrastructure grant; WSIG: Water services infrastructure grant; RBIG: Regional bulk infrastructure grant; USDG: Urban settlements development grant

Capital grants

Given that capital grants constitute a large portion of capital funding sources, it is useful to unpack the grants that are available for each category. A breakdown of the allocation of water and sanitation capital grants to each category of municipalities is presented below. Municipal infrastructure grant (MIG) and urban settlements development grant (USDG) funding can be prioritised for the provision of water services at the discretion of municipalities whilst the regional bulk infrastructure grants (RBIG), the municipal water infrastructure grant (MWIG) and the bucket eradication grants are all used for the sole purpose of developing water and sanitation infrastructure. As MIG and USDG are used for a range of infrastructure, it is useful to separate out what proportion is used for water services. This is done, based on figures from research and evaluation reports, as follows:

Table 5: Split of MIG and USDG allocation to water services

R millions	**To water services**	**To other services**	**MIG & USDG total**	**% to WS**
Metros	2 168	8 672	10 839	20%[6]
Secondary cities	1 232	1 137	2 369	52%[7]
LM WSAs (LW)	962	2 600	3 561	27%
DM WSAs (DW)	5 571	3 413	8 984	62%[8]

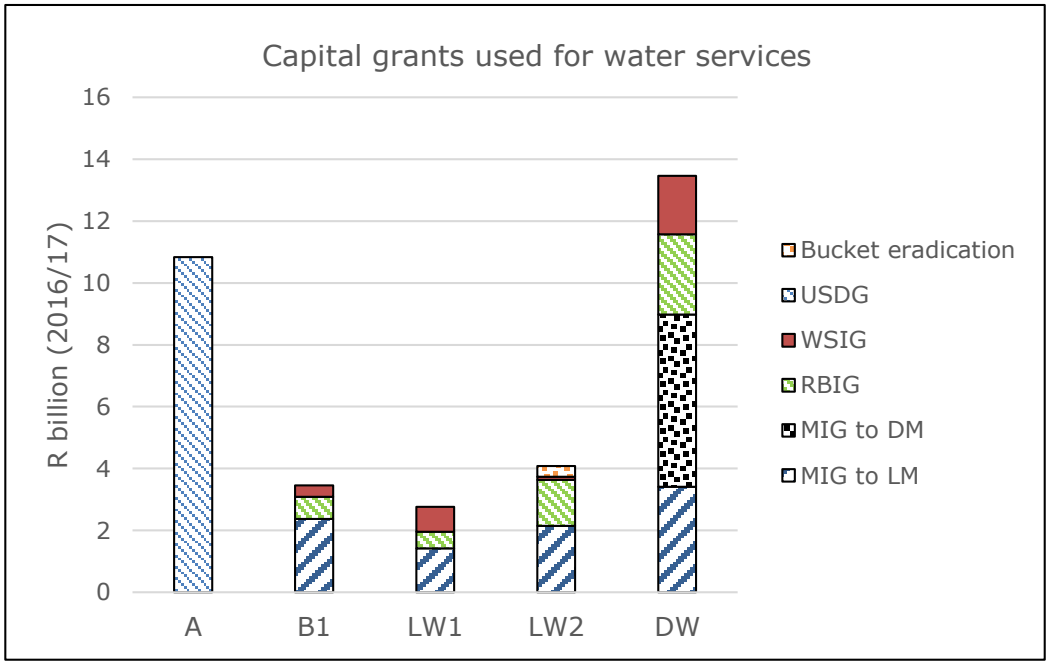
[6] DPME & DoH, 2015

[7] DCoG, 2015

[8] Split based on fact that all DM allocations are for WS.

It is notable that in the case of USDG allocations to metros and MIG allocations to B1 and LM category municipalities, the decision on how to allocate the money to specific types of infrastructure is made by the municipality. In the case of DW category municipalities, the allocation to water services is made by a formula which splits the MIG for water services to districts.

Using the above split to get grants used for water services only gives the result shown in the following two figures:



Source: Division of Revenue Act (DoRA). (RSA, 2016)

Figure 26: Capital grants applied to water services

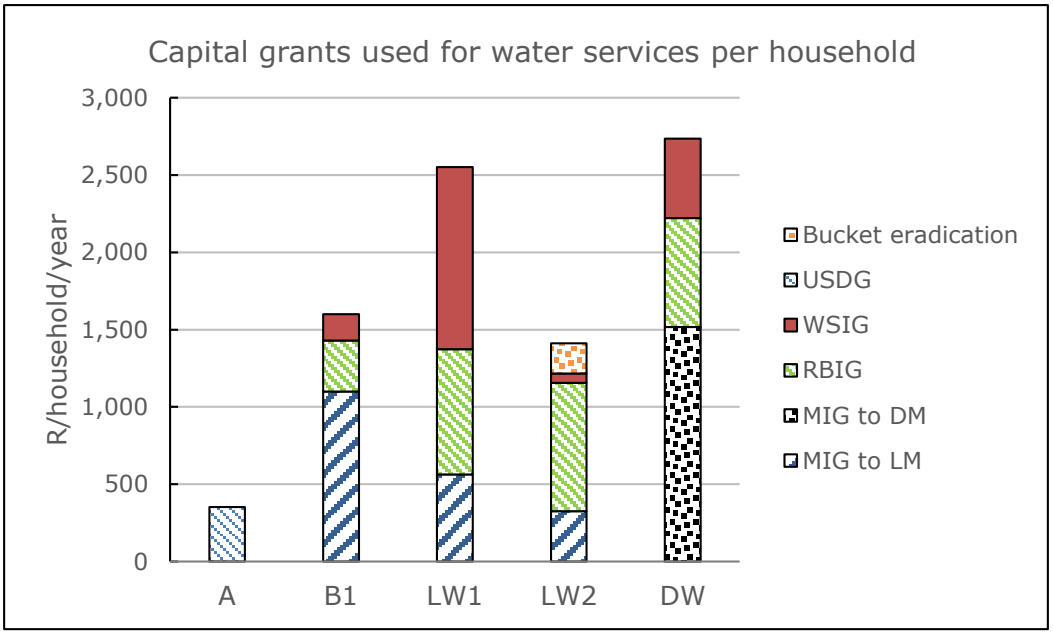


Figure 27: Capital grants used for water services, per household

The figure above highlights that DWs receive the highest quantum of water and sanitation capital grants. This is largely related to the fact that the formulas which drive grant allocations are oriented towards removing backlogs. Therefore, municipalities with high proportions of households which do not have access to infrastructure get greater allocations. Further, the MWIG and RBIG grants are set up to favour small municipalities and mostly rural DW category municipalities. However, capital grants are not only used for the development of new infrastructure but the also the renewal of existing infrastructure. Metropolitan and B1 municipalities have relatively high values of existing water and sanitation assets and would no doubt benefit from funding to renew aging infrastructure.

In considering the way the grants are allocated to LW1 (within priority districts) and LW2, Figure 27 shows the extent to which municipalities in priority districts benefit. But in comparing these figures it is important to note that LW1 municipalities have poorer populations compared to LW2 municipalities (15% high-income households vs 20% high-income) as shown in Table 2. But they are not as poor as the populations served by DW municipalities (12% high-income households).

An important observation from this graph is that, on average, where municipalities get greater amounts of water services-specific funding – WSIG and RBIG – they allocate less MIG to water services. This raises the question as to whether having sector-specific grants in these situations actually improves targeting of the grants to water services.

Equitable share

The local government equitable share (LGES) of national revenue is a constitutionally protected allocation to municipalities. The transfer is unconditional, although the formula for allocating the amount of funds to individual municipalities is based on an assumption of what it takes to fund the cost of basic services to poor households. Further, the political objective of the LGES can be, it is argued, to ensure that services are provided to poor households which cannot afford to pay for these services themselves.

The graph below shows the amounts allocated to each category of municipality, per household, in the category (2016/17 year).

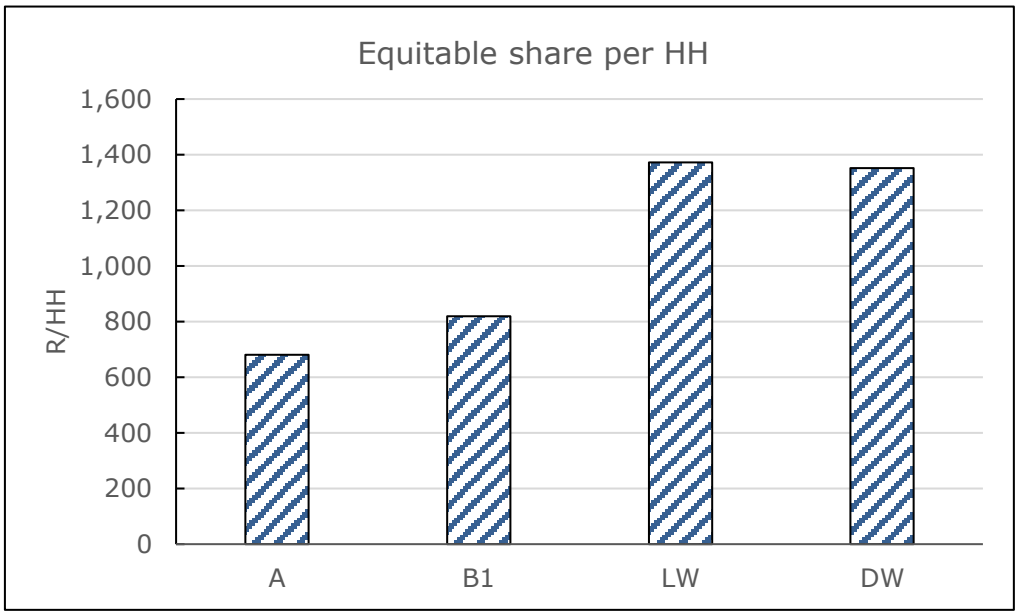


Figure 28: Equitable share allocations to municipal categories (per household)

As the LGES is allocated based primarily on the number of poor households within a municipality, plotted distribution in relation to poor households will show greater allocation to DW municipalities.

Conclusion

Further analysis in Section 2.5 shows that there is a funding gap with respect to capital. This applies to water services as well as other infrastructure. One way of filling this gap is to allocate additional capital grants. However, in the current economic climate, NT has argued that this is not possible and, in any event, there is a concern over the extent to which capital grants are

being spent effectively. Findings from previous phases of this study have revealed that there are other factors that could influence the capital funding shortfall.

The evidence that municipalities allocate less MIG to water services if they are getting WSIG and RBIG grants is a significant consideration when considering the merit of sector-specific grants. Some further concerns about the nature of the capital grants are discussed below.

With regard to the equitable share, there is little that can be done to make it more conditional but the lack of conditionality does mean that these funds are often not spent effectively, as discussed later in this report.

2.5 Municipal Infrastructure Investment Framework analysis: the funding gap

Background to the MIIF

The Municipal Infrastructure Investment Framework (MIIF) is an initiative of national government and the Development Bank of Southern Africa (DBSA) to assess the capital requirements for providing adequate municipal infrastructure, capital finance options to cover this expenditure and the implications of a proposed infrastructure programme on the viability of municipalities. Viability is assessed by estimating operating expenditure requirements and relating these to the operating revenue available to municipalities.

The MIIF was first undertaken prior to 1994 when the World Bank was supporting South Africa in preparing for a new democratic government. Since then it has been through six further iterations, with the last one – MIIF Round 7 – published by DBSA in 2010 (DBSA and CoGTA, 2010). Unfortunately, DBSA no longer supports the MIIF although NT has commissioned ongoing analysis which has much in common with the MIIF.

Since the fourth round of MIIF, the national analysis has been structured to show the difference between five categories of municipalities: metros (A), secondary cities (B1), large towns (B2), small towns (B3) and mostly rural areas (B4). In the case of all the local municipal categories (Bs) the analysis grouped the local municipality with its district partner in order to provide for an analysis of a full package of municipal services delivered to households and enterprises. In Round 7, a separate analysis was undertaken to assess water services investment requirements and associated viability of WSAs. To do this municipalities were grouped in the water service authority categories shown in Table 1.

Capital account analysis

The financial modelling undertaken for MIIF Round 7 calculates the capital expenditure required to provide households and enterprises with a given service level which meets national standards, i.e. piped water within 200 metres of the dwelling and at least a VIP toilet, with higher service levels provided in urban areas and for those which can afford it. The results are shown below.

Table 6: Modelled capital expenditure requirements for water services by municipal category, 2009

R millions	A	B1	LW	DW	Total
Water supply					
New internal infrastructure	419	183	173	333	1 108
New bulk and connector infra	3 596	1 065	533	827	6 020
Infrastructure renewal	2 982	1 130	1 230	1 688	7 030
Sanitation					
New internal infrastructure	875	416	585	845	2 721
New bulk and connector infra	2 090	479	182	110	2 862
Infrastructure renewal	1 689	678	946	1 486	4 799
Water and sanitation combined					
New internal infrastructure	1 294	599	758	1 178	3 829
New bulk and connector infra	5 686	1 544	715	937	8 882
Infrastructure renewal	4 671	1 808	2 176	3 174	11 829
Total	**11 651**	**3 951**	**3 649**	**5 289**	**24 540**

There are some important conclusions from this analysis. Firstly, the high proportion of funding required for infrastructure renewal needs to be emphasised. Secondly, the expenditure for infrastructure to metros is dominant as they are experiencing high growth and have a large asset base which requires ongoing renewal.

These modelled figures can be compared to the actual budgets for municipalities to which the estimated expenditure for service providers – primarily water boards – needs to be added. The result is shown in the table below.

Table 7: Comparison of actual capital expenditure in relation to modelled values – 2009

	A	B1	LW	DW	Total
Modelled figure (Table 6)	11 651	3 951	3 649	5 289	24 540
Actual LG budgets 2009/10	4 045	1,859	2 184	3,233	11 321
Assumed water board capex	1 935	584	138	205	2 862
Total actual spending	**5 980**	**2 443**	**2 322**	**3 438**	**14 183**
% actual over modelled capex	51%	62%	64%	65%	58%

It is clear that municipalities were spending well below what they were required to meet the target of providing services to all citizens and enterprises and to renew existing infrastructure. While there may be some limitations on capacity to spend capital, the main reason for under-spending relates to the lack of capital as shown below.

Looking at the options for financing this expenditure, the MIIF Round 7 analysis showed the following:

Table 8: Modelled capital finance availability for water services by municipal category – 2009

R millions	A	B1	LW	DW	Total	% split
MIG	1 271	963	1 344	2 636	6 214	25%
RBIG		183	183	244	611	2%
Housing subsidies[9]	758	217	172	101	1 248	5%
Development charges	1 692	396	37	49	2 174	9%
Service provider funding	2 888	872	205	307	4 272	17%

[9] Housing subsidies cover internal infrastructure costs for poor households, a portion of which goes to water and sanitation.

R millions	A	B1	LW	DW	Total	% split
Internal funds	707	475	345	376	1 903	8%
Borrowing	2 601	411	309	91	3 412	14%
Funding gap	1 734	434	1 054	1 485	4 707	19%
Total	**11 651**	**3 951**	**3 649**	**5 289**	**24 540**	100%
Funding gap as % of total	15%	11%	29%	28%	19%	

At the time MIIF Round 7 was undertaken, MIG was the dominant capital subsidy available, with RBIG applied to fund particular projects across the country[10]. The USDG for metros was not yet instituted.

This capital finance analysis is somewhat outdated and the levels of transfers as a proportion of total capital finance have been increasing over the period 2009 to 2013. However, from the point of view of principles impacting on capital finance, including transfers, the findings from this MIIF analysis remain valid and can be summarised as follows:

a) In the case of ***capital transfers*** these amounted to 32% of the requirement for capital finance to cover the modelled capital expenditure required. In proportion to the actual budgeted expenditure, the transfers amounted to 57%.
b) The modelled figure for ***development charges*** allocated to water and sanitation is 9% of total expenditure. In reality, municipalities do not raise this level of funding as they do not have the systems and capacity to apply development charges effectively.
c) ***Service provider funding*** is provided by water boards and, in a few cases, by private service providers. These organisations raise their own capital which is used to finance assets which become part of municipal water and sanitation systems. There may be opportunities for additional funding to be raised from this source.
d) The term ***'internal funding' raised by municipalities*** covers the use of capital reserves. The model provides for a certain level of such funding and an assumption is made as to how much can be assigned to financing water and sanitation investments.

[10] Distribution or RBIG across categories is assumed.

There have been shifts in this regard since 2009 as at that time district municipalities had substantial reserves which have subsequently been used.

e) The modelling makes rough assumptions about the ***potential of municipalities to borrow***. There is the potential for this to be increased, assuming the credit rating of municipalities can be improved.

f) The net result is that there was a modelled funding gap of R4.7 billion for water and sanitation infrastructure, assuming a relatively high level of performance by municipalities and service providers in raising their own capital at the time the MIIF Round 7 analysis was undertaken. The actual gap was far larger at R10.3 billion. It can be argued that R4.7 billion is a 'structural' gap which municipalities and their service providers are unable to close, and the balance, R5.6 billion, is caused by under-performance of municipalities – and their service providers to a lesser extent – in raising capital.

Operating account analysis

While it has not been possible to redo the full analysis used for the MIIF Round 7, the financial models were checked and some corrections were made[11]. The results are summarised below with the figures normalised on a per household basis (expenditure or revenue for the municipal category divided by total households in the category).

Table 9: Modelled operating account results by WSA sub-category (figures per household)

R/household/month	A	B1	LW	DW
Water supply				
Expenditure	111	75	58	53
Revenue	123	74	60	52
Equitable share	16	17	15	21
Tariffs	107	57	45	31
Balance	12	-1	2	-1
% surplus	**10%**	**-1%**	**3%**	**-2%**
Sanitation				

[11] The models were over-estimating depreciation and, at the time they were done, were assuming that households which had public standpipe water supplies in rural informal settlements would make some payment. This has been amended so that these households get free water.

R/household/month	A	B1	LW	DW
Expenditure	42	37	24	14
Revenue	53	42	25	14
Equitable share	16	13	5	5
Tariffs	37	29	19	9
Balance	11	5	1	0
% surplus	**21%**	**12%**	**4%**	**0%**
Expenditure per hh excluding depreciation and finance charges				
Water	88	62	48	45
Sanitation	26	28	16	10
Percentage of water and wastewater which is non-residential				
% non-res water	20%	16%	11%	5%
% non-res sanitation	30%	26%	21%	7%
Expenditure per residential hh per month (excl depreciation and finance charges)				
Water	74	54	43	43
Sanitation	20	22	13	10

The most important conclusion from the MIIF analysis is that, theoretically at least, and with the subsidy environment which existed at the time, water and sanitation services provision in all municipal categories can be made viable. The exception may exist for sanitation in LW and DW municipalities but possibly this is due to the low level of equitable share allocated to this service in the modelling. Note that the analysis assumes that all consumers pay their bills.

To check for what was happening in reality, the modelled expenditure figures can be checked against the figures from municipal budgets for the model year (2009/10). As indicated in the table below, the modelled results for expenditure are close to those from actual budgets (within 10%).

	A	B1	LW	DW
Model opex/budget opex	90%	92%	102%	101%
Budget tariff revenue per unit of expenditure	102%	101%	114%	17%

Looking at revenue, on the other hand, the budgeted figures show that municipalities were actually able to cover their expenditure with tariffs for A, B1 and LW municipalities. However, only 17% of expenditure on water and sanitation could be covered by tariffs for DW

municipalities. This implies a high reliance on the equitable share to cover the gap between expenditure and tariff revenue[12].

The important point needs to be made here that this is dependent on the actual collection of revenue. In the case of water services managed by districts, collection rates are very low and, in practice, this means that water services are quite dysfunctional as there is too little revenue to cover O&M expenditure.

Looking forward, the models show that the water accounts continue to remain in surplus for all sub-categories (again, assuming that a high level of fiscal effort is applied to collect the revenue due to the municipality). In the case of sanitation, the metros and B1s remain in surplus while the LW and DW municipalities remain in deficit. Again, this depends on many things, the most important of which is the continuing increase in equitable share allocations and the effectiveness with which revenue is collected.

Developments subsequent to MIIF Round 7

Things have changed considerably in the municipal finance environment since MIIF Round 7 was undertaken. As an illustration of how operating costs and revenue raised by municipalities have escalated over the four years between 2009/10, which was the base year for MIIF, and 2013/14, the figures from municipal accounts from the NT database are compared below.

[12] Further modelling could be warranted to test different equitable share options in the case of sanitation.

Table 10: Comparison of municipal operating account information between 2009/10 and 2013/14
(nominal figures – not inflation adjusted)

R/household/month	All	A	B1	LW	DW
Expenditure per household – water supply					
2009/10		152	110	76	70
2013/14		216	188	141	154
Annual increase		9.2%	14.3%	16.9%	21.7%
Expenditure per household – sanitation					
2009/10		61	37	24	12
2013/14		87	68	46	26
Annual increase		9.2%	16.3%	17.2%	20.3%
Annual increase in overall expenditure					
All municipal expenditure	16.3%	15.4%	14.3%	21.2%	38.4%
Revenue per household – water supply					
2009/10		186	101	80	10
2013/14		205	161	104	33
Annual increase		2.4%	12.3%	6.8%	35.9%
Revenue per household – sanitation					
2009/10		32	46	31	4
2013/14		89	58	43	9
Annual increase		29.0%	6.1%	8.2%	25.6%

Overall municipal spending has increased at 16.3% per annum which, in real terms, is about 10%. This may have been caused by expanding service provision as populations have grown and enterprises expanded, and there are also increasing costs in inputs per unit of production. But there is also the concern of growing levels of inefficiency.

Looking at expenditure on water, this has been growing relatively modestly compared to municipal budgets as a whole, with the exception of DW municipalities. On the other hand, the

level of revenue raised by DW municipalities has been increasing substantially, while it is the opposite in metros and LW municipalities where levels of revenue have not kept pace with expenditure.

Regarding sanitation, expenditure has increased substantially for DW municipalities but so has revenue. B1 and LW municipalities appear to be falling behind with regard to keeping revenue in line with expenditure, while metros are doing better and raising revenue faster than expenditure[13].

It has not been possible to re-run the MIIF analysis for this study and so it is important to assess how much the changes which have taken place since the MIIF Round 7 work was done in 2015 will influence the key conclusions from this round. Sticking to purely financial aspects, it is argued that the changes in the case of A, B1 and LW municipalities are not substantial, although flat economic growth since 2008/09 combined with input costs running at above inflation will put municipalities under greater financial stress. This has been ameliorated somewhat by increases in equitable share allocations at above the inflation rate.

In the case of the operating account of DW municipalities, the situation is likely to remain that these municipalities need to raise more revenue to balance their expenditure. Further it appears that they are not spending the funds that they have effectively and have very high levels of GAPD expenditure in relation to expenditure on services. This weakens the argument for them to get more equitable share funding. To their credit they do seem to be raising higher levels of revenue from tariffs which will move them in the right direction.

The situation with the capital account is also likely to remain the same as it was in 2010; there is not sufficient capital to provide for new infrastructure required and renew existing infrastructure properly. The gap remains.

2.6 A closer look at costs

Clearly, when designing a system of transfers, it is important to understand the costs which the transfer is intended to cover either wholly or partially. There are various levels at which one can do this: firstly, through looking at high-level aggregate costs, much as is done with

[13] It needs to be kept in mind that it is often difficult for municipalities to separate water supply and sanitation expenditure.

the MIIF, and, secondly, looking at costing on individual schemes. A review of actual costs from municipal budgets has been given earlier in this report and the focus in this section is on scheme costing.

Capital costs

Two approaches are used here:

- Cost a water and sanitation system based on a costing model developed by Palmer Development Group for DCoG in 2011.
- Cost a system based on data on individual elements held by DWS and accessible through their Water Services Development Plan web portal.

To do this, a scheme or group of schemes needs to be selected. As the capital costs are most uncertain in rural areas, it was decided to focus on districts with mostly rural conditions and contrast those districts with large-scale 'regional' water supply schemes with districts which have smaller, local schemes. Mopani and Vhembe Districts in Limpopo province were selected for the former and Alfred Nzo and OR Tambo districts in the Eastern Cape for the latter.

For the scale of infrastructure in these four districts, the data reported in the DWS database was used. This is a powerful planning tool as it has – or is intended to have – the size and location of all infrastructure elements. The database also includes asset values (capital replacement costs) for some of the infrastructure. This was used where possible and contrasted with costs calculated using a cost model developed by PDG. Mostly there was fair alignment and a standard set of unit costs was developed. This required quite a few assumptions, both because all the data was not present on the DWS database and also because assumptions needed to be made on the size of infrastructure in some cases. The most notable case was pipe sizes where the lengths are given but not the diameters. Nevertheless, this DWS data, supplemented with additional costing, has provided some very useful results which are shown below.

Table 11: Scale of infrastructure in four district municipalities

	Bore-holes[14]	Abstract works	WTW	Pump stns	Bulk pipelines	Reser-voirs	Retic-ulation
	No	No	Ml/d	Ml/d	km	cu.m	km
Alfred Nzo	1,336	88	152	305	963	28 279	2 317
Mopani	4 498	20	265	654	2 196	118 250	2 592
Vhembe	8 218	13	148	100	2 345	574 500	2 568
OR Tambo	3 037	69	151	302	928	95 218	1 940

Table 12: Results of asset value estimation per household served, for water supply schemes in four districts

R/household which has access to infra-structure	Bore-holes	Abs-tract works	WTW	Pump stns	Bulk pipe-lines	Reser-voirs	Retic-ulation	Total
Alfred Nzo	546	343	7 137	1 661	4 779	1 101	4 511	20 077
Mopani	733	31	4 945	1 422	8 204	1 478	2 012	18 826
Vhembe	1 453	22	3 561	236	9 498	4 836	2 162	21 767
OR Tambo	1 085	235	7 340	1 438	4 023	2 607	3 299	20 027

[14] Only 15% are assumed to be active and taken into the asset value calculation.

Table 13: Split of asset values for water supply schemes in four districts

	Bore-holes	Abstract works	WTW	Pump stns	Bulk pipe-lines	Reser-voirs	Retic-ulation
Alfred Nzo	3%	2%	36%	8%	24%	5%	22%
Mopani	4%	0%	26%	8%	44%	8%	11%
Vhembe	7%	0%	16%	1%	44%	22%	10%
OR Tambo	5%	1%	37%	7%	20%	13%	16%

The most important conclusion from this analysis emerges from looking at the last column in Table 12; it is evident that the asset values per household which have access to infrastructure is similar for all four districts. This is largely because the cost of bulk pipelines in Vhembe and Mopani is balanced by the higher cost of reticulation in Alfred Nzo and OR Tambo districts. While the data needs to be questioned in some cases (e.g. why is reservoir capacity so high in Vhembe, and are water treatment works costs in Alfred Nzo and OR Tambo not too high?), the results are intuitively sound; so-called regional schemes serving larger and denser settlements have a larger proportion of their costs in bulk pipelines while local schemes serving more scattered settlements (Alfred Nzo and OR Tambo) have more of their costs in reticulation.

It will be useful for further analysis of this nature to be undertaken but, for the purposes of this study, the importance of the data is that it shows **that the notion of a separate regional bulk infrastructure grant needs to be questioned**. What such a grant does is favour larger schemes and disadvantage communities which can be served with local schemes. The argument that these schemes have higher capital costs per household served is questionable.

Operating costs

In order to assess operating costs, two approaches are taken. Firstly, costs proposed by Gibson (2010 and 2011), who undertook activity-based costing on rural schemes, are assessed. Secondly, these costs are tested against the costs from the DW municipal category MIIF analysis.

Key results from Gibson's 2010 paper are summarised below.

Table 14: Operating cost comparison of two schemes in the Eastern Cape

Final row figures adjusted to 2009/10 prices	Chris Hani DM		Alfred Nzo DM	
	R '000s /yr	Cost per hh (R/hh/ month)	R '000s/yr	Cost per hh (R/hh/ month)
Technical staff	7 277	15.05	3 119	9.57
CBOs	4 019	8.31	1 594	4.89
Material, plant, etc	3 119	6.45	277	0.85
Travel	3 812	7.88	1 040	3.19
Service providers	1 940	4.01	208	0.64
Fuel	832	1.72	139	0.43
	20 998	43.44	6 376	19.57
Escalate to 2009/10[15]		50.67		24.65

The Alfred Nzo schemes served 27 000 households in 144 villages while the Chris Hani DM schemes served 40 000 households in 285 villages. The Alfred Nzo systems had a high proportion of gravity-fed and untreated raw water while in Chris Hani the supply was mainly from boreholes. In both cases, a management arrangement with community-based organisations, supported by a contracted team of technical specialists, was applied. The costs per activity were found to be higher in Chris Hani for all activities, with the main reasons being high mechanical and electrical components, greater need for technical expertise and greater travel distances.

Gibson (2011) also undertook a theoretical activity-based costing approach to compare regional and 'stand-alone' or local schemes. The results are shown below.

[15] Escalation suggested by Jim Gibson, July 2015 personal communication.

Table 15: Operating cost comparison of regional and 'stand-alone' schemes

Figures at 2009/10 prices	Regional	Stand-alone	Regional	Stand-alone
	R '000s per year	R '000s per year	Cost per hh (R/ month)	Cost per hh (R/ month)
Opex - civil	616	49	8.1	0.6
Opex - mech&elec	332	224	4.4	2.9
Maintenance - civil	533	343	7.0	4.4
Maintenance - mech&elec	374	261	4.9	3.4
Support	904	1 103	11.9	14.2
Total	**2 759**	**1 980**	**36.4**	**25.4**

The regional scheme was a single scheme serving 34 villages, with a surface water source, while the 'stand-alone' scheme was based on 34 individual schemes serving each village. The much higher level of operating expenditure for civil works in the case of the regional scheme is surprising considering that the asset values of both options were similar. This is the major explanation for the difference in costs per household for the two options. It is arguable that the costs could be a lot closer.

These figures from Gibson can be compared to costs from the MIIF analysis, which also used 2009/10 prices for operating costs. To do this, the depreciation and finance costs from the MIIF results are subtracted to give an average cost from the DW financial model of **R59 per household served per month**. This is for mixed service levels, probably with a higher proportion of yard and house connections than that applied by Gibson.

Estimating the operating costs of rural water schemes is difficult primarily because there is so much variability in the size of schemes and in settlement patterns. However, to conclude on this assessment, it is proposed that the figure of R59 per household served, used in the MIIF, (2009/10 prices) is reasonable, possibly on the high side. The figure should be lower for areas with easy access to water resources and less scattered settlements.

Finally, the very high escalation in costs shown in

Table 10 need to be noted. Annual escalation per household served may have been running as high as 15% per annum over the intervening six years to give a number as high as R130 per household currently.

2.7 The capacity gap

Stakeholders have identified that a lack of capacity within some municipalities is a challenge that impacts on the performance of the municipality. This section of the report analyses the staff capacity within the different categories of municipalities.

Staff complement

The first step of the analysis is to begin with the staff complement within each municipal category. This is displayed in the figure below.

Figure 29: Staff per municipal category

Metropolitan municipalities have the highest total staff complement. Metros also have the highest number of positions based on the number of households that are served. The diagram below presents the total number of posts per 1000 households.

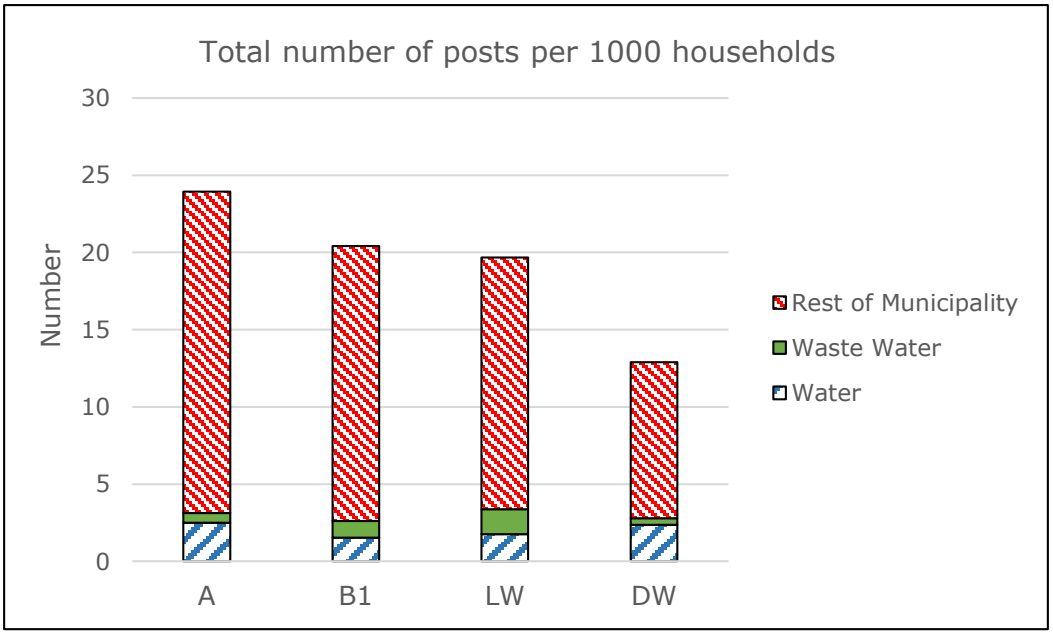


Figure 30: Total positions per 1000 households

While metropolitan municipalities have the highest number of staff when normalised by 1000 households served, the number are of the same order for other more urban municipalities, with DW category municipalities having about half the number of staff per 1000 households compared to metros. **However, the data shows that all categories of municipality have a similar number of staff for the water and sanitation function.**

Vacancy rate

Not all available positions at municipalities are currently filled. The table below presents the vacancy rate for water and wastewater functions in each of the categories.

Table 16 Vacancy rate across municipality categories

	Water	Waste water	Municipality excluding water and wastewater
A	11%	16%	10%
B1	27%	26%	23%
LW	12%	11%	11%
DW	5%	23%	13%

The fact that the vacancy rates for the water supply service in DW municipalities are relatively low is interesting.

Lack of technical capacity

Lack of technical capacity is often held to be the key constraint with regard to the effective performance of municipalities. This was highlighted in a recent MIG policy review report (DCoG, 2014) from which the following has been extracted:

'The constraint in engineering skills is shown to be strongest in the B4 local municipalities and in the district municipalities.

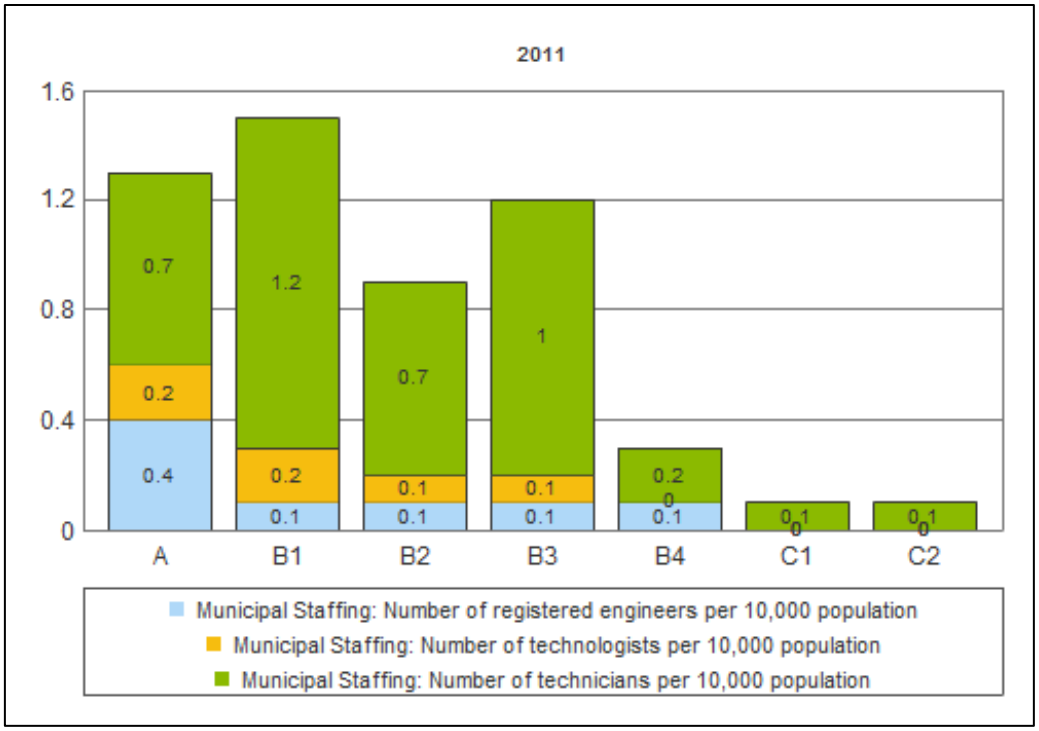


Figure 31: Engineering professionals per 10 000 population in municipalities (DCoG, 2014)[16]

Once again, from a Municipal Demarcation Board (MDB) 2011 report:

'*The major skills constraints are shown in B4 and district municipalities, with engineering staffing ratios of 0.01 registered professional engineers and 0.17 engineering professionals per 10,000 population in C2 municipalities. The shortage of engineers in C1 municipalities is*

[16] Note that B2 and B3 municipalities are representative of the LW category used in this report while C2's are representative of the DW municipal grouping where water services are the responsibility of the district.

not as critical as in C2 municipalities because fewer technical functions are performed in C1 municipalities.' (MDB, 2011: 52)

When looking at the figure above, it is worth bearing in mind that the number of engineering professionals per 10 000 population in successful international local authorities, according to Lawless (2009), is 2.2. Municipalities in ALL sub-categories fall very far short of this target.'

It is clearly in C2 municipalities, which are responsible for water services in the DW category used in this study, where the problem is greatest.

Conclusion on capacity

The low degree of functionality of water supplies in DW municipalities (See Figure 6) is not directly related to a lack of finance, based on the analysis presented here. It is also not related to the shortage of staff in terms of numbers. But it can be related to lack of technical expertise to set up sound systems, manage middle level staff and deal with complex infrastructure operation and maintenance matters.

2.8 Efficiency concerns

Governance, administration, planning and development effectiveness

In section 2.3, the proportion of GAPD expenditure which is assigned to water services was given as follows:

Municipal category	A	B1	LW	DW
% GAPD	20%	27%	39%	42%

The high levels of 'overhead' in LW and DW category municipalities is an indication of low performance. In the case of LW municipalities there may be an argument that their small size is a factor but this does not apply to district municipalities (DW).

Non-revenue water

Non-revenue water is a huge challenge for municipalities across South Africa. It is possible that this could impact on the ability of DW municipalities to generate higher income from tariffs. The diagram below presents the percentage of non-revenue water across the different categories.

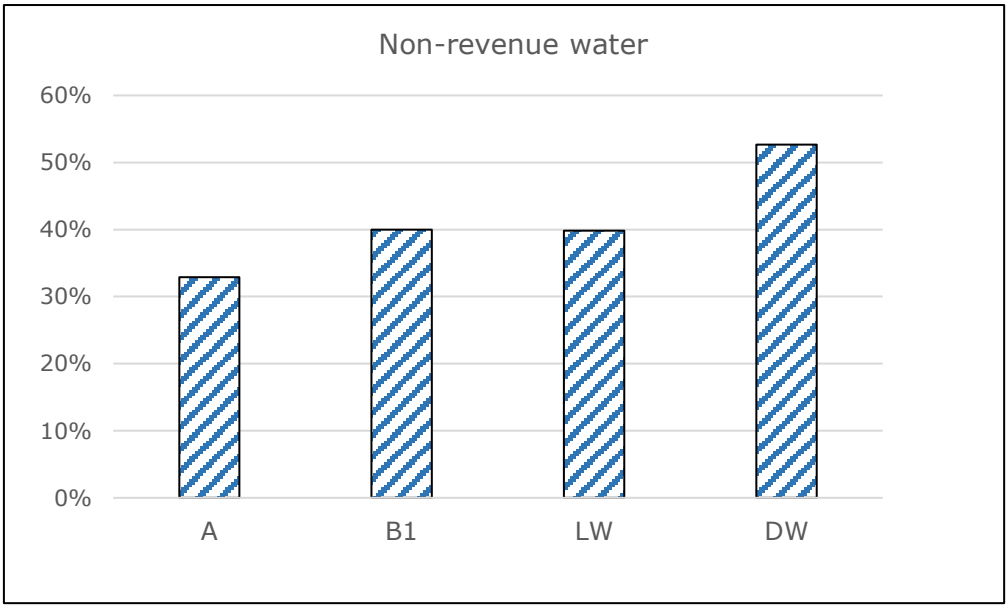


Figure 32: Non-revenue water[17]

Non-revenue water in DW category municipalities is 53%. This means that monetary benefit is received for less than half of the water that enters the DW water network. However, it could be argued that given the contextual differences between DW and other categories of municipalities that it is very difficult to reduce the levels of non-revenue water.

2.9 Closure

The evidence from this analysis shows, first of all, the wide range of different circumstances across the range of municipalities, from metros to mostly rural circumstances. The level of access to services and the functionality of these services varies considerably with the situation in DW municipalities being most concerning. Yet DW municipalities are quite strongly favoured with capital transfers and get adequate equitable share transfers to enable them to operate and maintain water supply systems properly, if only they raised revenue at the level that they should. The reasons for the variability in performance are argued to be primarily related to a lack of expertise in DW municipalities, with other types of municipalities also experiencing this shortcoming but not nearly to the same degree.

[17] Data was extracted from the Department of Water and Sanitation water services knowledge system and reflects data from the 2011/12 financial year.

The findings from this analysis represent an important contribution to the problem statement and are carried forward into the following sections of this report.

3 TRANSFER THEORY

There are four justifications for intergovernmental fiscal transfers, namely, vertical fiscal imbalance (fiscal gap), horizontal fiscal imbalance, externalities, and political rationales (Slack 2007, cited in UN-HABITAT, 2009). The South African context would fall into the first category, with local government not having sufficient own-source revenues to meet its expenditure responsibilities. UN-HABITAT (2009:36) suggests that the solution to vertical imbalance is '…an unconditional (lump sum or block) transfer that allows the municipality to spend the funds in whatever areas it deems appropriate. The amount can be distributed on the basis of revenue sharing, by formula; or on an ad hoc basis. Revenue sharing on a derivation basis favours richer areas, and also incentivises the generation of a return on investment, whereas the use of a formula based on underlying needs results in better equalisation or redistribution.

Transfers can be broadly categorised as unconditional (general purpose) or conditional (specific purpose) (UN-HABITAT, 2009), which can be further broken down into lump sum or equalisation unconditional grants (based on some form of differentiation), and matching or non-matching conditional grants

Table 17: Types of intergovernmental fiscal transfers

Type of transfer	Characteristics
Unconditional	No conditions attached to use; lump sum
Unconditional (equalisation)	No conditions attached to use; lump sum based on fiscal capacity and sometimes expenditure need
Conditional non-matching	Has to be spent on specified functions; lump sum
Conditional matching	Has to be spent on specified functions; municipality is required to match transferred funds

Source: UN-HABITAT, 2009: 36

In South Africa's case, the majority of grants are non-matching conditional grants distributed by formula, but with considerable latitude allowed to municipalities to take decisions on how the money is spent. Conditionality in grant programmes always raises some issues, and often

the design of the grant does not match the actual practice at the city level. The specific problem varies from country to country (see Kim, Lotz and Mau, 2010). In India, the trend is towards more grant conditionality and increased differentiation, taking the capacity of the municipality into consideration. In Brazil, conditionality of funding caused problems due to high standards resulting in expensive units that were not affordable to households (Freire, 2013).

Requirements to match grants with other finance are a common feature of good practice in developing countries (see Bahl, Johannes, Linn and Wentzel, 2013). But even where explicit co-funding is not required, there is always an implicit match in terms of operation and maintenance of the public facilities and expanded public service levels. Tanzania presents an interesting example of co-funding being provided by community contributions, rather than municipal co-funding. In 1990, the World Bank funded a project to upgrade some of the poorest communities in Dar Es Salaam (Freire, 2013). By involving the community in the design and maintenance of the new facilities, the community was given a sense of 'ownership' which led to them making a contribution of 5% of the capital cost of projects. This is similar in nature to the debates around the role of micro financing, which emerged in the Indian sub-continent (Jones and Datta, 1999; Patel, Burra and Cruz, 2002), but have been applied to housing projects in South Africa as well (Baumann and Bolnick, 2001).

The debate regarding the pros and cons of various strains of grant conditionality displays mixed experiences around the world. Shah (2009) presents both a theoretical and practical underpinning for a case in favour of output-based grants, rather than traditional conditional grants. In particular, Shah argues that the advantage of an output-based grant system rests in the fact that it gives local authorities the scope to freely determine the inputs which they use to achieve the agreed-upon outputs. This is supported by the fact that grant financing is linked to service delivery performance.

In contrast, under a traditional conditional grant system, local authorities are more constrained in terms of having to provide detailed feedback on the process by which they introduce inputs into their programmes. Another constraint to traditional conditional grants is that they tend to undermine local authority autonomy 'and budgetary flexibility while re-enforcing a culture of opportunism and rent seeking' (Shah, 2009: 82). These points are most succinctly illustrated in the table below.

Table 18: Traditional and output-based (performance-oriented) conditional grants

Criterion	Traditional conditional grant	Output-based grant
Grant objectives	Spending levels	Quality and access to public services
Grant design and administration	Complex	Simple and transparent
Eligibility	Recipient government departments/agencies	Recipient government provides funds to all government and non-government providers
Conditions	Expenditures on authorised functions and objects	Outputs – service delivery results
Allocation criteria	Programme or project proposals approval with expenditure details	Demographic data on potential clients
Compliance verification	Higher level inspections and audits	Client feedback and redress. Comparison of baseline and post grant data on service quality and access
Penalties	Audit observations on financial compliance	Public censure, competitive pressures, voice and exit options for clients
Managerial flexibility	Little or none. No tolerance for risk and no accountability for failure	Absolute. Rewards for risks but penalties for persistent failures
Local government autonomy and budgetary flexibility	Little	Absolute
Transparency	Little	Absolute
Focus	Internal	External, competition, innovation and benchmarking
Accountability	Hierarchical and to higher level government, controls on inputs and process with little or no concern for results	Results-based, bottom-up, client-driven

Source: Broadway and Shah (2009) in Shah (2009: 83)

Shah (2007, cited in UN-HABITAT, 2009:39) lays out ten public finance principles for designing fiscal transfers, namely:

Efficiency: Efficiency is achieved if the grant is neutral with respect to local government decisions on the allocation of resources to different activities, except where the grant corrects existing distortions in expenditure practices. For example, municipalities do not have the incentive to provide the correct level of services where the benefits extend to residents of other areas. A grant provides the incentive to increase expenditures to the optimal level.

Fairness (equity): Equity dictates that all municipalities should be able to provide an adequate level of service without resorting to unduly high tax rates. To achieve this objective, the transfer to municipalities should vary directly with the fiscal need and inversely with the fiscal capacity of the municipality (capacity to raise own-source revenues).

Clear objectives: Grant objectives should be clearly specified.

Accountability: The donor government should be accountable for the design and operation of the grant programme. The recipient government should be accountable to citizens and the donor government for the use of the funds.

Transparency: This principle is an extension of the accountability principle. Transparency is enhanced when the recipient government and citizens/taxpayers have access to information about the grant formula and the allocation of funds.

Stability and predictability: Revenues should be stable and predictable so that municipalities can budget and plan for future expenditures.

Revenue adequacy: Municipal governments should have adequate revenues to discharge their expenditure responsibilities.

Autonomy: Municipal governments should have autonomy and flexibility to set their priorities and not be constrained by grant funding.

Responsiveness: The grant formula should be flexible enough to allow municipalities to respond to changing economic circumstances.

Simplicity: The grant formula should be based on objective factors over which local governments have limited control. The formula should be easy to understand.

While the relative role of local government in the South African economy may be small by international standards (UN-HABITAT, 2009), local government is given considerable autonomy. Eckardt and Shah (2008) assessed the relative autonomy and responsibility of

local government in developing countries (including middle income countries) and South Africa ranks highest in terms of fiscal responsibility and third highest in terms of autonomy.

A key feature in the design of a fiscal system is the extent of autonomy to raise 'own' revenue given to cities (Smoke, 2013). In relation to international practice, South African cities have well-developed property rates and tariff-related revenue arrangements. However, there are arguments that there are other sources of local revenue which can be pursued in order to reduce the dependence of cities on grants. In this regard the local business tax initiative (De Waal, 2011) in South Africa was an attempt to gain greater revenue autonomy.

4 INTERNATIONAL EXPERIENCE – LITERATURE REVIEW

4.1 Introduction

The international use of fiscal transfers has a long history and is a well-established practice. This is evident in the fact that intergovernmental fiscal transfers finance about 60 percent of subnational expenditures in developing countries and transition economies and about a third of such expenditures in OECD countries (Shah, 2006).

According to Kim and Smoke (2003) there are three primary reasons that fiscal transfers have become such important tools in both industrialised and developing countries. Firstly, central governments typically have advantages over subnational government tiers in raising revenue, while subnational governments have advantages in providing many types of public services. Although the added effectiveness and efficiency of subnational government service provision is often debated, this has been exemplified in the water sector in that evidence has shown that water infrastructure services provided by local authorities are generally more accessible and reliable than those provided by the centre (Lewis, 1998; Schroeder & Smoke, 2007). This form of fiscal transfer, from central to subnational government tiers, represents vertical equity.

Secondly, in almost all countries, there are substantial disparities in revenue-raising capacity across decentralised levels of government. Therefore, central governments use fiscal transfers to improve equity across regional disparities, without which relatively wealthier jurisdictions would be able to spend more on public services than lower-income jurisdictions, which has not only equity implications but efficiency implications as well. This distribution of fiscal transfers across a singular tier of subnational government represents horizontal equity. Thirdly, Kim and Smoke (2003) argue that resources from the central level can be used to ensure that basic national priorities will be met in all subnational jurisdictions and providing these services may promote both efficiency and equity. As such it is evident that the

appropriate level of transfers among governments in a country is often determined by appealing to notions of fairness, equity and efficiency.

Given the proliferating use of fiscal transfer mechanisms, many varying systems have been developed globally; however, in examining these international transfer mechanisms it is critical to take cognisance of the complex political, economic and administrative systems of which the fiscal transfer system is part. As such, their design, role, and effects can really only be understood in the specific institutional context in which they operate, specifically in the context of potential replication (Bird & Smart, 2002).

As such, since circumstances and objectives differ so vastly across the globe, especially between the priorities of developing versus developed economies and within these groupings too, there is no simple uniform pattern of transfers that is universally appropriate (Bird & Smart, 2002). The most obvious of these differing circumstances, particularly in the entirely vital water resources sector, is the role of fiscal transfers in subsidising indigent access, an issue which developed economies typically do not need to address to as large an extent, if at all. As such, fiscal transfer differentiation systems have a large variance internationally and panaceas' to neither vertical nor horizontal equity are easily replicable across local circumstance.

It is important to further highlight that the design of fiscal transfers both informs and responds to alternative methods of closing vertical fiscal gaps. The alternatives include transferring revenue-raising power to local governments, transferring responsibility for expenditures to the central government, reducing local expenditures or raising local revenues. In most countries, however, sufficient mismatch in the revenues and expenditures assigned to different levels of government remains for some balancing role to be assigned to intergovernmental fiscal transfers (Bird & Smart, 2002). Although these apply to the concept of overall equity, similar dynamics can be seen at the services level. As such the transfers required to adequately finance a subnational government's water sector are a direct corollary to the varying levels of cost recovery through tariffs or alternatively the level of subsidised provision. This is evident in the fact that most industrialised countries have achieved relative vertical balance in their intergovernmental financing system primarily because they have given significant taxing powers to their subnational governments (Bahl, 2008).

4.2 Vertical equity

Vertical fiscal transfers are the primary way in which the majority of countries achieve a relative balance between central and local spheres of government, in a decentralised government. In other words, it is the primary way of ensuring that the revenues and expenditures of each level

of government are approximately commensurate to the roles and responsibilities of the sphere of government (Shah, 2006).

Bird and Smart (2002) state that there are three technical ways to determine the total amount to be transferred in order to address vertical fiscal imbalance. The first is as a fixed proportion of central government revenues. The second is on an ad hoc basis, that is, in the same way as any other budgetary expenditure. The third is on a formula-driven basis, as a proportion of specific local expenditures to be reimbursed by the central government or in relation to some general characteristics of the recipient jurisdictions. Countries will typically use several different intergovernmental transfer programmes in their system. Sometimes one form is dominant, for example shared taxes in Indonesia and the Philippines, but in other cases a mixture of grant types is used (Bahl, 2007). Either way, there is an implicitly or explicitly defined vertical share for each type of intergovernmental transfer.

Bahl (2007) argues that the most decentralising form of vertical revenue sharing, with the objective of vertical equity, is the shared tax approach. In the shared tax approach there are two design parameters to be addressed, the tax that should be shared and the percentage of this collection to be distributed to subnational units. However, in a cross-country examination there appears to be neither consensus on what, nor the reason for the choice of base to share. The percentage of tax shared tends to vary widely as well, and again there is no particularly discernible pattern. Interestingly, both China and Russia allocate about 25 percent of VAT collections to subnational governments, but Russia allocates about 60 percent of company income tax collections to subnational governments while China allocates it all. In the Philippines, about 40 percent of total internal revenue collections goes to the subnational governments (Bahl, 2007). Similar systems operate with respect to most major taxes in some developed countries. Examples are Austria, where local governments receive about 12 percent of income and VAT, and Japan, where local governments receive 32 percent of income and alcohol taxes (Bird & Smart, 2002).

The ad hoc approach to vertical sharing is a system whereby the amount of transfers is determined on a discretionary basis. Whereas the shared tax approach gives subnational governments an entitlement, in effect an ownership of some share of central revenues, the ad hoc approach contrasts in that the central government owns all of its revenues and may or may not choose to grant some share to the subnational unit (Fjelstad, 2001). This is a centralising approach to determining fiscal balance and there are extensive drawbacks to this approach. First, it lacks transparency and it is relatively subject to political manipulation (Fjelstad, 2001). It further makes it easier for the central government to treat the subnational

government sector as an item of secondary importance and lastly, the approach makes it easier to deny the link between expenditure responsibilities and revenue resources (Bahl, 2007).

The approach does however also have certain advantages, particularly for developing countries. One such advantage is the flexibility in carrying out macroeconomic fiscal planning that it provides (Fjelstad, 2001). A second advantage is that this approach enables the central government to change national spending priorities without changing the expenditure assignments of each level of government. Third, the ad hoc approach allows an adjustment of the subnational government claim on revenues, as the situation in the country changes, whereas shared tax provisions, particularly when incorporated into constitutions, are not easily changed (Bahl, 2007).

An example of the ad hoc approach is the Russian FFRC, which is Russia's primary system of intergovernmental transfers. In the past it stated each year as a percentage of central government revenues the vertical allocation quota. However, the percentage chosen was a central government decision, presumably based on the fiscal position of the central government (Bahl, 2007). In sum, the ad hoc approach to determining the size of the distributable pool is the most centralising approach to designing an intergovernmental transfer system. Despite this, the system is widely used, even in some countries that feature decentralisation as part of their development plans.

The formula-driven approach to achieving vertical fiscal balance offers the most potential in terms of mechanism innovation, largely due to its inherent international variation across countries, spheres of governance, as well as service delivery sectors, and the ability to respond systematically and transparently to local fiscal context and service priorities. This approach typically ties in with horizontal balance, given the ability to differentiate to take into account local variance in need in a systematic manner.

However, ultimately, the level of and methods employed to determine the requisite vertical fiscal transfers in order to achieve vertical equity relative to responsibility is directly linked to local governments' revenue-generating powers and consequent capacity. The figure below shows a broad cross section of differing local government fiscal autonomy internationally, by gauging reliance on fiscal transfers as a percentage of total revenues. The figure shows that South African local government, on average, has a far higher reliance on vertical equity transfers relative to comparative nations, a number of which are covered later in this report. This is indicative of both the importance of design of vertical transfers within South Africa and,

further, the caution that must be taken in evaluating international practice for potential replication in South Africa given the variation in dependency.

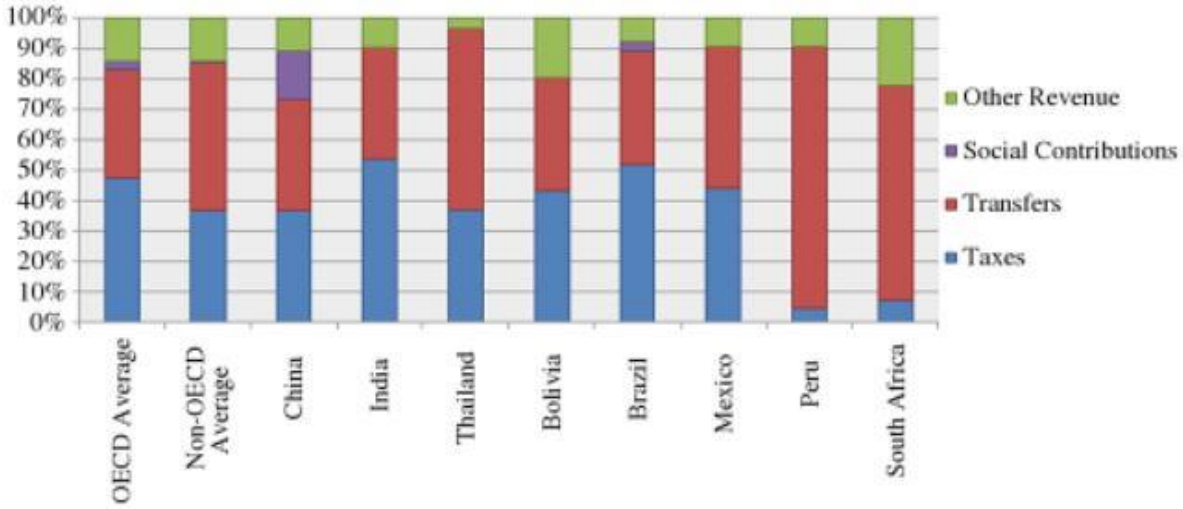


Figure 33: Local government fiscal autonomy
Source: Veiga et al (2015)

Shah (2006) argues that only as a last resort should revenue sharing, or unconditional formula-based transfers, be employed to address vertical balance in a decentralised government. This he argues is primarily due to the negative impacts these systems have on accountability to local taxpayers. An example is the tax-sharing mechanisms used to a large extent in both India and China which are particularly inefficient as it becomes a disincentive to tax-raising effort where shared, relative to a case where the full taxation would be retained.

Overall, internationally, in terms of mechanisms for achieving vertical balance, industrialised countries tend to largely employ tax decentralisation or tax-base sharing. In certain cases, such as Canada and the Nordic countries, a balance between personal and corporate income tax systems is achieved by allowing the central government to provide tax abatement and subnational governments to impose supplementary rates on the national tax base. In developing countries and transition economies the most common mechanisms used are tax by tax sharing and general revenue sharing (Shah, 2006). However as stated previously, the majority of countries employ a mixed approach to promoting vertical balance, as was evident in figure 33. Although it is typically argued that in decentralist theory the majority of these transfers should be unconditional in order to promote local government autonomy, relatively smaller conditional transfers can have a very positive impact on expenditure and institutional

performance if designed correctly. Furthermore, certain cases of 'hybrid' vertical fiscal transfer arrangements have been developed, which have been labelled as innovative. An example of such a system is the Canadian Gas Tax transfer, unpacked in the information box below.

Information Box 1: Canadian Gas Tax (GT) Transfer

The Canadian GT transfer represents just one of many transfers made by the federal government to the local government in Canada. It was formulated in response to the limited fiscal capacity of Canadian municipalities to raise revenues to fund infrastructure projects, and the crumbling state of infrastructure across Canada. It has been recognised as a particularly innovative form of transfer due to its design as a hybrid between a fiscal grant and a contribution.

The GT has some characteristics of a contribution agreement as it contains a complex accountability framework that includes an annual expenditure report, an outcomes report, and an audit report. However, simultaneously, it has characteristics associated with grants as the funding is given up-front, and while the agreements specify eligible categories (like public transit, water and wastewater infrastructure, community energy systems, the management of solid waste, and local roads and bridges), the federal government is not involved in the selection of specific projects. However, unlike traditional general purpose grants, the GT fund was based on a formula to determine fiscal allocation. This hybrid combination allows municipalities to make long-term plans, choose the type of green infrastructure projects that best suit their needs from the eligible categories, and have a closer relationship with the federal government (Adams & Maslove, 2009).

4.3 Horizontal equity

Horizontal fiscal balance, often referred to as 'equalisation', is controversial, both because different countries have very different preferences in this respect and because it is a concept with many different interpretations (Bird, 2002). One way of viewing horizontal fiscal balance is in the same gap-filling sense as vertical fiscal balance, in that sufficient transfers are needed to equalise the revenues and the actual expenditures of each subnational government unit. This approach however ignores differences in local preferences and thereby one of the primary rationales for decentralisation. It further excludes recognition of local differences in needs, costs, and in individual subnational units' revenue-raising capacity.

According to Smart (2005), equalising actual local government outlays would discourage both local revenue-raising effort and local expenditure restraint, given that under this system those with the highest expenditures and the lowest taxes get the largest transfers. This outcome has been observed under comparable systems which have led to observably lower rates of tax collection by state governments in Germany and similar issues led to the centralisation of VAT collection in Mexico in the past.

Despite this, without any form of horizontal equalisation, a large portion of local governments would have vastly insufficient resources to meet their responsibilities at a minimum desirable level (Martinez-Vasquez & Boex, 2006) and hence a system for equitable fiscal allocation targeting, to a certain degree, is required. However, this regional disparity is generally attributable to not just fiscal capacity but expenditure needs, driven by differing costs for a standardised basket of public services due to varying demographic and socio-economic circumstances spatially.

In order to prevent the perverse disincentives created by gap-filling equalisation, most countries which have formal equalisation transfers generally aim either to equalise the capacity of local governments to provide a certain level of public services, or the actual performance of this level of service by local governments (Bird & Smart, 2002). In practice however, 'pure' systems hardly exist, and most countries today use all types of equalisation (Blochlinger & Charbit, 2008).

The performance-based transfer criteria typically adjusts the transfer received relative to the perceived need for the subsidised service. This system is generally more attractive to central governments because the level of service funded is in effect determined centrally, and transfers can be made conditional on the provision of that level of service.

Capacity equalisation approaches, however, aim to provide each local government with sufficient funds, between both own-revenues and transfers, to deliver a centrally pre-determined level of services. These are typically based on a measure of an individual region's potential revenue-raising capacity and not on actual revenues. Provided revenue capacity is measured accurately, such transfers will create no disincentive for local governments to raise revenues because, at the margin, the local government still bears full fiscal responsibility for expenditure and taxing decisions (Smart, 2005).

In Australia, the focus is very much on the equalisation of regional capacities to provide services though the allocation of goods of services tax. This allocation is based on the concept

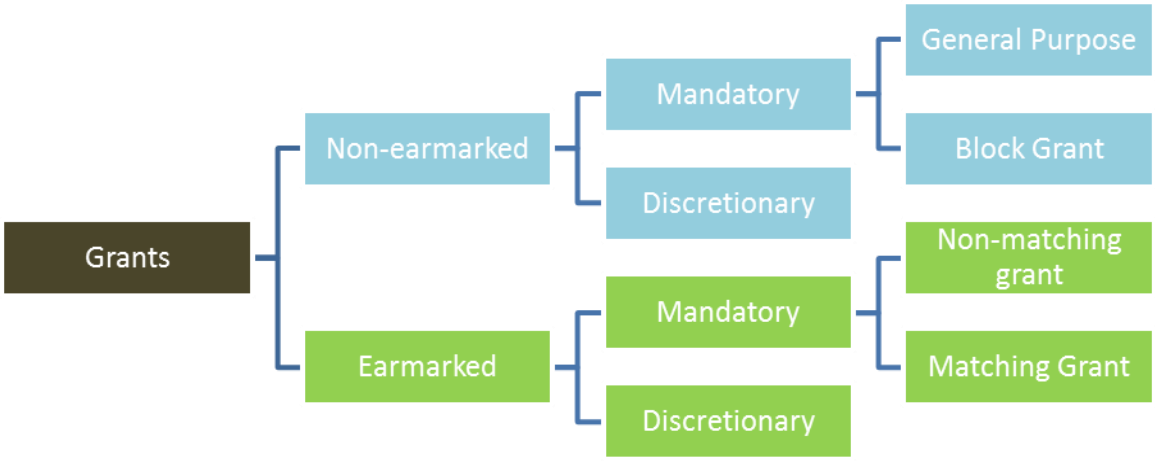
that subnational units receive a commensurate transfer such that if each unit made the same effort to raise revenue from its own sources and operated at the same level of efficiency, each would have the capacity to provide services at the same standard (Commonwealth Grants Commission, 2004). In Sweden, too, the aim is for the redistribution system to equalise capacities to provide services whereby local authorities would have the financial capacity to provide the same level of services irrespective of per capita incomes and other underlying cost and need factors (Blochlinger & Charbit, 2008).

In a few countries, equalisation transfers are earmarked, and sub-central governments perform public services under explicit financial control of the central government. Such arrangements raise considerable efficiency concerns. Earmarking is an input rather than an output- or outcome-related strategy. It brings about a considerable administrative burden and compliance cost for both the central and sub-central governments. Earmarking reduces sub-central choice and can lead to distorted sub-central budget allocation, especially if grants cover many small budget items (Blochlinger & Charbit, 2008).

4.4 Grant types

The classification of intergovernmental grants can be based on several viewpoints and there is no universally accepted system for classification. However, predominant systems include classifying intergovernmental grants based on orientation (development-oriented and non-development-oriented), and durability (capital grants and recurrent grants) or, as Broadway and Shah (2009) suggest, classifications that include matching grants and non-matching grants; closed-ended and open-ended (Dyah, 2013). Obviously, there is the broader distinction of conditional and non-conditional grant systems and a variety of unconditional (or general) grant systems are in use to determine the total amount to be distributed among subnational governments (Fjelstad, 2001).

Bergvall et al (2006) use the typology of grants shown in the figure below to define different grant types internationally.



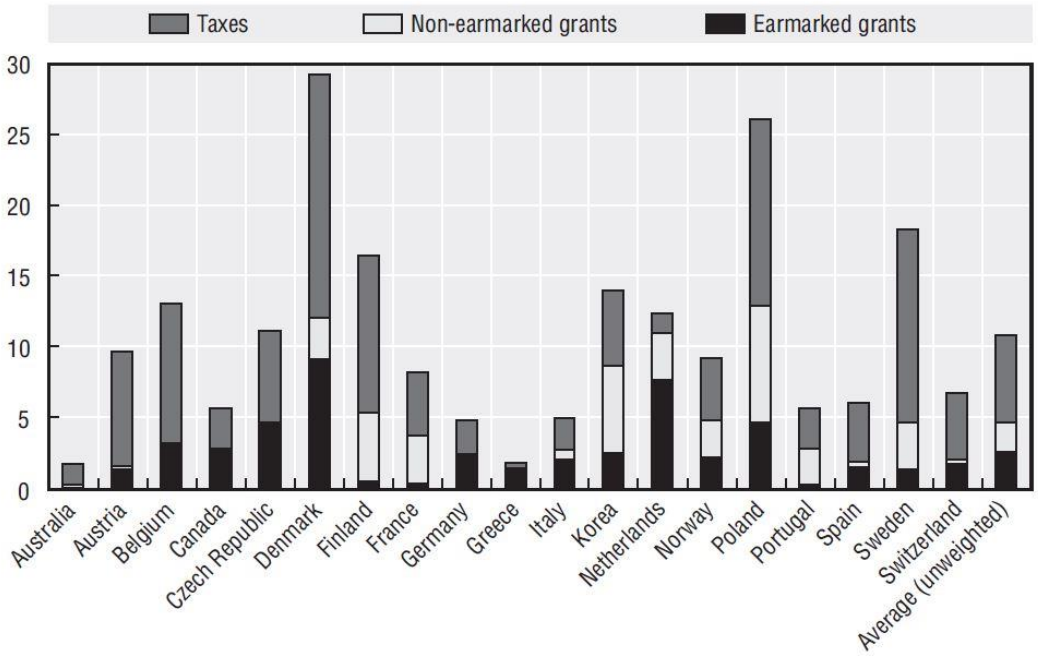
Source: Adapted from Bergvall et al (2006)

Figure 34: A typology of grants

Earmarked vs non-earmarked

Although there are important differences between countries, the most common way of transferring resources from central to subnational government, in OECD countries, is through earmarked/conditional grants (Bergvall et al, 2006).

Non-earmarked mandatory transfers can be general purpose or block grants. Both types are similar in that they increase the subnational governments' revenue without changing relative prices in the provision of services. The difference is that a block grant is given by the grantor for a specific purpose. However, since the grant is not earmarked, the grantee's actual use of the grant is not controlled. Instead, the output could be regulated through, for example, a set minimum standard that the subnational government would have to provide. The criteria used to calculate the level and distribution of the grant are usually connected to the normative cost of providing the goods or services for the sector as a whole, using variables that a specific subnational government cannot directly control (Bergvall, 2006). The figure below shows the wide variance in usage of earmarked and non-earmarked grants across a wide spectrum of countries. It further shows that the majority of countries employ a mixture of the two fiscal transfer types.



Source: Bergvall et al (2006)

Figure 35: International usage of earmarked and non-earmarked grants

A second, commonly employed system of fiscal transfers is allocation among local governments of a formula-driven grant. Typically, these formula-driven grants are meant to employ objective, quantitative criteria to allocate the pool of revenues among the eligible local government units. The most common rationale for this approach is to gain transparency and certainty in the distribution of grants. In general, a formula might reflect four objectives (Bahl, 2000). The first is to allocate grant funds so as to reflect regional differences in expenditure needs.

4.5 Service differentiation

The rationale behind earmarking grants for specific services internationally is rooted in the multiple objectives and priorities that central governments wish to transfer to local government and these are commonly reflected through conditions in fiscal transfers. As opposed to unconditional grants, which are in certain circumstances advocated for promoting autonomy and interjurisdictional resource redistribution, conditional grants are a more efficient way of encouraging expenditures on particular types of target services. Although the majority of decentralised governments internationally use a mixture of both systems, global trends have

increasingly seen a move towards greater consolidation of transfer systems, largely driven by the complexity and administrative burden of managing multiple fragmented mechanisms.

Conditional grants can broadly be categorised further into output- or input-based. According to Shah (2006), the majority of developed and developing countries typically do not use output-based transfers for fiscal need compensation in sectoral grants. Developed and developing countries differ, however, in that developed countries tend to employ more simply designed input-based conditional sectoral grants which use relatively basic demographic factors for guiding fiscal allocation. Contrastingly, the majority of developing countries opt for complex formulas, using state of the art quantitative techniques in determining sectoral differentiation (Shah, 2006).

An overview of water services transfers

In general, internationally, there are there are three basic sources of revenues for water and sanitation services: tariffs, taxation and transfers from Official Development Assistance. Taken together, these three sources form the basis for achieving sustainable cost recovery. However, in most countries, there is a significant financing gap between the costs of meeting expected targets and the revenues from the three financing segments. Although a financing gap is very common in water sectors internationally, the level of this gap varies dramatically and due to differing drivers. It is worth noting however, that some countries have no financing gap, such as Germany, which stipulates by law that tariffs must cover the full costs of water supply and sanitation, including capital replacement and the remuneration of equity (OECD, 2009).

As such, the appropriate design of fiscal transfers in a country is responsive to the differing drivers of the gap and the priorities of the government. In Table 19, below, an example is provided of the primary challenges and common priorities of a specific country, as well as the potential interventions which fiscal transfers could be targeted towards.

It is generally argued that where higher levels of government pursue different objectives, that separate transfer schemes targeted at each objective help to enhance clarity and effectiveness (OECD, 2009). It is important to note that it is near impossible to single out a best or improved approach for the fiscal transfer system as a whole without first defining the problem that the reform is addressing.

Table 19 Water financing challenges and responses

The financing challenges	Addressing these challenges
1. Institutional framework and financing policies that result in ineffective and inefficient use of existing resources	Decentralisation-linked fiscal mechanisms to support local-level reforms
	Special fund mechanisms for supporting reform-linked programmes, local partnerships, or difficult institutional reforms
	Programmatic approaches to link sector financing to sector-wide programmes
2. Available public resources are often inadequate to meet the costs of sustained enhanced coverage	Attracting private sector participation and investments
	Promoting local investments through development of local credit markets
	Enhancing household and community resources for water and sanitation
3. The poor often do not benefit from increased coverage and existing water and sanitation (WSS) services	Access subsidies for WSS, demand promotion, and hygiene awareness
	Improving cross subsidies widely used in the sector through appropriate rules, universal funds, and auctions
	Output-based transfers to provide incentive-linked subsidies for access, consumption, or pro-poor reforms

Source: Adapted from Mehta (2004)

Consequently, fiscal transfers may have different purposes and can take many different forms across countries, both as a whole system and within specific sectors. Fiscal transfers for water specific services is the same where fiscal transfers commonly include grants, funding programmes and specific agreements that can be included in contracts. This is evident in the fact that Korea has a specific Water System Fund, while in Mexico, CONAGUA programmes are the channel for conveying federal revenues to state governments. In the Netherlands, Delta Fund 2020 transfers resources from central government to water boards, while in the United States, the financial incentive for water services mainly consists in pooling funds between state and local groups (OECD, 2011). This system used in the United States is unpacked further in information box 2 below.

Fiscal transfers for water services are, further, inextricably linked to cost recovery for the utility through tariff pricing and, conversely, a level of subsidisation of services. As such, without

defining the priorities to which specific government fiscal transfers are aimed, it is best to examine general systems for incentivising a desired reform outcome in subnational government units through fiscal transfers. Innovative solutions for targeting or differentiation of funds, on a needs-based system, specifically through formula-driven grants, can be assessed. Lastly, given the interdependencies of transfers to tariff cost recovery, the targeting and types of subsidies in use for the water sector can be assessed. As such, the following sections shall address these three broad topics individually.

Information Box 2: USA Drinking Water State Revolving Fund (DWSRF)

The DWSRF program provides project financing assistance to community water systems and non-profit non-community water systems (Includes sewage treatment, stormwater management facilities, drinking water treatment). The financial assistance is allocated in the form of sub-prime market rate loans, although States have the option of further subsidising some principal forgiveness or negative interest loans to communities considered to be relatively disadvantaged.

The DWSRF is a partnership between the national Environmental Protection Agency and the States and consists of independent revolving loan. These State DWSRFs are funded primarily through annual federal grants, state matching funds, loan repayments and interest earnings.

The strength of the revolving fund concept lies in the constant recycling of funds from an initial loan back into the program where they can be loaned out for future projects. A unique feature of the DWSRF program allows States to reserve up to 31 percent of their annual federal DWSRF grant under 'set-asides.' The set-asides can be used to further fund a variety of alternative State activities designed to achieve the public health protection objectives. Each State uses set-asides to complement its loan program by funding proactive efforts, such as technical assistance, training and other support related to capacity development, operator certification, source water protection and related programs.

(Tiemann, 2015)

4.6 Incentive-based grants

In many international cases, national transfers have been associated with a marked reduction in local government accountability and efficiency, according to Samad et al (2012). This is

generally attributable to inefficient accountability and transparency included in the design of the fiscal transfer system. In this regard, the majority of central governments have traditionally transferred grants to local governments and national utilities to subsidise operations or absorb losses.

Relatively recently, however, many international governments have been changing the principles upon which these funds are transferred by making them conditional on positive performance. These incentive-based grants and loans have proven to be an effective driver of reform because control or withholding of funds is an expedient sanction. They are showing very positive results in a number of countries that have instituted them and are effectively introducing a new element of governance for local government institutions (Baietti et al, 2006).

Shah (2010) argues that in both industrialised and developing countries, formula-based general purpose transfers dominate but co-exist with highly intrusive, micro-managed, specific purpose transfers. Both these types of transfers undermine political and fiscal accountability. However, it is further argued that reform efforts aimed at design elements that incorporate incentives for results-based accountability are resisted by both donors and recipients alike. Despite this, it is stated that results-based intergovernmental finance offers significant potential to minimise trade-offs between local autonomy and accountability while furthering access to merit goods (Shah, 2010).

Incentive-based fiscal transfer systems contrast inherently with the horizontal fiscal capacity equalisation approach unpacked in the previous section. While the rationale of the system may not seek to balance the fiscal capacity of local governments, incentive-based grants can be designed to promote the equalisation of actual levels of performance across local governmental units. However, a commonly recurring issue with incentive-based funds is that larger municipalities, which have better capacity in general, and those which historically have performed well, tend to attract the majority of funds due to being able to meet the incentive criteria. Cognisance of this is critical in that intergovernmental transfers should also look at ensuring equity, particularly for smaller rural towns that have very few other financing choices. This is an objective which horizontal equity seeks to meet which, however, must be specifically designed into incentive-based transfer systems.

With that said, the delegation of implementation responsibilities to local governmental units may make instrumental sense provided that the incentives facing local decision-makers are properly structured to produce the results desired by the central government (Bird, 2002). In such given a specific wider national, political, economic, administrative system context, the

use of incentive-based grants could well be considered inappropriate in certain circumstances in terms of devolution and local government autonomy.

Conditional grants typically specify the types of expenditures that can be financed (input-based conditionality), but they can also require attainment of certain service delivery results (output-based conditionality) (Dyah, 2013). It is the latter which typically constitute direct incentives for performance. The table below outlines the major differentiation between traditional conditional grants and those based on output-specific conditions.

Table 20: Traditional and output-based (performance-oriented) conditional grants

Criterion	Traditional conditional grant	Output-based grant
Grant objective	Spending levels	Quality of and access to public services
Grant design and administration	Complex	Simple and transparent
Conditions	Expenditures on authorised functions and objects	Outputs -service delivery results
Allocation criteria	Programme or project proposal approvals with expenditure details	Demographic data on potential clients
Compliance verification	Higher level inspections and audits	Client feedback and redress Comparison of baseline and post-grant data on quality and access
Penalties	Audit observations on financial compliance	Public censure, competitive pressures, voice and exit options for clients
Managerial flexibility	Little or none. No tolerance for risk and no accountability for failure.	Absolute. Rewards for risks but penalties for persistent failure
Local government autonomy and flexibility	Little	Absolute
Focus	Internal	External, competition, innovation and benchmarking
Accountability	Hierarchical and to higher level government, controls on inputs and process with little or no concern for results.	Results-based, bottom-up, client-driven

Source: Adapted from Broadway & Shah (2009)

A relatively new form of output-based grants which incentivise performance, known as performance-based grants (PBG), have been gaining traction internationally and evidence has shown that implementation of this form of fiscal transfer has had numerous positive benefits.

Performance-based grants

PBGs have been implemented in a range of both developing and developed countries and have led to substantial improvements in the performance of targeted sectors or in response to strategic priorities. However, this is contingent on appropriate design and, in certain cases, negative externalities have been observed through the system. Furthermore, performance-based fiscal transfers for infrastructure finance have in many cases provided the financial incentive to promote coordination across municipalities, as well as address specific development issues facing individual municipalities. Shah (2010) states that the aims of PBGs fall into two groups: results-based intergovernmental finance to support broader reforms; and assuring minimum standards in the provision of merit goods. However, PBGs have only been used to sustain national minimum standards for merit goods in a few countries and the majority of these cases are in the education and health sectors, though there are a limited number of cases where PBGs have been used for other public goods, such as infrastructure delivery (Shah, 2010). An example of this can be seen in information box 4 on the Indonesian DAK.

Being a form of conditional grant, PBGs share similarities with traditional, input-based conditional grants. Both typically specify the types of expenditures that can be financed, and are intended to encourage subnational governments to undertake specific programmes or activities, usually those considered as a national priority by the central government. As is also the case for conditional grants, both can be used by central governments to make subnational governments provide certain public services, especially when they do not provide (Dyah, 2013). Furthermore, unlike grants where funds are distributed to local governments simply to give them the means to execute specific functional mandates, PBGs incentivise improvements in performance by linking local governments´ performance in predetermined areas with both access to and the amount of funding (UNCDF, 2008). As such, PBGs place conditions on the grants linked to service delivery performance, while simultaneously providing full flexibility in the design of programmes and associated spending levels to achieve those objectives. This assists in returning a local government delivery agent's focus to the results-based chain, and alternate service delivery framework to achieve those results (Shah, 2010).

The case of Germany has exhibited strong evidence that positive fiscal incentives can lead to effective implementation in a highly fragmented local context (Samad et al, 2012). According

to Mehta (2004), incentive-based fiscal transfer mechanisms are particularly effective in implementing sector reform, and have been employed successfully in multiple water services reform cases internationally. An example of such is water sector reform in Ecuador, as illustrated in information box 3 below.

Information Box 3: Water Sector Reform in Ecuador – Use of Incentive-based FTs

Ecuador has pioneered an interesting case of urban water sector reform in which the national government offered 220 rural and small town municipalities free technical assistance and financial incentives if they agreed to delegate the provision of water supply and sanitation services to autonomous public and private operators.

Most Ecuadorian municipalities had previously provided water and sanitation services directly through municipal governments. In order to take into account and calculate the potential incentive to a municipality for implementing the reform process, a number of criteria are taken into account which balance both the criteria set and the demographic nature of the local government. It does this by incorporating (a) the sector model adopted, where increasing autonomy results in higher incentive allocations, and (b) the cost recovery achieved through tariffs, where higher incentives are awarded for increasing cost recovery, and (c) the size of a municipality in order to account for demographic differentials (Baietti et al, 2006).

The premise of PBGs is to incorporate incentives into intergovernmental grants by relating funding with performance or output in a sector. This is the main point that differentiates PBGs from traditional input-based grants. Advocates of PBGs argue that this grant can improve the accountability of grant recipients by tying funds transfer with standard attainment, thus strengthening the link between input and performance. As a result, PBGs also promote accountability by emphasising result-based, bottom-up, and client-driven approaches (Broadway & Shah, 2009).

Although there are many variants of PBGs globally, in most PBGs, subnational government units need to show that they have complied with basic conditions in order to access their grants. The basic conditions are typically based on statutory provisions and compliance is absolute, either the conditions are met or not met. Many of the basic requirements are further

designed as basic safeguards to bring down fiduciary risks to an acceptable level. Figure 4 below provides an overview of PBG types and targeting priorities.

In a number of cases the performance criteria of PBGs are further entrenched by increasing or decreasing the size of grants in relation to the assessed performance of local government (UNCDF, 2008). Although the foci of PBGs may be adjusted through design to target differing priorities, there are two broad categories into which international variations can be grouped. The first is the type of performance which the grant is aiming to leverage. The second is the form of allocation, for example sector-earmarked or discretionary funds. As such, PBGs may be designed in a multi-sectoral way, aiming to improve the overall institutional and organisational performance of local government entities, or, alternatively, PBGs can have sector-specific targeting. Most experience in developing countries has been with the former, multi- or non-sectoral capital grant category.

I. TYPE OF PERFORMANCE THAT IS TARGETED IN THE INDICATOR SYSTEM	II. USE OF FUNDS – MULTI-SECTOR VERSUS SPECIFIC (EARMARKED)	
	MULTI-SECTOR USAGE	SECTOR-SPECIFIC USAGE
SERVICE DELIVERY	**A. Multi-Sector Usage** Service Delivery Focus (e.g. pilot testing in Nepal of grants to urban authorities).	**B. Sector- Specific Usage** Service Delivery Focus (e.g. Uganda – School Facility Grant, Philippines- Health Grants). Numerous grants within the education area, such as grants linked with enrolment rates (capitation grants in Kenya and Ghana) and/or specific outputs (level of students passing exams with certain quality, etc.)
INSTITUTIONAL	**C. Multi-Sector- Usage** Institutional Focus (e.g. Uganda, Tanzania, Kenya, Mali, Sierra Leone, Nepal, Bangladesh, Ghana, Indonesia, Solomon Islands, Bhutan and emerging systems in the Philippines and India).	**D. Sector-Specific Usage** Institutional Focus (e.g. Philippines (Health), new sector-development grants in Tanzania (Agriculture, Health, Water).

Source: UNCDF (2008)

Figure 36: Performance-based grant types

It has further been argued that not only are PBGs a relatively new and innovative fiscal transfer mechanism but further that effective design of these mechanisms can promote innovation as well as preserve autonomy, encourage competition and bring strict accountability for results to residents. This is achieved through the design of incentives to promote innovation and competition where input-based grants fail to do so (Shah, 2006).

Information Box 4: Indonesian DAK – PBGs for Water and Sanitation Infrastructure

Indonesia has implemented the use of output performance-based special purpose grants (DAK) as a tool for local government infrastructure delivery in the water and sanitation sector. As performance-based grants for drinking water require pre-financing, given the output-based requirement for funding, recipient local governments allocated the funds from their local budget for equity investment in their water supply. With this investment, water supply companies build piped-water household connections for low income households, and report the works to local governments (Dyah, 2013).

Application for reimbursement is subsequently processed if the connections worked well according to standards determined by the Ministry of Public Works. For PBG projects, verification of the connection's functionality is confirmed by payments made by customers to water supply companies for three consecutive months. This emphasizes that PBG insists not only on the availability of output resulting from the grant funds, but also on the fact that the output is functioning well, thereby including performance. After the connections are verified, local governments can apply for fund reimbursement to the Ministry of Finance (Dyah, 2013). The technical index formula for the allocation of the output performance fund for drinking water is calculated by:

TI = 5% WS + 40% LP + 5% WC + 40% IC + 5% AW + 5% RP

Where:

Water scarcity index (WS)	=	Number of villages with water scarcity in a city/regency / Number of villages with water scarcity in Indonesia
Low-income population index (LP)	=	Number of low-income population in a city/regency / Number of low-income population in Indonesia
Water coverage index (WC)	=	% population without access to piped water in a city/regency / % population without access to piped water in Indonesia
Idle capacity index (IC)	=	Idle capacity of water in a city/region / Idle capacity of water in Indonesia
Awareness index (AW)	=	% budget allocated for water sector, not including DAK, by a city/regency / % budget allocated for water sector, not including DAK, by all local govts
Reporting index (RP)	=	Score of DAK for drinking water implementation in the previous year / Total national score of DAK for drinking water implementation in the previous year

Source: Dyah (2013)

An interesting inclusion in the formula is the awareness index included to favour subnational governments which allocate a relatively higher portion of their budget for drinking water. This is implemented as a form of incentive-based matching grant allocation, by rewarding LGs which already prioritise the service. It further acts to mitigate the effects of fungibility in grant allocations (Slack, 2007), which is the situation where grant recipients shift conditional funding to a non-targeted area, a common concern for grant allocation. A further incentive for performance is evident in the reporting index through which the higher the score, the more positive the reporting index becomes, which will lead to increasing allocation returns. This further encourages subnational governments' compliance to reporting requirements and is clearly an incentive for increased performance in delivery.

The equivalent index for allocation towards sanitation has the same reporting and awareness indices, but further includes a sanitation coverage index. This has a positive feedback relationship to the percentage of the population with access to sanitation. Although this appears to be a potentially contradictory approach, where the higher the service levels the higher the reciprocal allocation, however it actually acts as an incentive to increase performance in delivery by rewarding increased delivery (Dyah, 2013).

South Africa, often cited in cases of best practice fiscal transfers in the context of the developing world, has previously incorporated incentive-driven grants to support the reform of urban services, including water and sanitation. Such grants include USDG, MIG, Expanded Public Works Programme (EPWP) Grant and the integrated city development grant (ICDG) (Ncube, 2013). However, the use of PBGs which are specifically output-based has not been mainstreamed into the system. In the developing world, Uganda is the most often cited case study for the implementation of PBGs as it is credited as being the first developing country to broadly institutionalise the practice.

Although the use of incentives in intergovernmental transfer frameworks is not new, their systematic inclusion as an integral part of the grant allocation process, as with PBGs, is a relatively recent emerging practice internationally. Uganda was an early innovator, and piloted PBGs in the 1990s in four districts, with a gradual expansion in the number of local governments covered. By 2003, Uganda's PBGs had been scaled up to municipalities nationwide. Other countries have since followed suit with at least 15 countries using a PBG approach in 2009, either on a pilot basis or, as in Tanzania, Nepal and Bangladesh, having rolled them out nationwide (Steffenson, 2010). Overall, it is the incorporation of incentives for performance that defines the main innovative feature that differentiates PBGs from traditional input-based grants which provide funding prior to the implementation of a task.

4.7 Subsidies

Subsidies to water utility customers are a prominent feature of water services globally and often the value of these subsidies represents a significant share of public expenditure and utility costs. In India, for example, drinking water subsidies have been estimated at 0.5 percent of GDP, or about half the value of power sector subsidies in the country (Mason, 2009).

One, if not the primary, rationale for the subsidisation of water and sanitation services is the significant role adequate and reliable water infrastructure has in nationwide economies, to households, and to poor households in particular. Improved water supply and sanitation services are associated with raising productivity and living standards, and contemporary debate has placed a significant emphasis on the role of infrastructure in poverty reduction (Baiettie, 2009).

Internationally, a multitude of varying mechanisms and systems of water and sanitation subsidisation are employed. An illustration of this is provided by Mason (2009) in the following paragraph:

'*In some cases, subsidized service is made possible by large transfers from general tax revenue, which can be in the form of either capital projects or regular transfers to cover revenue shortfalls. Utilities also benefit from a wide range of less visible subsidies, including electricity and raw water inputs in water production. In addition, many utilities use cross subsidization within their customer base to fund subsidies for specific groups of consumers. Other utilities simply absorb the financial loss from the general or targeted subsidies, gradually wearing down capital stock and pushing repair and maintenance costs off into the future*.'

Despite this there are broad classifications of dominant and emerging approaches to subsidisation of the water services sector. Primarily subsidies are categorised by consumption and connection targeting. Although there is continued debate as to the relative effectiveness and efficiency of the two approaches, it is obviously important to take cognisance that consumption subsides can't effectively reach the poor if the poor don't have connections, and, as such, the specific approach to targeting employed by a country will be largely impacted by relative coverage of services.

With regards to the debate between the two approaches, a seminal World Bank review (Komives et al, 2007), simulated the performance of connection subsidies, and found their performance in reaching the poor was generally better than consumption subsidies. However, it was further indicted that this would not be the case where the selection criteria for the subsidy were badly designed or the main network did not extend to a poor neighbourhood in the first place.

The Komives et al study further provided a framework for the broad categorisation of consumer utility subsidy targeting which is applicable to both the water and sanitation services sector. This is shown in the adapted table below.

Table 21: Subsidy types and targeting mechanisms

Subsidy type	Untargeted	Targeted subsidies			
		Inexplicit targeting	Explicit targeting		
	Untargeted subsidies	Implicit targeting	Self-selection: quantity targeting	Self-selection: service-level targeting	Administrative selection
Consump-tion subsidises	Across-the-board price subsidies to all consumers. Charging for variable, but not fixed costs, to all consumers.	Low collection rate, with no dis-connection policy for consumers who do not pay their bills. Connections targeted towards those with illegal connections. Flat fees for unmetered connections targeted at high-volume consumers with unmetered connections. Single volumetric targeted at high-cost customers.	Increasing block tariffs targeted at low-volume consumers with meters. Volume-different-iated tariffs targeted at households with metered private connections who consume less than x units per month.	Free water at public water taps targeted at low-income communal access households.	Geographic-ally differentiated tariff targeted at relative deprivation pockets in terms of service. 'Social tariffs' targeted at customers classified as poor. Merit discounts and discounts for qualifying customers through registration. Burden limit cash transfers targeted at households whose utility bills and housing expenditure above a defined burden limit.
Connection subsidies	No connection fee targeted	Flat connection fee to new customers who are		Reduced connection fee for households providing	'Social connections' for households

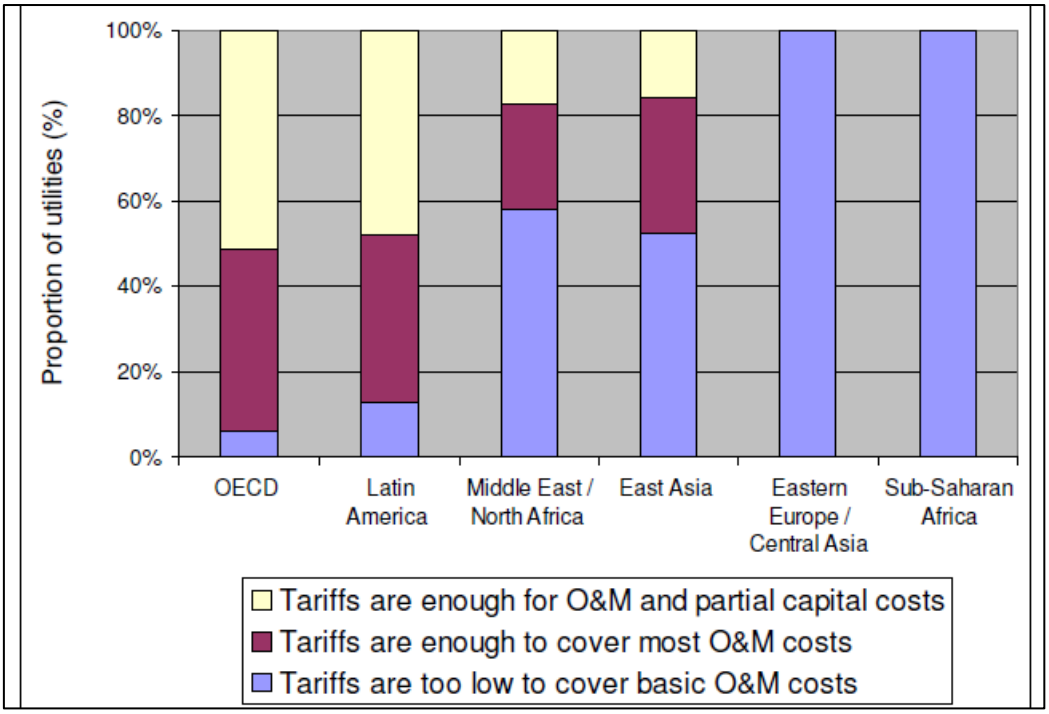
Subsidy type	Untargeted	Targeted subsidies			
		Inexplicit targeting	Explicit targeting		
	Untargeted subsidies	Implicit targeting	Self-selection: quantity targeting	Self-selection: service-level targeting	Administrative selection
	at all new customers. Subsidised interest rate for financing connections for all new customers.	more costly than average to connect.		labour or materials. Reduced connection fee for lower service level for households through self-selection	classified as poor.

Source: Adapted from Komives et al (2007)

As can be seen, a wide range of both subsidy types and targeting mechanisms are currently in use internationally. It is further evident that a wider variety of subsidies are aimed at consumption relative to connection. This can partially be attributed to the near universal levels of coverage in developed countries as well as in many intermediate economies. The disparity in variance is further attributable to the commensurately wide range of non-subsidy tariffs mechanisms in consumer consumption for water and sanitation utilities.

However, despite these broad assertions, there is in fact unsubstantial systematic information available on the prevalence of untargeted subsidies, implicit targeted subsidies, and explicit targeted subsidies in water supply and sanitation sectors around the world. Komives et al (2007) provide the explanation that this is due in part to the lack of comparable data across cases and in part to the lack of careful analysis of subsidies in the literature itself.

A study by Global Water Intelligence (2004) covering water utilities in 132 major cities worldwide revealed that under-pricing of water supply services is widespread, even in high-income and upper-middle-income and, although this represents a form of consumer subsidisation, it is not necessarily directly beneficial to poorer households. This level of subsidisation is evident in the figure below which indicates cost recovery through tariffs by regional block internationally.



Source: GWI (2004)

Figure 5: Utility subsidies and sustainability

The vast differentiation in cost recovery, and hence subsidisation, is further evident in a recent water tariff survey of 355 cities internationally, which found that, on average, resident consumers pay $2.18 per cubic metre for water and wastewater services combined. While the most expensive water in the world is found in Aarhus, Denmark, with an average tariff of $10.09/m^3, the cheapest water available to consumers is in the multiple countries such as Turkmenistan and Ireland which do not charge for water (GWI, 2014).

Although in countries which provide free water and sanitation services the poor will undoubtedly benefit, so too will the rich and that will be at the cost of utility sustainability. It is commonly accepted that subsidies can have certain adverse consequences that can actually impact negatively on improving the quality of service to existing consumers as well as extending access to unconnected households. This, it is argued, is due to the distortions created in the use of water, thereby leading to an inefficient use of resources and thus indirectly raising the costs of service provision. Furthermore, water and sanitation subsidies can promote inefficiency in utility operations, as utility managers face soft budget constraints. As such, it has been shown that in certain cases the costs of subsidies in terms of inefficiency may rival, or exceed, any benefit derived from the provision of the subsidy. For this reason,

effective and efficient targeting of specific demographics is critical in the sustainability of subsidy resources.

Table 22: Subsidy classification

Type	Description	Advantages	Disadvantages
Cross subsidy	Some customers pay above the cost of supply so that others can pay less	May remove the need for public government support	Relies on sufficient non-poor customers; main targeting mechanisms are unreliable (quantity targeting, see below)
Direct subsidy – outside tariff	Government subsidises certain customers directly, whether through subsidies earmarked for water services or through general income support	Can be precisely targeted; allows utilities to set tariffs based on economic efficiency principles alone	High administrative costs involved in targeting recipients and disbursing subsidy
Direct subsidy – within tariff	Government subsidises utility; consumers pay below the cost of supply	Government subsidises utility; consumers pay below the cost of supply	Government subsidises utility; consumers pay below the cost of supply

Source: Adapted from Mason (2010)

A corollary task of targeting in subsidies, specifically in the water and sanitation services, is not only which demographic group to target but, furthermore, what mechanisms for supplying the subsidy are most effective in the context. In this regard, Baietti et al (2009), in their analysis, find that subsidies work best for discrete one-off activities such as to defray the cost of connection fees for poor customers or fund a discrete capital investment in a particular coverage area. It is further argued that transfers aimed specifically at subsidising recurring operation and maintenance costs pose a higher risk to financial sustainability due to the possibility of sudden subsidy reductions which would have serious financial consequences for a utility, its maintenance programmes, and its technical performance. Despite this however, the majority of water and sanitation subsidies internationally target the latter.

Information Box 5: Self Selection Service-level Targeting

An alternative approach to targeting is to allow households to self-select into a subsidy scheme by choosing a particular level of water or sanitation service. The service-level-targeted subsidy models are aimed only at relatively inferior service levels, which would presumably be unattractive to wealthier households. Those levels could include lower-quality, less-reliable, or less-convenient services, such as a public water tap or a low-voltage electricity service. The expectation is that poor households are more likely than rich households to choose the subsidized service because they are more concerned about cost than about quality and convenience.

To the extent that this expectation is true, service-level targeting can be an effective approach to excluding non-poor households from utility subsidies. Service-level targeting is a particularly interesting alternative to consider in low-coverage situations where the pace of expansion of traditional water or electricity services is slow. Many of those lower-level services actually cost less to install and operate than a network system with private connections. (Komives et al, 2009)

An interesting alternative to traditional subsidy mechanisms is the direct subsidy system, whereby government funds are used to cover part of the water bill of poor households who meet certain clearly defined eligibility criteria. The main advantages of direct subsidies are that they are transparent, explicit, and minimise distortions in the behaviour of water utilities and their customers. The main drawbacks of direct subsidies are the difficulty of defining suitable eligibility criteria as well as the administrative cost entailed in identifying eligible households.

As is unpacked in further detail in the country case studies of this report, Chile has implemented a direct means-tested household subsidy for water. Gomez et al (2003), compared the effectiveness of the Chilean means-tested targeting to the geographic targeting system of Colombia. The statistical findings showed that the Chilean system was more effective in identification of recipient indigent households than the Colombian system; however, the distributive impact of both cases was found to have negligible difference. Furthermore, it was found that despite the relative merits of the Chilean means-tested scheme, targeting errors are still quite large. More than 60 percent of subsidies accrue to households that are above the third decile of the income distribution (Gomez et al, 2003).

However, relative to the most common form of water services subsidy, the quantity-based consumption subsidy aiming to subsidise low-volume customers, is highly regressive whereas the majority of geographically targeted and most means-tested utility subsidies are progressive, but still exclude many poor households. Connection subsidies are an attractive alternative in low coverage areas, but they will only reach the poor if utilities extend network access to poor households and if households choose to connect. (Komives et al, 2007). A broad overview of these varying systems, and their inherent characteristics, is provided in the table below.

Table 23: Subsidy targeting arrangements

Targeting method	Description	Advantages	Disadvantages
Quantity (self-selection)	Cost per unit is designed so that lower consumption entails a lower unit cost (e.g. IBT/ VDT). Assumes poor customers can choose to consume less water	Relatively low administrative costs	Inability to determine consumption through shared services
Service level (self-selection)	Low-cost alternatives to individual household connections, such as yard taps or kiosks, are provided at reduced cost. Assumes the poor will choose the cheaper option	Many of those lower-level services cost less to install and operate than a network system with private connections	Lower standard of service may reduce benefits in terms of convenience
Geographical (administrative selection)	All households within an area identified as a low-income area receive subsidy	Cheaper than other administrative targeting methods	Can be crude; even slum areas may have higher income residents
Categorical (administrative selection)	Certain social categories of customer targeting	Cheaper than full means testing	Categories may not correlate to poverty/ vulnerability; requires accurate data on category composition

Targeting method	Description	Advantages	Disadvantages
Means testing (administrative selection)	Targeted in relation to a number of variables – can combine geographical and categorical targeting with income tests	Can be very accurate	Significant administrative costs; may not be practicable if there is not a developed welfare system in place

Source: Adapted from Mason (2009) and Komives et al (2007)

4.8 International case study synthesis

Five countries were investigated in this literature review. They were selected as they are considered peer countries at similar stages of development to South Africa: Mexico, Brazil, Colombia, India and Chile. Further, three of the five have similar approaches to South Africa with regard to decentralisation, with Chile, and to an extent India, being the exceptions, with relatively centralised approaches to water and sanitation provision. It is also notable that in India, Mexico and Brazil there are 'states' (regional governments at subnational level) which play a major role as intermediaries in the system of transfers from national to local government.

The individual country studies are included in this report as an annexure. It is evident from the literature review that the systems of transfers in the selected countries are complex. However, a number of high-level commonalities are shared amongst them in terms of fiscal transfer systems. Broadly speaking, all of the case studies exhibit a combination of conditional and non-conditional intergovernmental transfers, which are allocated by a predetermined system to achieve differing forms of vertical and horizontal balance.

Horizontal fiscal balance

A commonality of the case studies, which they share with South Africa, is a large spatial variance of socio-economic inequality inter-regionally and as such the case studies tend to rely heavily on central distribution of resources, through fiscal transfers to local governments, in order to provide more equitable access to finance, as well as cross-subsidisation. However, the systems used both to determine the horizontal equitable share transfers, and any associated conditionality, vary widely between the reviewed countries. These range from the strictly complex formula-based systems of Mexico, Colombia and India to the more generally prescriptive nature of Brazilian transfers to the ambiguous project-based allocation of the

Chilean system. It is important to note, however, that in most cases these systems are correspondingly linked to the ability of local government to raise own revenue, recognising the importance of co-funding. However, this own-source revenue requirement is generally not applied stringently.

Differentiation

The table below shows the primary systems that the case study countries use to determine the horizontal distribution of fiscal resources from the national government to subnational through intergovernmental transfers.

In a broad sense, it is argued in the literature that formula-based systems of allocation are preferable in that they provide transparency of process, accountability, increased local government autonomy and increased predictability of fiscal fluctuations for the recipient subnational unit.

Table 24: Differentiation across municipalities: criteria applied in case study countries

	Differentiation criteria
Mexico	Formula-based: Federal allocation, primarily population metric based, State allocation to municipal is variable, however, typically mimics state formula
Brazil	Largest federal-municipal transfer based on combination of per capita income/ population range/ rural index
Colombia	Primary block transfer, formula-based: relatively low weight on population and high weight on index measure of local poverty rates (also considered an urbanisation index) using local responsibility metrics such as health and infrastructure provision
India	Formula-based: Takes into account population (60%)/ per capita income (25%)/ tax effort (2.5%) / fiscal management (2%) / national objectives performance (3%)/ special problems (7.5%)
Chile	Differentiation of transfers to subnational government is predominantly a project-based allocation tool and thus independent of formulaic and pre-established criteria of expenditure

Vertical fiscal balance

The use of transfers as a means of addressing vertical fiscal imbalance is applied across the countries to a varying degree. This is generally aligned with global standards with intergovernmental fiscal transfers financing approximately 60% of subnational expenditures in

developing countries and transition economies, whereas fiscal transfers finance approximately only a third of expenditures in OECD countries (Shah, 2006). However, this is largely dictated by the prevailing level of fiscal and governmental decentralisation although, despite this, the literature indicates that in most cases functional governmental decentralisation and fiscal decentralisation is commonly unaligned. Although there is a range of reliance on vertical transfers between case studies, none present evidence of complete fiscal autonomy, with local governments having full control over the way they spend money, including transfers. Beyond the expenditures they finance, these transfers create incentives and accountability mechanisms that affect the fiscal management, efficiency and equity of public service provision and government accountability.

The role of intermediary regional governments as both recipients and as intermediaries in the allocation of fiscal transfers to local government shows variance across the spectrum of case studies too.

Conditionality

All of the case studies present the use of a mixture of both conditional and non-conditional fiscal transfer systems. However, the proportionality of this mixture varies greatly with some cases presenting a clear reliance on one form or the other and some using a balanced optimisation. There are also differences in the extent to which 'output-based' transfers are applied, linking grant finance with service delivery performance by placing conditions on the results to be achieved while providing full flexibility in the design of programmes and associated spending levels to achieve those objectives.

Brazil has a very high level of unconditionality attached to transfers, favouring revenue sharing systems and devolution of revenue-generating capacity, in line with its high level of fiscal decentralisation. Mexico presents a more balanced level of conditionality which tends towards non-conditional transfers related to infrastructure; however, conditionality-linked transfers make up just over half of the available water sector fiscal resources at local government level.

Colombia, on the other end of the scale, has a large level of attached conditionality, with 75% of the largest transfer stream being earmarked for specific sectors and purposes. This is in contrast to its heavily decentralised governance structure. India to a large extent employs close-ended matching transfers which present a way to induce local government to use its spending in accordance with national demands, without imposing explicit conditionality on transfers. Although this system is at times commended for presenting a balanced approach to

conditionality, it is also criticised for the extra burden placed on local government entities with relatively low fiscal capacity as they have less matching finance available thus perpetuating horizontal imbalances and spatial inequality. Thus, it is advisable that matching rates are set In inverse proportion to per capita fiscal capacity in order to allow poorer jurisdictions to participate in grant-financed programmes.

Chile has a mixture of both heavily conditional and non-conditional transfers depending on the allocation stream. Most importantly, the grants to municipal governments in Chile for water and sanitation access by the poor are specifically targeted to cover 25-85% (means tested) of a household's water and sanitation bill. This uses conditional output-based allocation processes which is a shining example of a fiscal transfer funded programme which balances equity with performance orientation, according to Shah (2006).

Capacity building

It is commonly argued that decentralisation is problematic because local governments lack the capacity and resources to be effective, and that reform and devolution of functions often provide mixed results mainly because efforts to decentralise services are not accompanied by concomitant efforts to strengthen municipal capacity and ensure ability to provide services. As such, the relationship between fiscal transfers, the associated responsibilities attached to these and requisite capacity building at the subnational government level is a critical topic.

Mexico has a number of national transfers in which the transfer size is variable based on a number of metrics, of which municipal capacity is one. Furthermore, it has dedicated conditional transfers aimed at capacity building of local government. Although these do not represent a substantial share of total transfers in relation to the need for capacity building, relative to other case studies it appears as a potentially significant component of intergovernmental transfers. Contrastingly, Brazil presents an interesting case in that although it has no direct capacity-related transfer conditionality it has a law which limits the payroll expenditure of the federal government, states and municipalities – granted, however, this limit is 60% of expenditure, which still permits excessive bloating. Simultaneously, Brazil does have minor indirect conditionality to incentivise capacity building by using level of spending metrics in allocation calculation, although these could have a number of external distortionary impacts.

India provided arguably the most direct capacity-related fiscal transfer conditionality in response to decentralisation of the rural water and sanitation sector which was severely under capacitated. Therefore, one-third of fiscal transfers aimed at the devolution of the sector were

earmarked for capacity building of local government in the sector (DFID, 2001). As such, it represents a nuanced level of differentiation and conditional targeting.

5 STAKEHOLDER ASSESSMENT

The stakeholder engagement as part of this study included interviews with a range of organisations and two stakeholder workshops held in August and September 2016.

Interviews

The interviews were with a mix of national organisations and municipalities:

- National public bodies: National Treasury (NT), Department of Water and Sanitation (DWS), Financial and Fiscal Commission (FFC) and the South African Local Government Association (SALGA).
- Infrastructure financing institutions: Development Bank of Southern Africa (DBSA), Barclays Capital and African Infrastructure Investment Managers (AIIM).
- Municipalities: City of Cape Town (CT), Drakenstein Local Municipality (DLM), Saldanha Bay Local Municipality (SBM), Breede Valley Local Municipality (BVM) and Amathole District Municipality (ADM).

The intention was to cover a bigger group of municipalities and 20 municipalities were contacted with an interview request. However, overall this proved not to be fruitful as municipalities either did not want to make the time to be interviewed or the contact people identified felt unable to deal with the questions set relating to transfers. Nevertheless, the responses received were useful.

Stakeholder workshops

A broad group of stakeholders was invited to the main stakeholder workshop on 24 August 2016, with 15 people attending, from the following organisations: Water Research Commission, Department of Water and Sanitation, South African Local Government Association, Financial and Fiscal Commission, Rand Water, City of Johannesburg, Department of Cooperative Governance and Traditional Affairs – Gauteng Province, University of Johannesburg and consultancies.

Partly as National Treasury could not attend the first workshop and partly as DWS wished to have further discussion, a follow-up workshop was held with NT and DWS on 26 September 2016, with six people attending from both organisations, including relatively senior officials.

A summary of the discussions with stakeholders on the key items relating to the system of transfers is given below.

5.1 Understanding costs

It is accepted that in designing a system of transfers it is important to understand both capital and operating costs associated with the infrastructure provided.

At the interview with DWS they indicated that inappropriate technologies are definitely an issue. One example is when municipalities put in sophisticated wastewater treatment works when they could just have simple oxidation ponds. The system needs to incentivise good management decisions. It is important to choose what is incentivised carefully.

In response to the finding from the research on costs in Vhembe, Mopani, OR Tambo and Alfred Nzo districts, there was a debate about the costing of water and wastewater infrastructure at Workshop 1. The evidence from this research that regional schemes are not necessarily more expensive than smaller local schemes was held to be an important conclusion. This has implications for the design of transfers and implies that it is important to give all municipalities equitable access to finance through transfers. The argument was made that the key was to choose the technology that is appropriate for the specific conditions in a municipality.

With regard to on-site sanitation in rural areas, the concern was raised about increasing costs with little acceptance that households have shown in the past that they can build their own latrines.

The transfer system showed results through the provision of new infrastructure which met technical design and construction standards, but there remained two concerns relating to costs:

- The functionality of infrastructure was often not maintained due to capability and operating revenue shortcomings.
- There was no incentive to avoid over-design and encourage appropriate technology selection.

At the second workshop, the newly released analysis from FFC and SALGA on capital cost variability across municipalities was raised, without reference to the actual findings. The point was made that this could lead to more variable allocation of transfers based on local costs. The merits of this remain debatable.

5.2 Structure of the fiscal framework

The debate at the first workshop centred on the possibility of introducing a demand-side subsidy approach, where subsidies are given to households to purchase services. This could be done through coupons or some way of crediting people with an amount they could use to buy water or sanitation services from a 'provider of choice'.

In the interview with them, DWS considered the option of demand-side subsidies worth considering. But at the first workshop, while the potential efficiency benefits were noted, overall, the workshop participants argued that this was not feasible in South Africa. Municipalities were faced with fixed costs and the constitutional obligation to provide water services. If people used coupons without there being sufficient numbers accessing these coupons, the municipal water services undertaking will fail. There was also the potential for a black market in these coupons. Further, it there is only one service provider, which is often the case, the merits of the system disappear.

5.3 Equitable share and operating transfers

<u>The funding gap on the operating account</u>

Three of the five municipalities interviewed stated that they did not receive sufficient equitable share (ES) allocations. But in the case of cities, CT and DLM, the concern was more about the way the ES funding was distributed within the municipality and the extent to which the water services department benefited. ADM made the important point that the ES is used to pay for water services for all consumers, not only those which are poor. This occurs because those that could afford to pay, both households and enterprises, were not paying. This position was supported by SALGA and DBSA in the interview with them: the funding gap is often related to the inability of municipalities to raise own revenue.

NT, in the interview with them, claimed that no one has ever reliably shown that the ES is inadequate. So far, the FFC/SALGA study indicates that the ES over-funds water, sanitation and solid waste, but under-funds electricity. The issue with the ES is not magnitude, it is its unconditional nature. Perceived issues with the ES are more to do with the way in which the

funds are used within municipalities rather than the magnitude of the grant. It funds many things that it is not intended to fund.

DWS is satisfied with the level of ES funding.

A point was made by a financier – IAAM – that the ES could be used to ensure a revenue stream for public private partnerships (PPPs), presumably build-operate-transfer or lease-type arrangements.

This topic was also addressed in Workshop 1. A key concern is that the fiscal framework was designed to respond to gaps in the environment. It did not provide sufficiently for sustainability and efficiency. The system has encouraged excessive expenditure without promoting the best technology choices. There was insufficient consideration of the revenue base and whether it can sustain running infrastructure after it has been put in place. Non-revenue water was raised as one efficiency issue: water supply systems needed to be larger than necessary because of having to supply more water than is ultimately used.

In summary, there were concerns both with over-design and under-operation.

Structure of operating transfers

In considering the structure of operating transfers, the key issue of debate was whether there should be a separate grant for operation and maintenance (O&M) of infrastructure. This relates to the point made by DBSA in the interview with them over the failure of many municipalities to properly provide for O&M. There are options to use better technology to reduce costs and improve revenue. They believe in the potential of a separate O&M grant. NT, on the other hand, do not support a separate O&M grant, arguing that there is sufficient funding available to municipalities if they apply the ES and own revenue properly. This relates to a point made by ADM that they would like to see a portion of the ES ring-fenced for water services.

On a separate point, a financier (AIIM) confirmed their above point that getting a portion of the ES to guarantee a revenue stream will assist with PPPs.

The debate on a separate O&M grant was continued in Workshop 1. Again, it was founded on a concern about poor O&M performance in many municipalities, with the poor state of wastewater treatment works given as an example. A comment was made that it makes no sense to pump more money into capital while not making sure that you can run the infrastructure.

Some liked the idea of a separate grant, providing it was conditional and related to an approved O&M plan. But there were contrary arguments that it would be impossible to monitor; it was not like a capital grant where one can see what is happening. It is very difficult to track what is happening with maintenance. The point was also made that the grant system – ES included – should be targeted at the poor. How would one ensure that grant-funded O&M was used only on infrastructure for the poor?

The current situation where there was a guideline on what is to be spent on maintenance was also discussed at the workshop. Experience in Gauteng is that this has worked in Gauteng; municipalities used to have to spend 5% on maintenance, they upped this to 8%.

To summarise the workshop discussion, there was support for a separate grant but it would need to be carefully designed and monitored. But it was important to note that this has been debated extensively for the recent capital grants review and the conclusion was that it wold not be appropriate to give municipalities more money until they spent what they had carefully and raised the revenue that they should.

Distribution between municipalities

Considering the way the ES is distributed 'horizontally' – between municipalities, two municipalities responded in the interviews: CT do not believe the allocation is sufficiently transparent and DLM are concerned that the distribution is made based on outdated demographic figures. SALGA expressed the need for more effort to assess the differentiation impact.

Free basic services and targeting of subsidies

In the interview with ADM, they noted the poor targeting of subsidies to the poor within their district; a substantial portion of ES funding was also used to provide services to the non-poor. ADM has tried indigent register targeting for urban areas but it did not work well. SBM, on the other hand, use an indigent register to target subsidies and believe it works well. DLM and BVM use a free basic water allocation but target sanitation subsidies based on an indigent register which they are satisfied with. CT has effective targeting means based primarily on water volumes used, with an option of additional allocations in special cases.

5.4 Capital finance and structure of grants

Funding gap

All of the municipalities interviewed stated that they did not have enough capital finance and argued for higher levels of infrastructure-related transfers. ADM experienced the shortfall mainly with regard to renewal and the funds intended for water services being used for other purposes, mostly unfunded mandates. In BVM, 80% of MIG is allocated to water services, but there is a serious shortfall in capital funding. SBM need more but are managing.

National interviewees also acknowledged the funding gap, with DWS the least concerned although their views related mainly to their own grants, WSIG and RBIG:

- FFC is concerned that some can't close the gap and are working on this – more in the problem statement below.
- DWS noted that there is never enough money. But for now, what is being given to DWS grants is enough. It is progressively being increased in the Medium-term Revenue and Expenditure Framework. There is a big scope under RBIG and they can make a big impact with what is available. Right now, there are a lot of roll-overs which suggests that the problem is not lack of money, but how they manage projects.
- SALGA – a gap exists for new infrastructure but then costs are too high. So the main problem is funding for renewal.
- DBSA acknowledge the funding gap but note that there is also a lack of capacity to plan good projects, manage them and spend capital allocations.

The discussion was taken forward at Workshop 1. While it was acknowledged that there was a lot of capital available, SALGA acknowledged that municipalities express concern over lack of capital. SALGA believe it is more relevant to talk about a 'funding' problem with their issue less with lack of capital and more with funding to do O&M. Municipalities put infrastructure into place but then it collapses. In the view of the SALGA representative, capital grants should be kept at current levels, but more funding should go to O&M. In responding to this the researchers noted that the analysis shows the opposite: it is with capital and not operating funding, but with the recognition that there needs to be a proper balance.

WRC reported on a study carried out with SALGA on Beaufort West wastewater problems. They recommended an appropriate technology. DBSA and NT knocked it back because it was not more than R2 million. They ended up with an activated sludge plant just when electricity

prices went through the roof. It is not only a capital problem. Our problems are mushrooming in O&M in a big way.

Co-funding

In the municipal interviews, DLM and BVM stated that they were not able to co-fund, particularly at the levels required for RBIG projects. SALGA and DWS don't see co-funding conditions as practical as so many municipalities can't borrow. But they acknowledge it could work for economically stronger municipalities.

NT see this as a huge issue. RBIG is a good example of what happens; it requires co-funding but without a proper framework. While it is commendable that DWS have tried to see this through, it has faced challenges. NT would certainly listen to proposals regarding a proper matched grant framework and proposals on incentives. What is needed is sound design of these.

Financiers had strong views on this as they are potential co-funders. AIIM believe there are opportunities for improving access to debt finance if municipalities can increase their credit ratings. Blending finance is a good thing. They like guarantees. Barclays is looking to be proactive and find funding streams other than traditional loans. But there are problems with lending to municipalities: mismanagement, poor collections and poor planning. They believe ring fencing of projects will improve access to private sector finance and there is a role for special purpose funding vehicles.

The debate continued at Workshop 1. Looking at the situation more generally in Gauteng there was a different situation before and after 2008. They found that before 2008, the metros in particular were happy to co-fund, but after 2008 they said that there is no money for co-funding. A related point was made about the limitations set on borrowing by municipalities; there was a trajectory with NT tightening legislation around how municipalities borrow. This may have contributed to the pre-2008 and post-2008 difference. Generally, there was a high level of constraint on municipalities raising debt finance.

The discussion at the workshop moved to the specific issues associated with RBIG which had a policy of requiring co-funding for the 'economic' part of the infrastructure while the grant covered the 'social' part. Even in the 27 priority districts where the economy is weakest, municipalities are still required to co-fund. In reality, municipalities cannot raise co-funding and so they use RBIG for everything.

In conclusion, it was evident that co-funding could not work across the board. This has been recognised in the latest version of MIG policy: MIG will be used, at least to some extent, to fund economic infrastructure.

Grant integration

Outside the metros there are now three major grants which can be used for water services: MIG (not water services only), WSIG and RBIG. Much of the comment related to the extent to which these grants should be integrated or kept separate.

Municipal interviewees were generally supportive of integration but not entirely. ADM say there is a risk that integration will reduce the overall level of grant allocation. In fact, they see merit in a separate renewal grant to ensure that enough money is spent on renewal. They like the MWIG grant but believe they can't use it for sanitation. The water services interviewee from CT considered that a separate water services grant will ensure that the water services department gets its share. DLM and BVM both support grant integration. On the other hand, DLM likes the idea of some RBIG for very lumpy investments.

All the national public sector interviewees supported grant integration. SALGA see the arguments for both sides of the integration debate. FFC commented on the problems which occurred due to ring fencing of the sports and recreation component of MIG. NT is pushing for more grant integration. They are removing the constraints associated with sports and recreation and believe that MWIG should be progressively integrated – or reintegrated – with MIG.

In Workshop 1, a point was made about swings back and forth; there was separation, then consolidation. Separation recently was made because there were areas that were not working in a consolidated way. We need to be careful of having a theoretical debate and not remembering what played out on the ground. 'We have been through this process and developed it through trial and error. Let's not change too much. Consolidated is good, but keep those things that did not consolidate well separately'.

Others stated their preference for the way it is now. MWIG and RBIG work perfectly. They are specific, they don't disappear in municipalities. In terms of autonomy of municipalities, it is important to consider this on a municipality by municipality basis. Some should have autonomy, some not.

On reflecting on the recent capital grant review, there was comment on the necessity to understand the purpose of the grants; some of these grants were intended as intervention grants, not 'in competition' with MIG, etc. Over time, intervention grants should disappear because they have served their purpose.

Concluding at Workshop 2 it was proposed that there is going to be differentiation. Sector-specific grants should be a transitional arrangement, with consolidation coming in future as municipal capacity is built.

At Workshop 2, the discussion focused first on RBIG with its orientation to separate funding for bulk infrastructure. According to DWS this does cause problems in some cases where distribution infrastructure is not in place at the time bulk is provided. There was a discussion about the extent to which RBIG actually funds regional scale infrastructure. The WRC researchers claimed that RBIG criteria allow for relatively small scale infrastructure, matching 'local' bulk in many cases. DWS responded that there were examples of cross-border infrastructure.

Direct vs indirect grants

Of the municipal interviewees, only ADM responded on this issue, expressing a strong preference for direct grants. SALGA also support direct grants but it is a transition process; more indirect grants for less developed municipalities.

FFC, NT and DBSA favour direct grants both in principle and because indirect grants are under-performing, specifically RBIG. There is increasing concern about how RBIG is managed. Horrific underspending and in-year changes that seem to be for political reasons or attempts to fix grant design issues. Therefore, NT want increasing portions of RBIG to become direct. DBSA note the poor performance of RBIG, with long project delays. But there is room for this type of funding to some degree.

Distribution of grants

Of the municipal interviewees, ADM responded on the topic of distribution of grants that RBIG is easy to get for water boards and this may represent favouring of those municipalities which have water boards. ADM also experienced a lack of certainty regarding onging RBIG funding and had a problem matching expenditure to availability of capital. SBM considered the distribution of grants fair but did not get RBIG funding.

FFC believe distribution is fair but ring fencing portions of a grant (such as for sports and recreation facilities) distorts this.

At Workshop 1, the debate was centred around the selection of the 27 priority districts which receive additional funding, mainly through WSIG. Of these, 21 are district WSAs serving mostly areas where backlogs are highest and poverty levels the worst. What about the other six? Few people know how the six districts are selected but one delegate indicated that it was based on growth nodes and revitalising mining towns. Correlating this with strategic infrastructure projects (SIPs) in North West Province, it can be found that this is linked to SIP6/7/8 (not sure which). It was important to understand this rationale and see if it can be linked to a logical grant system.

In the case of RBIG, an observation was made that this was originally intended for bulk infrastructure only. This changed over time to effectively be DWS supporting municipalities that are not handling themselves. In further reference to RBIG, a delegate noted that the capital grants review took a different path on RBIG. In the first meeting with DWS about RBIG, SALGA proposed that it be given to water boards. The WRC researchers confirmed that that was the recommendation out of the DWS institutional reform and realignment project: if infrastructure is classified as regional, then it is not municipal, it is a national function and the funding goes to water boards.

At Workshop 2, the discussion focused on MWIG. The researchers expressed concern over the lack of equity in the way MWIG was distributed, particularly for the six priority districts which are not WSAs (called LW1 in the analysis). This gave an additional allocation to local municipalities (LMs) in these six districts. It has not been possible to find a consistent argument for the selection of these six districts, with the evidence suggesting their selection was not related to the economic circumstances of these LMs, or to backlogs. It was not suggested that there were no ‘needy’ LMs in this group, merely that some were not as needy as others outside the six priority districts.

NT noted that it would be useful to look at these LW1 municipalities a bit more closely to assess which of them are rural with high backlogs. It was noted that MWIG allocations were also made to B1 municipalities which were within C2 districts (districts which are WSAs). The rationale for this is not clear.

5.5 Grant conditions

All five municipal interviewees favoured fewer conditions, not surprisingly. However, ADM noted the difficulty in spending MIG within a one-year period and accepted the need for strict guidelines.

SALGA is concerned about excessive conditions imposed by departments. There could be a differentiated approach; fewer conditions for better performers. DBSA held that the grant conditions were all too often paper conditions which were not backed up with sound monitoring and intervention.

There was extensive discussion about this topic at Workshop 1. One of the key concerns was that if the regulator (grant overseer) lacks capacity to monitor, the conditions are not effective. Another delegate noted that there is then a disjoint between NT monitoring and monitoring by the transferring department. You have municipalities that lack the capacity to spend money efficiently and effectively and setting conditions does not help. On the other hand, the fiscal system is designed to say that you spent the money and you spent it in the right space. It does not assess whether you spent it efficiently.

On the topic of regulatory capacity, a delegate commented: 'You have NT with no engineers and DCoG with very few engineers, who are now all in the Municipal Infrastructure Support Agent (MISA). You have financial people putting regulations into place and technical people who now have to comply with these regulations'.

Rand Water reported their view. They work with municipalities in helping them spend their money. We are moving from the wrong premise if we think that conditions will make money be spent more effectively and efficiently. If you go to municipalities, they are more worried about meeting conditions in order to meet audit requirements. They would rather not spend than risk spending and not complying with conditions. When they work with municipalities they spend a lot of time on paperwork and complying with conditions before a contractor is even appointed. The issue is not that money is not spent efficiently; it is that money is not being spent. This is why MIG, for example, is not spent until a few months into the financial year. For first three months they are doing paperwork! More conditions are not the answer.

DWS reported on the way WSIG conditions were managed. Conditions that are there are so primary and basic that DWS doesn't see them having an effect on project implementation. These are critical conditions that assist in managing public funds. They cannot be cut further without losing control on oversight of funding. In terms of transfers, they transfer at the

beginning of the municipal financial year in July. Project implementation is affected by prolonged procurement, and this is well documented and accepted. On average, it takes six months to get a contractor on site.

It was noted that there are variable approaches to conditions. One delegate pointed out that some grants are nice to work with, some are very difficult; WSIG conditions are OK but MIG is another story.

With regard to MIG conditions one observation was that it was agreed last year that municipalities have to spend 30% of their budget by the end of December. They have to provide proof of payment. This is more realistic than 40% as it allows for lags in spending from the previous year, etc. But 40% is now required in the Division of Revenue Act (RSA, 2016).

In reviewing how grant conditions are applied, it was important to unpack objectives. A first audit condition is that you are actually spending the money on infrastructure. A second is spending within annual timeframes. It was argued that there is a need to move towards a more medium-term approach as one cannot get projects up and running in a year. A third issue is targeting. This is where it gets tricky. Internationally, the argument is that municipalities are best able to target.

The limitations of the audit approach were debated. The planning system in SA is currently driven by mitigation of risk with an obsession with avoiding risk, irregularity and wasteful expenditure. An example was given of a state hospital that got a clean audit trophy despite not having met 50% of its performance targets. This audit-driven approach leads to a situation where municipalities would rather return money to NT than be penalised for not spending the money correctly.

To conclude on the workshop debate, the following points were made:

- Some of these grants are increasing in maturity in terms of a differentiated approach; MIG to MIG-CITIES to USDG for metros shows how conditionality has matured. MIG-2 is coming soon, which means fewer conditions and more flexibility for secondary cities.
- Conditions cannot be taken away entirely, but greater emphasis needs to be placed on incentives to drive better performance.

- In terms of maturity, the move is from input-based conditionality to output-based. Monitor total performance rather than every project. A more trusting relationship with municipalities results.

There was further discussion on conditionality at Workshop 2. The research showed that there was no point in having conditions if these could not be monitored, a point made in Workshop 1. DWS representatives acknowledged this and the problem with capacity to monitor conditions. Nevertheless, the view was held that conditions are necessary.

The view was expressed that conditions often boiled down to a guideline and there was certainly room for such guidance. But this was not attached to any penalty for non-compliance.

5.6 Incentives

Two of the three municipalities that responded on this topic approved of incentives: DLM and BVM. SMB do not like incentives as they believe they disadvantage poorer municipalities.

FFC favour incentives and have published on this. They are working on policy.

At Workshop 1, a rather radical proposal to improve revenue collection was made. SARS, the South African Revenue Service, is effective in collecting revenue; can they not collect tariff revenues and transfer them to national government to distribute down to municipalities?

There was also an argument for more regionalisation through having larger municipalities. In response to this, the WRC researchers pointed out that it was unlikely that making municipalities larger would solve the problem, if one takes international experience into account. (SA has close to the largest municipalities in the world).

At Workshop 2, the discussion was based on the research finding that incentives have been shown to be successful in other parts of the world and yet there was resistance to applying incentives in SA. Overall, the sentiment in the meeting favoured incentives but there was no strong motivation to implement.

5.7 Capacity building

The topic of funding capacity building is related to the finding from the research that many municipalities, particularly in rural areas, lack capacity to operate and maintain infrastructure and raise revenue. A response to this topic from national interviews follows:

- The FFC acknowledge that capacity-building transfers are needed but have not done any work on whether they are adequate or not. They think that MISA's role in capacity building needs regular review so that we do not have a repeat of Siyenza Manje or Project Consolidate. They are encouraging the MDB to do a rigorous capacity assessment to inform the design of capacity-building transfers and ensure that they are well targeted.
- SALGA: The existing infrastructure skills development grant (ISDG) is doing well in training graduates. The municipal systems improvement grant has been a disaster.
- DBSA support more emphasis on capacity building but only with a properly designed programme. Municipalities need assistance in appointing consultants; often, the weakest municipalities appoint the weakest consultants. DBSA notes that, although there were capacity constraints, the MIG management system was well entrenched with the project management units (PMUs) relatively functional, supported by provincial MIG coordinators and benefiting from MIG forums.
- NT noted the existence of the Financial Management Grant, and that the Municipal Human Settlements Capacity Grant is no more. It failed completely. There probably does need to be more focus on capacity building. Capacity building is so diffuse. There are a lot of programmes and a lot of money, but not coordinated. Note that grant frameworks for indirect grants do require capacity transfer and skills development programmes so that grants are ultimately temporary. The overall view is that there has been a lot of money spent on capacity building by various departments. No one has ever really evaluated how much has been spent/is being spent and what has been achieved for this money. Would need a sound proposal based on an analysis of the proposal, and some solid recommendations for design of a grant to solve this.
- DWS raised concern over the skills planning and capacity-building transfer, but it is for O&M only. For DWS their support is an unfunded mandate in their grant framework. Most rural municipalities do not have engineers so they rely on professional service providers (PSPs). PSPs put high -level technology in place and then there is no one there who can operate this infrastructure. Building capacity is important. How can we do this? Twinning struggling municipalities with advanced municipalities? Also there are issues of project and programme management. MWIG is not attached to a project management component and is purely a capital grant. There is no money for project and programme management. So any departmental support must be done within the departmental budget. DWS just transfer the money and cannot assist and support.

Support for capacity building was also noted by a financier, IAAM, who emphasised the need for capacity building, but any capacity-building programme has to be well designed. The private sector can play a role.

Capacity building was also discussed at Workshop 1. One common thread was the need to understand what capacity building was about. There is a need to separate capacity building from training and education. Training and education is only a small component of capacity building. Another component is seconding specialist staff or bringing in new staff. The WRC researchers pointed out the importance of operating systems as a key element of capacity.

With regard to existing capacity-building initiatives, the following comments were made:

- One delegate noted the role of sector education and training authorities (SETAs); they have not been that successful, but they were intended to build capacity.
- Training needs to be part of a pipeline. That is why NT introduced ISDG. Need to think about how we groom. These 15 000 people who are being trained, where are they going to go? They are not in the pipeline.
- There was a capacity-building grant but it was part of a basket of NT grants and some municipalities didn't even know that it existed.

Experience from India was mentioned. The point was made that they had a gap with financial planning; they set up a special institute and put money there.

To conclude on Workshop 1 discussions: capacity building can be funded through a grant or a fund. It doesn't have to be given to a municipality but should be a funded programme. Involving the private sector is important.

Workshop 2 opened discussion on this topic with the research finding that showed there are big benefits to funding capacity building; better maintenance which means longer asset life, more revenue most importantly and better service to consumers. But capacity-building funding must be aligned with a well-designed, long-term, capacity-building programme. This needs to be based on private sector partnerships as it is highly unlikely that the public sector can bring the necessary capacity to bear in the medium term.

The example of MISA's new regional management support contract was used. This was held by the researchers to be an innovative approach, but the scale of implementation was too small and there are procurement problems.

Overall, it was agreed that lack of capacity was the greatest challenge facing the water services industry in South Africa.

5.8 Conservation-based grant

This topic was introduced as there is merit in providing funding for water conservation and demand management (WCDM). There was not much support for a grant but rather mention of what DBSA were doing in support of WCDM – a type of revolving WCDM grant with a performance incentive. The history of what Emfuleni has done, with the private sector funding investment in WCDM systems, was touched on. But evidently NT no longer allow this.

5.9 Management arrangements

Three of the municipal interviewees complained about excessive reporting requirements: DLM found RBIG conditions too onerous with excessive reporting; BVM found the feasibility and application process for RBIG frustrating and way too onerous. They get very little for all the effort they put into it. SBM found the RBIG application process too complex.

SALGA and DBSA supported the view that reporting conditions are too onerous. It was particularly difficult for municipalities with multiple grants.

6 PROBLEM STATEMENT

This problem statement is drawn from four sources: interviews conducted with municipalities and national stakeholders during Phase 3 of the project; the literature, particularly work done on recent reviews of transfers, reviewed under Phase 2; the financial and performance analysis which is presented in a separate report under Phase 4 of the project; and the two stakeholder workshops held as part of Phase 5 of the project. All of these inputs are summarised in the previous section of this report.

6.1 Overall performance of the SA water services sector

From most perspectives, the South African water sector has performed well. Since 2001, access to infrastructure, enabling people to gain access to an 'RDP' level of service, has increased from 73% to 86%, and access to basic sanitation has increased from 57% to 69% (DWS, 2016). On the other hand, there are serious concerns about the capacity of the sector (national departments working together with municipalities) to keep infrastructure functioning properly. The findings given in the financial assessment report show that there are high levels of infrastructure dysfunctionality, particularly in the mostly rural areas where districts are the WSA (DW category). There is an overwhelming view that this dysfunctionality is related primarily to lack of capacity to manage the infrastructure which is being provided.

Another feature of the South African water services landscape is that there are major differences in performance between metros, at the one extreme, and district municipalities which are WSAs, at the other. Metros can generally stand tall next to their international peers while many district WSAs are in a state close to being ineffective.

6.2 Understanding costs

The primary finding from the research is that there is no or little incentive for keeping costs low in municipalities which are largely grant funded. This leads to a situation where expensive systems are built and high operating overheads incurred with too little effort made to raise revenue. There is a need for more information on costs, with two points of note:

- The research undertaken for this report has found that the difference in costs of regional water supply systems and systems with local schemes is not as significant as thought previously.
- The FFC/SALGA study on costing is being concluded. FFC do not support the use of average unit costs and prefer a more differentiated approach that takes into account cost drivers. They accept that this to some extent opens a can of worms where municipalities can dispute the cost drivers and argue that they have cost drivers that have not been considered.

At the very least the FFC/SALGA study can be used for oversight, as a tool for assessing what municipalities are actually spending and charging for services (i.e. to scrutinise performance). It will be important to assess the implications of this study for the transfer system carefully.

What appears to be missing from the work done to date is a review of operating costs.

6.3 Fiscal framework adequacy

The local government fiscal system under which the range of transfers has developed is held in high regard by international observers; overall, South Africa has a sound local government fiscal framework, at least from the point of view of water and sanitation funding. The shortcomings relate to the design of some grants and the lack of performance incentives. It is recognised that some municipalities will never be self-reliant but the system should promote self-reliance with greater fiscal effort by municipalities. FFC is also looking at new funding instruments.

Municipalities are highly reliant on transfers both to construct and to operate and maintain water supply and sanitation systems. But, while the system of transfers has worked fairly well for higher capacity urban municipalities, this has not been so in mostly rural contexts. There

has been ongoing evolution of the system of transfers but it is still a long way from delivering the required results in these mostly rural contexts.

6.4 Equitable share and operating transfers

Adequacy of transfers

Currently, the equitable share (ES) is the primary transfer intended to be used to cover operating costs, with the emphasis on funding free basic services for the poor. While the adequacy of the transfer in terms of quantum is somewhat contested, the analysis available currently indicates that the level of transfers is sufficient. The financial analysis undertaken for MIIF shows that municipalities can raise sufficient revenue to cover the operating costs of water supply and sanitation systems, supplemented by the ES at the scale which existed in 2010. This is unlikely to have changed substantially since then. However, this is based on the assumption that municipalities apply the best possible fiscal effort and raise the revenue which is due to them.

Stakeholders engaged during the stakeholder interview phase appeared conflicted as to the presence of an operating funding gap. Municipal officials stated that the ES allocation was insufficient to finance the operations and maintenance of infrastructure whilst national departments advised that no study has ever shown that the ES allocation was insufficient. Once again, stakeholders identified other challenges that could manifest as a funding shortfall.

The first challenge is a lack of fiscal effort on the part of municipalities, as there is an over reliance on grant funding, and a reluctance to access other revenue sources. Metropolitan municipalities and secondary cities are usually able to generate sufficient revenue but, at the other extreme, district municipalities which are WSAs (DW category) have serious shortcomings with regard to revenue raising.

The second challenge is the decisions made with regard to the allocation of funding within the municipality. Municipalities can prioritise ES allocations at their discretion and this may result in other services being prioritised at the expense of O&M of water services infrastructure, or an excessive allocation to administrative overheads.

A further challenge that has been identified is the need for municipalities to ensure greater ‘value for money’ through increased efficiency. Municipalities need to consider the life cycle costs of infrastructure in order to ensure that infrastructure that is installed can be sustainably operated and maintained over the asset's expected useful life.

It is important, once again, to note that municipalities vary in terms of context, capacity and performance. Thus, some municipalities may experience all of the challenges noted above whilst others may experience none at all.

Separate funding for operation and maintenance

There has been considerable debate amongst stakeholders on the merits of taking some of the ES and allocating it to a separate O&M transfer. The motivation for this is that it will force municipalities to spend appropriate amounts on O&M which is often not the case currently. There are also strong arguments against this from NT, backed by the researchers responsible for this report. The problems with a new grant are partly related to increased grant fragmentation and partly that this is using a funding mechanism to do what a well-functioning municipality should do anyway.

6.5 Capital finance and structure of capital grants

Adequacy of allocations

The literature review indicated that, based on international experience, South Africa has a sound system for achieving vertical equity through sharing national revenue with provinces and local government. Further, the level of transfers to local government has been increasing rapidly over the past decade, although increases are levelling out now. Notwithstanding the substantial increases in transfers over the past years, the financial analysis undertaken as part of the MIIF in 2010 showed that there is a clear shortfall on the quantum of **capital funding** available. This has been backed up by other studies on metros and secondary cities more recently.

The lack of capital funding was corroborated in interviews. The City of Cape Town and Drakenstein Municipality argued that their capital grant allocation is insufficient, which results in the capital expenditure programme being constrained. Breede Valley Municipality also highlighted the shortfall by advising that they only get funding for a quarter of what they need. Amathole District Municipality does not have funding for infrastructure renewal.

Four of the national stakeholders: FFC, SALGA, DWS and DBSA, confirmed the lack of capital. SALGA argues that this is manly related to lack of funding for infrastructure renewal. DBSA pointed out that there are also problems with lack of capacity to implement projects effectively which translates into under-provision of infrastructure. DWS state that the funding

allocated to their existing grants – RBIG and WSIG – is sufficient but municipalities lack capital for economic infrastructure.

It is clear that the problem does not only relate to transfers but to lack of capacity to borrow and lack of attention to other sources of capital finance, development charges included. The ability to borrow also relates to the financial viability of the municipality and associated ability to generate cash surpluses on the operating account. The FFC is investigating new approaches.

Differentiation

The difference in context across the spectrum from cities to rural municipalities was a common feature of all the case study countries used in reviewing the literature. There are certainly wide differences across South African municipalities. Both international and local experience suggests that this needs to be built into grant design.

With regard to capital transfers in South Africa, the recent reforms of the grant system have, in effect, set up a differentiation structure as follows:

- Metros (A), which get the USDG and a range of other grants specific to metros which are not water services related.
- Secondary cities (B1) which get MIG and small amounts of WSIG and RBIG grants. The new MIG policy is creating a less conditional arrangement for MIG in these cities which sets them apart from other local municipalities.
- Local municipalities which are WSAs and which are deemed to be 'disadvantaged' (designated LW1). They are located in six of the 27 'disadvantaged' districts which are not WSAs[18]. They get MIG, WSIG and RBIG allocations.
- Local municipalities which are WSAs which are not deemed to be disadvantaged (designated LW2). They get MIG and RBIG allocations.
- District municipalities which are WSAs (DW), which get MIG, WSIG and RBIG allocations.

[18] Xhariep, West Rand, Waterberg, Ehlanzeni, JT Gaetsewe and Bojanala Platinum.

The criteria for identifying 'LW1' municipalities are very unclear. It is certainly not those which have poor economies (Bojanala Platinum district has a strong economy). This leads to questions as to how equitable this differentiation structure is and hence how equitable is the distribution of transfers, WSIG particularly.

There is also an unusual situation in the Division of Revenue Act (RSA, 2016) where some (not all) secondary cities are getting WSIG allocations and where some other local municipalities which are not in the six non-WSA, disadvantaged districts are also getting WSIG allocations.

For all that there are actual and planned changes, it is an open question as to whether differentiation is being applied equitably and rationally. For example, secondary cities are at a disadvantage as they do not get USDG and are not as favoured in terms of WSIG and RBIG[19]. Also, LW municipalities which are in the same economic circumstances get different allocations.

In summary, South Africa has a rapidly evolving capital grants system. But there are challenges in the way funds are distributed, with the main concern currently over the way RBIG and WSIG funds are allocated.

Co-funding

The literature strongly favours co-funding incentives as this has the potential to bring more capital into a municipality and break down dependence on grants. These are important objectives given the shortage of capital across the board in South African municipalities. While this was also supported in principle in the interviews, there was a consistent recognition that some municipalities just do not have the credit-worthiness to raise their own capital through borrowing. For example, the principle with RBIG funding is that it should cover only the share of costs assigned to social use while the economic component should be covered by borrowing. This seldom happens.

[19] They do seem to be getting small allocations of WSIG funding, for example.

Consolidated vs sector-specific grants

Consolidated grants are those which can be used by municipalities for a variety of infrastructure, typically including water, sanitation, roads, public services and possibly electricity. They allow municipalities to prioritise expenditure based on their unique contexts whilst sector-specific grants force municipalities to focus on national developmental agendas.

International experience is not clear on whether consolidation is better or not. Similarly, the interviews carried out for this study also indicated ambiguity amongst national stakeholders and municipalities. Typically, what happens is that sector departments at national and local level favour sector-based grants in that they provide greater control over the way the funds are used. Cross-sector national departments, municipal treasuries and municipal managers are likely to favour consolidated grants. This was evident from the interviews.

One of the key factors which influences the extent of consolidation is the capacity of the municipality to manage an integrated infrastructure programme and the extent to which the municipality raises its own capital, in which case the grant is just part of an integrated capital investment programme. This is the case with metros in South Africa applying the USDG, and the recent evaluation of this grant found that it was basically sound. MIG policy has also been reviewed recently with the finding that the grant is basically sound but with recommendations relating to conditionality, differentiation and incentives. In the Division of Revenue Act (RSA, 2016), NT is committed to further consolidation of 'urban infrastructure grants' (p110).

An argument against fragmentation, emanating from the analysis undertaken as part of this research, is that where water services-specific grants are introduced this does not necessarily lead to more expenditure on water and sanitation. Municipalities merely cut back on the use of MIG for water services and divert this funding to roads, for example.

Another argument against fragmentation of grants is that it becomes increasingly difficult for municipalities to understand and manage them. This is the reason why MIG was introduced originally and is the reason why NT has been trying to re-introduce consolidation in 2015 through removing some of the smaller water sector grants. However, even after this recent consolidation, in the water services sector there are still several separate grants: MIG (which in district municipalities is essentially a water services grant), WSIG and RBIG.

Direct or indirect grants

Concern over the use of indirect grants has been raised by the FFC in its annual submission to NT, which has responded with the comment: 'Government agrees that indirect grants are not always a sustainable or effective way of improving service delivery. They must be seen as a last resort and transitional in nature. In recent years, direct grant spending has proven to be higher than indirect grant spending in several cases, leading to a number of provincial and local government grants shifting from indirect to direct grants'.

RBIG is the grant which has caused the greatest concern for NT with regard to the effectiveness of indirect grants, as the grant has been underspent by DWS. On the other hand, DWS has traditionally argued for the RBIG mainly to deal with cross-border infrastructure and very large investments which cannot be made by individual municipalities. In reality, RBIG is used for bulk infrastructure which is not always large scale.

Based on the international literature review, direct grants are the most widely applied but Chile does use a project-based allocation system which implies strong national influence over the use of funding.

6.6 Capital transfer allocation mechanisms

The allocation mechanism for capital grants is probably the most controversial aspect of capital grant policy. Firstly, it needs to be recognised that formula-based grants are widely used and widely accepted internationally, with Mexico, Colombia and India using this approach, for example. Mostly, the allocations are made based on poverty indicators of some sort which is the case in South Africa with MIG and WSIG, for example. However, there are always concerns about the way in which the grant allocations match the capital requirements. One of these concerns which was mentioned in the interviews and dealt with in MIG policy reviews over the years is that for small municipalities investments can be 'lumpy' while grants come in as a steady stream each year. MIG policy has evolved to deal with this, to an extent, but it remains problematic.

Another concern is over the way the formula provides for new infrastructure and the renewal of infrastructure. The MIG formula currently favours new infrastructure, for example, yet increasingly municipalities need to invest in renewal of their existing infrastructure.

Another common argument over the formula-based approach is that it does not take varying infrastructure cost factors into consideration. For example, there have been arguments that

access to water resources is variable and that some areas require large-scale regional infrastructure which is expensive. However, the capital cost analysis undertaken for this study found that for a sample of rural districts the asset values per household are similar which implies that the costs of providing infrastructure per household are similar. There will be further information available on the variability of costs from the FFC/SALGA infrastructure costs study.

Where a formula is not used, as is the case with RBIG, there is typically the requirement to apply for a grant and for the national department to respond or identify the need for a particular project itself. There are four major concerns here:

- It relies on 'grantmanship' where the smartest municipalities are able to put the best applications together.
- It allocates more money to areas where there is large-scale infrastructure and disadvantages areas where good local schemes are suitable.
- It can be financially inequitable. Based on the costing analysis undertaken for this study, there is not a significant difference in capital costs per household for areas with large regional water supply schemes and smaller local schemes. So, a municipality which gets an RBIG allocation also gets a MIG, and possibly MWIG allocation as well.
- The grant incentivises the selection of large-scale infrastructure which may not always be the best solution.

In summary, the arguments for direct grants are strong. NT is moving in this direction by making more of the WSIG a direct grant. But is this going far enough?

6.7 Grant conditionality

The issue of grant conditionality has been raised by the FFC in its annual recommendations to NT. Treasury has acknowledged the importance of conditionality with the comment 'In local government, an incentive grant to metropolitan municipalities encourages integration across infrastructure management. In addition, the review of local government infrastructure grants has introduced reforms to improve asset management practices under the municipal infrastructure grant'.

Conditionality was also discussed in the interviews, with municipalities mostly strongly opposed to it. For example, the condition that a specific amount of MIG be spent on sports and recreation infrastructure was criticised. Under the MIG policy review the conditionality has been reduced somewhat to remove the restriction on spending on basic infrastructure as many municipalities rely on the grant to fund economic infrastructure, for example. There are strong

arguments that there are excessive conditions which go along with excessive reporting requirements.

For conditionality to work there needs to be sound monitoring and intervention mechanisms and these are not well established in South Africa. It is arguable that the only one that has worked in the past is the condition to spend annual grant allocations with the penalty being the withdrawal of funds.

6.8 Penalties and incentives

An obvious conclusion from the financial and performance assessment carried out as part of this study is that the current grant system does not incentivise good performance. Many municipalities, specifically in the DW category, spend large amounts of capital grant funding on infrastructure which they cannot manage properly with the result that the infrastructure fails to function properly. The extent to which this can be solved through greater incentives or penalties is open to question but there is certainly room for improvement. This improvement probably has to be applied to capital grants as the ES transfer cannot be made conditional.

Baietti et al (2006) have stated that governments have found that incentive-based grants and loans have proven to be an effective driver for reform. The use of incentives is broadly supported but it is clear that these would need to be correctly designed, communicated and applied. Incorrectly designed incentives could create unintended consequences and result in objectives of the grant not being met. It would also be important to note the differences between the context, performance and capacity of municipalities.

The South African allocations and transfers framework does not currently focus on incentives and penalties, with the exception being the integrated city development grant. Where penalties are applied to other grants, the main penalty is having funding retracted for underspending of the grant. Interviewees did not see this to be a suitable solution as this could result in municipalities that are reliant on grant funding losing capacity and being unable to sustainably deliver services.

However, the MIG policy review has recognised the importance of introducing incentives, based on good experience with this internationally. But, while there are some quite detailed recommendations on how such incentives should work, they are not currently incorporated into MIG policy.

6.9 Capacity building

The research undertaken for this report, backed up by stakeholder interviews, indicates that lack of technical capacity, particularly in more rural municipalities, is the most serious issue facing the water sector in South Africa. Yet capacity-building initiatives have generally not been successful although there has been insufficient evaluation done to make a sound finding. These programmes are seen to be diffuse and uncoordinated. Most recently MISA has been established with the expectation that it would make a big impact in improving the technical capacity of municipalities. But it too has not been successful. **The argument emanating from this research is that capacity-building programmes have not been well enough designed and funded.**

In considering funding options, and capacity-building grants in particular, the stakeholder positions stated earlier in this report indicate that these have generally not been successful although the infrastructure skills development grant is doing well in training graduates. The municipal systems improvement grant and municipal human settlements capacity grants are considered failures.

The option of having capacity-building grants has been addressed by the FFC in its annual submission to NT where it states: 'The FFC recommends that government establish a transitional capacity-building grant to fund technical assistance to enable municipalities to prepare and implement credible infrastructure asset management plans' (RSA, 2016). Treasury has responded by referring to the role of MISA and noting that capacity assistance need not necessarily be financial. In this vein MISA has recently been instrumental in gaining access to what could be called an indirect capacity-building grant which it is using to fund regional management contracts to support districts serving rural areas. This programme has potential but has been slow to take off and has had ongoing set-backs.

There has also been the notion that indirect grants can be associated with capacity building; sector departments would able to develop infrastructure in areas whilst simultaneously building capacity within municipalities. There is little evidence of this actually taking place.

Based on the research undertaken for this study, the returns on money invested in capacity building are considered to be high as large savings can be made on infrastructure with proper maintenance and revenue raising can be dramatically improved. If capacity building is considered to be the highest priority for the municipal infrastructure sector, and water services infrastructure specifically, why is so little being done?

6.10 Administrative challenges of the national transfer system

Grant administration has been noted to be one of the broader systemic challenges that have been identified in the study. Onerous reporting has been noted to have little effect on the performance of the grants. Further to this there would appear to be instances in which the application of the grant differs in practice, as compared to what was envisaged.

A number of role players are involved in the allocation and transfers framework. Sometimes challenges are experienced in getting all role players involved in the decision-making process. Coordination and planning needs to be improved. There needs to be buy-in on changes that are suggested, as well as an understanding that these changes may take time to be successfully implemented.

Monitoring and evaluation of the current grant framework is lacking. The current focus tends to be on ensuring that all funds are spent rather than assessing other indicators such as value for money and longer-term impacts. There is also a lack of data that can be used to inform decision making. This is not because municipalities are not providing information; the reporting requirements imposed on municipalities are excessive. The primary reason is argued to be poor design of the performance system and inadequate national data monitoring and information feedback systems.

7 POLICY OPTIONS

7.1 Radical change: shift to demand-side subsidy

The objective of this research was to look for innovation in the system of transfers. By far the most radical innovation is to move towards demand-side subsidies where, for example, households get a monthly coupon which they can use to purchase water. Assuming this was organised nationally, it implies that the equivalent level of transfer will be deducted from what the municipality receives and the municipality will redeem the coupon. There are, presumably, other ways of doing this, along the lines of the social security payments made in South Africa.

End-user subsidies have worked in Chile which has a highly privatised and commoditised water system. But there is a very different situation in South Africa and a number of factors which will make end-user subsidies very difficult to apply. Firstly, this would only be applicable to operating subsidies and the existing system of paying out ES allocations – a constitutional right for local government – would have to be amended. Secondly, a whole separate administration system for end-user subsidies would be required for a relatively low level of pay-outs. And, thirdly, it would be very difficult to make this system work in rural areas.

This option may be worth further debate with the end-user subsidy option set against initiatives to ensure that the ES is utilised in the most effective way.

7.2 Operating finance, the equitable share and operating transfers

Replace some of the ES with a transfer aimed specifically at water services O&M

This option has been mooted in recent years mainly through the argument for a separate maintenance grant to ensure that infrastructure which is funded through capital grants is properly maintained. It may have merit in that it could promote good practice with regard to maintenance. But, on the other hand, it will require a whole new monitoring system to make it work, it fragments the grant system and is a blunt tool to get municipalities to do what they are supposed to do anyway, i.e. operate and maintain infrastructure properly. Is it worth the change?

Differentiation relating to the ES

The ES formula provides for a revenue-raising adjustment which is currently being applied to reduce the per household allocations to municipalities with strong economic bases. This implies more money for economically weaker, mostly rural municipalities. Should this trend be continued?

7.3 Capital finance and structure of capital grants

More or less capital grant integration

It has been noted in the problem statement that there have been shifts between an integrated infrastructure grant, MIG specifically, and sector-based grants. The recent grant review has left water services-specific grants in place. The main argument for this is to give DWS more control over the way grants are spent in mostly rural areas, in 27 districts specifically.

The options are to continue with the current approach or move back towards a single integrated grant which could be designed separately for LW and DW category municipalities.

Direct vs indirect grants

There has been considerable contention over the relative merits of indirect grants which shift the control – and sometimes management – of projects to national government. One of the concerns is the ability of DWS to decide on the funding allocations and manage the way these

indirect grants are applied. It is generally accepted that there is a need for separate and indirect funding of regional infrastructure. But how far can this be stretched to apply to smaller scale infrastructure?

7.4 Distribution of capital grants

More or less emphasis on differentiation for capital grants

In the problem statement it is shown that there are, in effect, five different categories of municipality from the point of view of capital grant allocations. It is difficult to see the rationale for some of the divisions between what are referred to there as LW1 and LW2 municipalities. It is also interesting to note that this is a far cry from the situation in 2008 when all municipalities, from metros to rural municipalities, were treated equally under MIG policy and there were no other water sector grants other than a modestly applied RBIG.

While the separation of metros, and the proposal to bring secondary cities in line with metros, can be understood, and the separation of district and local WSAs may lead to the conclusion that differentiation is working, what about the situation in other local municipalities? Should there be a move towards a more rational approach?

Improving formula-based allocations

The international review indicated that formula-based allocations are widely applied, including in the case study countries of Mexico, Colombia and India. In fact, this is the international norm. But clearly the way the formula works is important. In South Africa. MIG is formula based and is considered largely equitable. However, the recent policy review did suggest that the formula should be amended to shift funds towards renewal of infrastructure. The direct component of WSIG is formula based, in principle, but in practice this does not seem to be the case, based on current allocations in the Division of Revenue Act (RSA, 2016). The RBIG is not formula based and the analysis done for this research project shows that it is inequitable, favouring larger schemes over smaller ones, even though their costs per household are similar.

There is an argument for reviewing the way these grants are allocated.

7.5 Capital grant conditionality

There are examples of countries with highly conditional grants, Brazil for example. In South Africa there have been substantial conditions attached to most grants, MIG included. But it

has been noted in the problem statement these conditions have been largely ineffective. What should be done? Continue with the same level of conditionality or add more conditions? Or accept fewer conditions and look for other ways to ensure that municipalities take good decisions regarding infrastructure projects?

7.6 Incentives and penalties

International experience shows the considerable benefit which penalties and incentives, particularly the latter, can bring. The national capital grants review and the MIG policy review have also resulted in recommendations to move in this direction with some quite detailed recommendations made as part of the MIG review. And incentives are being applied to city improvement grants in the metros. Why is this not a more immediate issue across the board in South Africa? One of the arguments is that the poorer municipalities are more likely to under-perform. But is this necessarily the case?

7.7 Capacity-building grant

Capacity-building grants are applied internationally, with examples of Mexico and India described in the literature review which is part of this study. It has also been argued in this report that capacity-building grants have the potential to bring big returns in relation to the amount of funding required. Yet experience tells that these grants only are effective if applied to a well-designed capacity-building programme. To some extent this is being initiated in South Africa through the recently launched MISA regional management support contracts. But is this enough, given the parlous state of infrastructure and service provision in some areas of the country, mostly in DW category municipalities?

It is proposed that the primary focus for mostly rural (DW) municipalities should be to continue with the regional management support contracts but to scale these up and look at interventions within MISA to get more technical capacity into the way this programme is managed. For more urban municipalities, the approach initiated by MISA in late 2015 for framework contracts to allow greater private sector engagement in providing infrastructure has merit. But this is outside the scope of a study on transfers.

7.8 Demand-management grant

Interestingly, having a separate grant for WCDM has not been raised as an option from the literature review and interviews. Yet it has been considered and DWS has promoted the idea in the past. There is already an energy demand-management grant which has been allocated to some municipalities. Give the high levels of non-revenue water in South Africa and the fact

that relatively small levels of expenditure can bring large reductions in new infrastructure requirements, should this not be given greater attention?

While SALGA think it is a good idea, NT does not, believing that this, again, funds what municipalities should be doing anyway and with plenty of incentive for municipalities to do it without a new grant. And there is an existing DBSA initiative which deals with conservation and demand management.

7.9 Transfers administration

The way transfers are administered currently has come in for a high degree of criticism by stakeholders. Options for making improvements have been identified, as part of this research and other initiatives, as follows:

a) Performance criteria and data management systems need to be improved, with the emphasis on rapid analysed feedback to municipalities. Data should be used to underpin the decision-making process.
b) Joint decision-making and information forums such as the MIG managers forum should also be encouraged. This will ensure all stakeholders receive communication on the progress of infrastructure development, as well as sharing of best practices and the manner in which obstacles can be overcome.
c) Inclusion of WSIG and RBIG projects within the MIG oversight system will allow for better coordination.

8 POLICY RECOMMENDATIONS

8.1 Understanding costs of infrastructure

a) A review of the FFC/SALGA report on costing of infrastructure is needed to assess its implications for the design of transfers.
b) Further work is needed to assess the difference in costs between regional and smaller local schemes.
c) Cost benchmarking for water and sanitation operating costs needs further attention in order to inform the design of transfers.

8.2 Structure of the fiscal framework

Overall, the fiscal framework is found to be sound. But some grants require attention and the general lack of incentives to promote efficiency and better performance is a concern. There is little support for a radical change to demand-side subsidies.

8.3 The ES and operating transfers

The local government ES

The ES system is sound in general, at least from the point of view of water services. But the way the ES is applied to different services within a municipality is concerning. A guideline on how to do this will be useful to municipalities and could build on previous WRC work.

Operating account funding gap

The conclusion is that there is no structural funding gap. Where it exists in particular municipalities the problem is typically a low level of fiscal effort resulting in revenue due to the municipality not being collected.

New subsidy for maintenance

The option of a separate operating and maintenance grant is not supported.

8.4 Capital finance and structure of grants

Capital funding gap

There is a serious funding gap with municipalities not having access to sufficient capital finance to cover provision of new infrastructure and renewal of existing infrastructure. But it is accepted that currently it is not possible to further increase the level of capital grant allocations to municipalities. Rather the emphasis in the medium term needs to be placed on other sources of funding (see 'co-funding' below).

Co-funding

The ability of municipalities to fund infrastructure through means other than transfers is a major concern. While it is outside the mandate of this research to make proposals on other funding sources, it is clear that means of improving credit ratings, more attention to PPPs, and improved applications of development charges all need attention.

Consolidation of grants or separate grants by sector?

While there is no universal preference for consolidated grants over separate sector-based grants, the experience in South Africa strongly favours consolidation. Recent evaluation of

MIG has generally been positive, for example. Therefore, it is proposed that over the coming years, WSIG and RBIG grants should be progressively reintegrated into MIG. If this means adapting the MIG formula, this can be done. However, it is recognised that there still needs to be separate funding for larger, truly regional water supply projects. Therefore, RBIG needs to be re-designed and, along with greater regionalisation of water boards, may be targeted at them. A motivation for this is that water boards can come up with co-funding.

8.5 Horizontal distribution of capital transfers

Differentiation on capital transfers

Differentiation has taken place firstly through the categorisation of municipalities into five groups: metros (A), secondary cities (B1), local municipality WSAs which are part of priority districts (LW1), other local municipality WSAs (LW2) and district WSAs (DW). While there are rational arguments for differentiating between A, B1, LW and DW WSAs, no rationale could be found for the splitting of local municipality WSAs between LW1 and LW2 which is related to the way the six priority districts which are not WSAs were identified. This appears to be relatively ad hoc. Policy on this must be clarified.

Improving formula-based allocations

MIG is distributed by formula. A recent review of MIG policy has assessed this formula and recommendations made in the policy review must be implemented.

WSIG is also allocated by formula to DW, LW1 municipalities and some others. The motivation for selecting the others is not clear. In distributing between DW and LW1 municipalities the formula is based on numbers of households with water and sanitation backlogs. A policy for WSIG, including the basis for distribution, could not be obtained. A policy needs to be provided and be subject to review.

Distributing RBIG funds

This research shows that there are important concerns around the way RBIG funds are distributed, and there are clear indications of lack of equity in the distribution. Further, RBIG by definition favours large schemes over small ones and this raises sustainability concerns. The policy needs to be reviewed taking equity and sustainability criteria into consideration.

8.6 Capital grant conditions

It has not been possible to assess all the conditions for all grants. However, it is evident from the research that conditions are often excessive and there is little means to ensure compliance. The conditions for the USDG and MIG have recently been assessed as part of an evaluation and policy review respectively. The recommendations there need to be implemented.

In the case of RBIG and WSIG, an assessment of performance criteria and associated conditions needs to be undertaken.

8.7 Incentives

There is widespread support for an incentive-based orientation of grants, both locally and internationally. Yet little has been done in South Africa outside the metros. However, there are policy initiatives; the MIG policy review makes detailed incentive proposals, although there is no intention from DCoG to implement these in the medium term, and FFC is working on a policy position on incentives. It is important for these policy positions to be moved into implementation.

8.8 Capacity-building grants

The best way of approaching the capacity problem in SA municipalities is to undertake a review of what has happened in the past and get buy-in at cabinet level to a large-scale initiative which is adequately backed with finance. In the interim, the shortcomings in the way the regional management support contracts are being rolled out by MISA must be assessed. The concept is based on an accepted business plan and needs high-level backing and funding.

8.9 Grants promoting sustainability

The limited assessment of the option of a WCDM grant undertaken for this research indicates that this does not have sufficient merit to be applied in the medium term.

ANNEXURE: INTERNATIONAL CASE STUDIES

A1 Mexico

<u>Introduction and Context</u>

The geographical and socio-economic variability across Mexico nationally, similarly to South Africa, presents a large challenge in redressing the mismatch of water availability and demand, with a range from abundant water resources in the low-density south east to large scarcity in

the arid and semi-arid zones of dense urban centres in the north of the country (OECD, 2012). Exacerbating the challenge is the extremely high level of water resource degradation, particularly within urban centres, posing large health risks to the urban indigent population who do not have adequate access to potable water supplies (OECD, 2012).

In response to these issues, Mexico has, since the early 1990s, embarked on a comprehensive and fundamental reform of the public water sector. This reform required the creation of a new legal framework, the restructuring of water administration systems, promotion of a multitude of autonomous and semi-autonomous water delivery institutions and the modification of incentive-based water demand management (WDM) to a variance of differentiated user groups (Shah et al, 2004).

In this regard, impressive progress has been achieved. Further reforms are in progress: in the implementation of agricultural irrigation management; the establishment of independent state and municipal water utilities in order to improve the delivery of water services across the country; the induction of flexible instruments to the regulatory environment which include resource and pollution fees as well as progressive water-pricing systems; and the adoption of a range of well-developed economic instruments to achieve resource management objectives (OECD, 2012). The result is one of the most comprehensively developed water systems in Latin America (Shah et al, 2004).

Decentralisation of Functions

Mexico employs a decentralised federal governance structure. Central to the reform process of Mexico's water sector has been the governmental decentralisation of water resource management powers and functions as well as the privatisation of management (Wilder & Linkao, 2006). Within the process of reform and decentralisation, inherently, the system, or at the very least the allocation, of financial transfers required a systemic revision. It is important, however, to note that the decentralisation of the water sector occurred in the wider context of general governmental decentralisation from a long history of entrenched centralised governance in Mexico (Tortajada, 2006).

The results of the decentralisation process, within the water sector, have however been ambiguous in some instances, with the reforms being both hailed as a move in the right direction by international lending and governance institutions and simultaneously criticised by academics and political observers (Wilder & Linkao, 2006; Tortajada, 2006; OECD, 2012).

Opponents contend that decentralisation is problematic because local governments lack the capacity and resources to be effective, with Rodriguez (1997) arguing that the early reform and devolution of functions provided mixed results mainly because the efforts to decentralise services were not accompanied by similar efforts to strengthen municipal capacity and ensure they had the ability to provide services. In this regard, the initial efforts at decentralisation shifted responsibility for water management from central government ministries to local-level agencies but did little to support local efforts.

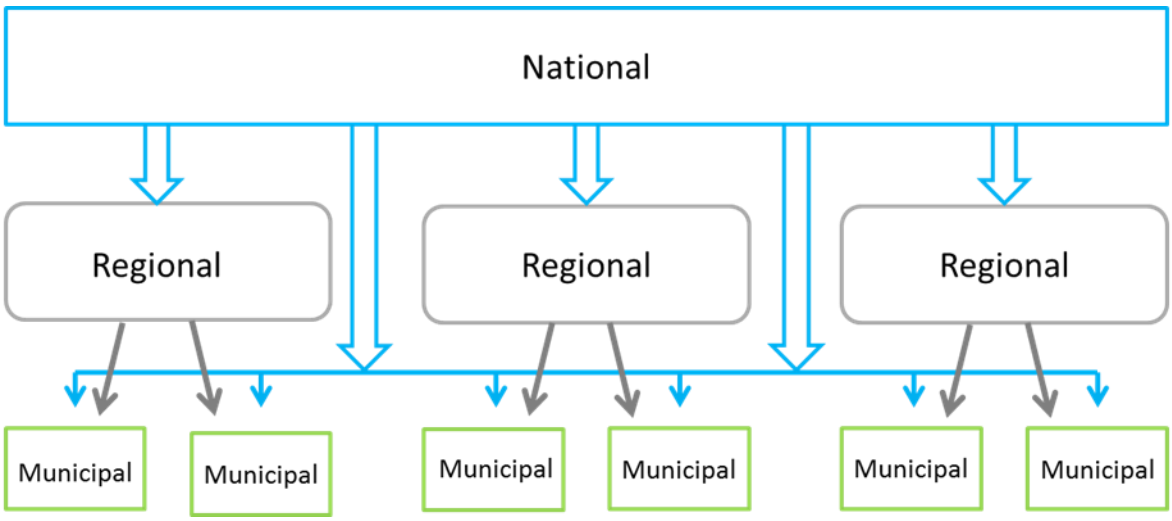
However, since then, Mexico has seen continued devolution of functions, particularly in the water sector, with decentralisation of services to nearly 2 500 local governments, while simultaneously centralising control of the sector under the jurisdiction of the National Water Commission (Comisión Nacional del Agua, hereafter, CNA), with the CNA working to shift services to local agencies and private sector operators. According to Cameron (2011), this was largely motivated by a desire to reduce the fiscal burden of water services on the central government and improve the sector as a whole. This was accompanied by increasing federal fiscal transfers to subnational spheres of government and encouraging subnational revenue generation; however, this increase was not coupled with the requisite capacity and incentives to exercise independent authority, according to Cameron (2011).

Transfers and Allocations

According to the World Bank (2004), federal subsidies for water projects (including both project financing through the CNA and conditional funding from the federal fiscal pact) accounted for 56% of investment financing in water supply and sanitation, and 22% of funding was contributed by housing developers. State governments contributed only 13% and municipal contribution made up a minuscule share. In contrast to what could be expected in a federal system, Mexico's federal government collects 95% of all revenue across revenue streams, which in turn are reallocated through national transfers (This can be contrasted with typical figures internationally of 60%) (Cameron, 2011). Therefore, both local governments and their constituent water agencies rely almost entirely on funding from the federal government's general allocations and specific water related programmes to support their activities. A large component of this is that municipal authorities determine the tariff rate and are responsible for collection. The Mexican average tariff per cubic metre (US$0.32) is about half of the average in Latin America and the Caribbean (US$0.65), and collection rates are estimated at only 73% of consumer bills, thus the revenue collected does not represent a large share of expenditure in the sector (World Bank, 2005).

Federal funds are transferred to the states (regional government) which in turn allocate the funds to local municipalities. However, despite having the responsibility of distribution, the state sphere is obliged by both federal and state fiscal coordination laws which establish formulas by which disbursement to local municipalities is allocated. Although this increases transparency and assists local-level forward planning through predictability of finance, it is also critiqued in that it reduces discretion on the part of the national government to incentivise or disincentivise decentralised spending behaviour.

The federal transfers to municipalities for service delivery in all sectors, that constitute the revenue sharing, are divided into unconditional and conditional transfers, which are further subdivided. The unconditional transfers are composed of two main revenue-sharing funds, the General Fund and the Municipal Development Fund, neither of which have restrictions on use. A portion of unconditional transfers is directly allocated to municipalities and earmarked for specific expenditures, and the balance is transferred to the regional state for downstream allocation. The unconditional funding allocation accounts for the majority of local resources, representing between 50 and 100% of municipal budgets, on aggregate (Cameron, 2011).



Broad Fiscal Transfer Arrangement for Mexico

The conditional transfers segment of funding is largely composed of funds for tasks that were originally a competency of the federal government but have been transferred in some manner to local levels of government and provide matching grants to finance public works. Within the conditional transfers is the most significant allocation for the water sector, the Fondo para la Infraestructura Social Municipal (FISM). The main purpose of FISM is to 'finance works for potable water, sewage, drainage and latrines, municipal urbanisation, electricity in rural areas, basic health and education infrastructure, improving the quality of life, rural roads, and

productive rural infrastructure' (Cameron, 2011:115). FAIS (of which FISM is a sub-fund) is set at 2.5% of the shareable federal revenue, and, of this, FISM makes up 87.9% of the fund, which goes directly to municipalities for the aforementioned infrastructure improvements.

The municipalities must specify their use of the FISM money in relation to 12 different categories, two of which are water and sanitation. States allocate the FISM funds based on a relative poverty index that builds on indicators for income, education, housing, sanitation, and electricity (Cameron, 2011).

In essence, the fund sharing model has created an environment in which states rely almost exclusively on the federal government for funds, and municipalities in turn rely on the state's allocation of federal funding for financial support. Furthermore, Cameron (2011:120) argues that the unconditional grant allocation is a good example of both the strengths and weaknesses of fiscal federalism and its relationship to decentralisation, in that 'they allow the government to redistribute funding across states to address needs and building in factors such as population and tax effort allows the government to address municipal variation and incentivise behaviour such as revenue generation'. While simultaneously 'funding has been decentralised in the sense that it is put in the hands of the local government to spend with minimal restrictions but authority over allocation still remains in the hands of, first, the federal government and then the states which essentially maintains the same line of authority that existed under the highly centralised government prior to its efforts to decentralise'.

Differentiation

In an effort to utilise a more transparent and predictable process that yields accountability, the transfer allocation system in Mexico has progressively been transformed to a formula-based system. The formulas used, although differing across transfer streams, and between federal level and state as well as inter-state, are largely based upon population size as the primary metric for differentiation. Beyond this, most states, although not obliged to, have chosen to use the same formulas that the federal government has established for distribution to states, which generally include poverty indicators.

Unlike the more formulaic distribution of unconditional funds, and the transparent process of transferring conditional funds to states according to the federal fiscal pact, CNA fund allocations are far more discretionary (Cameron, 2011). The budget for the CNA is allocated annually in the SEMARNAT (Mexico's environment and natural resources ministry) budget and flows to states in many different forms. Specific programmes distribute money to,

primarily, municipalities while some emphasise trans-boundary issues such as aquifer or river management. The budget is also allocated to 13 basin level offices and state CNA offices located throughout the country.

In this regard it is argued that a 'simultaneous (and contradictory) existence of water management decentralisation with centralised resource allocation' exists (Scott & Bannister, 2007). A further critique of the differentiation of transfers in Mexico is the lack of poverty targeting in any of the federal subsidy programmes for the water services sector, except for the rural WSS programme, PROSSAPYS, and FAIS. This lack of differentiation requirements according to the level of marginality/proverty makes it difficult for service providers in poorer municipalities to fully tap into federal funds (World Bank, 2004).

Capacity

Given how comprehensive decentralisation has been, and the relatively short period of time in which decentralisation of the water sector has occurred, adequate capacity at the municipal level for delivery has posed one of the primary challenges to the reform and the sector. In this regard, it is argued that an initial attempt at devolution of the sector in the early 1980s was primarily curtailed by the lack of adequate capacity at local government level.

In response to this earlier setback and continuous challenges in capacitation, the federal government has instituted variable related to capacity funding in three of the conditional grant allocations to local government levels. However only three such funds take capacity into account while the other funds use variables ranging from the population size of a region to public statistics to personnel needs, depending on the aim of the fund (Cameron, 2011). The other significant conditional fund related to institutional capacity building of municipalities in the area of water infrastructure, the Fund to Strengthen Municipalities, is distributed across states at the discretion of the national congress, based on population size. Given that these allocations directed specifically to capacity building are relatively minor in proportion to overall conditional and unconditional funding, in many cases the relatively less capacitated will not necessarily receive commensurate additional funding, particularly since unconditional allocations are 40% based on population size, and 50% of unconditional transfers (the bulk of municipal funding) are based on municipal revenue generation (Cameron, 2011).

Subsidies and Sustainability

Historically, the water sector in Mexico has been highly subsidised, both in terms of investment and operational funding. Traditionally, these subsidies are provided to agriculture and municipal water, while industry pays a higher contribution than other users, which creates cross subsidies for the financing of water services (World Bank, 2004).

However, in terms of resource sustainability, the primary challenge for the Mexican water authorities is to improve water productivity in agriculture, as this sector uses 77% of the 76 500 million cubic metres consumed annually in the country (14% goes to industry and 9% to private consumption). Mexico has 6.5 million hectares under irrigation (Zamosa-Signoret, 2007). In this regard, the traditionally high subsidisation of agricultural water activity has had a large impact on the sustainability of the resource.

In response to these challenges, reform of the sector by CNA, the sole federal authority in water management, prioritised the creation of transferable water rights and participation of the private sector, creating the possibility of granting water concessions to private companies. Additionally, CNA (now known as Conagua) implemented regulatory frameworks for the restriction of groundwater depletion by operationalising the authority to issue rights concessions to draw groundwater and by enforcing the concessions (OECD, 2012).

A2 Brazil

Introduction and Context

In terms of water resources, Brazil is renowned as one of the most water abundant countries internationally. However, adjacent to the water abundant Amazon River basin, the eastern Northeast Atlantic region is chronically afflicted by water shortages. Furthermore, the country has a variance of spatial socio-economic inequality.

Brazil has a tripartite federal system of governance, which is very decentralised by international standards, with local governments (municipalities) having ample administrative attributions, and revenues that correspond to 6% of GDP at their disposal (Mendes, 2005). Within the federal system Brazil is composed of 26 states and 5 570 municipalities. The country uses extensive intergovernmental transfers to finance its subnational governments. This share of subnational government spending in total government expenditures in Brazil is comparable with the OECD average and that of other large, decentralised federations, such

as the United States, Germany, India, the Russia Federation and Australia, but far exceeds that of most Latin American countries (Afonso & Mello, 2005).

Decentralisation and Reform

Democratisation in Brazil was followed by fiscal decentralisation that spanned from 1980 to 1994, whereby a large redistribution of government revenue allocation occurred. Parallel to the process of fiscal decentralisation was the decentralisation of public expenditure; however, there was an incommensurate devolution of roles and responsibilities to the local and regional levels of government (Politi & Matos, 2013).

However, since 1994, Brazil has been in a process of federative recentralisation with fiscal resources becoming increasingly concentrated within the federal government sphere (Soares & Neiva, 2012). Simultaneously, there has been an increase in the degree of freedom to spend fiscal resources at the federal level and an opposing process of increasing fiscal spending responsibilities at the subnational institutional level. This was further evident in the increasing trend of earmarking of revenues and implementation through national legislation relating to expenditure control and fiscal accountability by government entities. However, despite this, Brazil continues to have a strongly decentralised fiscal and governmental system.

Transfers and allocations

In Brazil, there are three main funding sources allocated to the regional state government: the Transferencias Voluntarias da Uniao (TVUs), revenue sharing, and mandatory federal transfers as laid out in the constitutional charter. Of these, the federal government transfers approximately 4% of GDP to the states and municipalities, and the states transfer approximately 2% of GDP to the municipalities in their jurisdictions. Within this, revenue sharing is the main source of funding at the municipal level; municipal revenues account for approximately 17% of total revenues. However, excluding revenue-sharing transfers from the states and the federal government, municipal revenues account for 5.5% of total revenues. Federal transfers to subnational governments account for approximately one-fifth of federal revenues and for 30% and 70% of total state and municipal spending, respectively (Afonso & Mello, 2000).

Given the reliance on revenue sharing and the high levels of economic inequality between states, tax collection across states is highly unequal, benefiting wealthier states. Therefore,

constitutional transfers have a markedly redistributive character, aimed at mitigating the impacts of Brazil's high level of socio-economic inequality (Soares & Neiva, 2012).

Of the fiscal transfer funding regime, the Municipal Participation Fund (MPF) constitutes the primary fiscal instrument to provide vertical transfers from central to municipal governments (Politi & Mattos, 2013). Due to the excessive earmarking of sharable revenues, the federal government has increased emphasis on mobilising revenues that are not earmarked for sharing with the states and municipalities. Of the MPF, 10% is transferred to state capitals while 84.6% is allocated directly to local municipalities.

The other major redistributive fiscal transfer in Brazil is the Federal Participation Fund (FPF) which is allocated from federal to state governments. This fund too has a largely redistributive character in that 85% of the resources are distributed to the states of the North, Northeast and Middle-East regions, which have a relatively far lower economic base, and 15% of the resources go to states in the Southeast and South regions, the economic hubs of the country.

The discretionary transfers, TVUs, on the other hand flow from the federal government to state government, with the federal government having full freedom to set the amounts and the geographic distribution of the fund, in addition to the public policies that will be targeted by the allocation (Soares & Neiva, 2012). These on average account for 9% of all constitutional transfers to states; however, it is apparent that the allocative rationale and how TVUs occur is not a transparent process, with no formula or specified distribution criteria (Soares & Neiva, 2012).

However, Brazil is quite distinct in that certain forms of value added tax are not collected by the federal authority of Brazil but rather by the state level of government, which can autonomously determine the fixed internal rate. This is known as the ICMS, and requires that 25% of the raised tax is transferred to local municipalities within the state and with no prescribed conditionality. The distribution of the ICMS transfer is determined by the derivation principle in that 75% of the transfer allocation must be given to the municipality in which it was collected (Mendes, 2005). This transfer also features as a large component of municipal funding and, as such, it is argued that the voter has bargaining power over this part of the ICMS transfer based on the derivation principle, because his/her moving to another municipality will cause a revenue loss by the local government (Mendes, 2005).

Differentiation

The transfer of the resources that compose the MPF is divided into three parts:

1. Of the total MPF, 10% is distributed to the state capitals in accordance with coefficients that take into consideration the size of the population and the inverse of the per capita income of the respective state.
2. Of the total MPF, 86.4% is distributed to rural municipalities, in accordance with coefficients defined by population range.
3. Of the total MPF, 3.6% is earmarked for the Reserve of the Municipalities Participation Fund that is distributed among the countryside municipalities with a coefficient of 4.0 (Gouvea et al, 2009).

Given this differentiation criteria in allocation, it has been shown that the MPF distribution has the unintended consequence that cities with small populations tend to receive a much larger MPF share per capita than the largest cities in the country.

According to a report by the OECD (2013:168), 'in 1989 the formula for distributing the participation funds was changed and lost its dynamic qualities, which used to ensure that the regions with the lowest tax-raising capacities were getting proportionally higher transfers. The system thus became close to a simple tax-sharing formula, where the allocation coefficient takes into account historical levels of tax-raising capacity. As a result, even if per capita shares of the State Participation Fund are greater for states in the North and Northeast, disparities in spending capacity between states are not fully eliminated. This means that states with very similar economic situations and initial spending capacity may end up with very different final revenues'. However, in order to counter this effect, 85% of the state participation fund (FPE) is transferred to the poorer states of the North, Northeast and Centre-West, with the more prosperous states in the South and Southeast relying to a much lesser extent on revenue sharing.

In the case of the ICMS tax and transfers, a number of unintended allocative distortions occurred, through what is known as the 'fiscal war' in Brazil. Given that states have autonomous powers in establishing the tax rate on goods and services (ICMS), it has been used as a fiscal tool for incentivising regional investment, with Brazilian states competing with each other in terms of taxation rates. However, this was exacerbated by the fact that Brazil has generally insufficient national industrial and regional policies (OECD, 2013) and therefore states that wanted to attract private investment had little option but to grant firms fiscal

incentives, which led to increased levels of tax competition among the states. This cycle further becomes self-perpetuating as in order to overcome their disadvantages in terms of general conditions, relatively poorer states would have to offer greater fiscal incentives than richer ones. But precisely because they are poorer and have more financial problems, they are unable to do so, reinforcing socio-economic spatial disparity in the country.

This created a scenario where all the states lose, as their fiscal incentives no longer influence where firms choose to locate, and, in addition, they forgo the revenues of the ICMS, which, given the significance of the fiscal transfer in meeting local government needs, impacted heavily on municipal financial viability. Furthermore, it is an example of how fiscal transfer dependence in a decentralised governmental system can have large impacts on local municipalities as the regional or national policy may advocate for a system unaligned to the best interests or requirements of local government.

Capacity-building Transfers

Although the bulk of transfers in Brazil are non-discretionary, resulting in the observed high level of fiscal decentralisation, in 2000, the increasing drive for fiscal discipline, particularly at subnational levels, resulted in the enactment of a law, known as the Fiscal Responsibility Law, which constrained expenditure on payroll. It set the subnational expenditure limits for payroll, in terms of net current revenue, at 50% for the federal government and 60% for states and municipalities. Failure to comply with these limits results in fiscal penalties. This however is not a conditionality of transfers but rather prescriptive for the totality of local government revenue. However, given the large share of which fiscal transfers contribute, it could be considered an indirect condition.

Further indirect capacity-related conditionality is is prevalent among the minor transfers, where minimum per capita spending levels form a key incentive in many programmes. Given the inherent capacity requirements in delivery and spending, it would likely act as an incentive in capacity building (Politi & Mattos, 2013).

However, despite these indirect measures, Afonso & Mello (2000) argue that because of significant disparities in institutional capacity at the subnational level, even in cases where expenditure mandates are clearly defined, the states, and sometimes the federal government, have been hesitant to devolve the relevant expenditure functions to lower tiers of governments for fear of disruption in service delivery. As such, there is clearly still a need for more direct

targeting of capacity-building conditionality in the intergovernmental fiscal transfer system of Brazil.

A3 Colombia

Introduction and Context

Colombia is often used as a comparator country for South Africa, as the two countries share a relatively similar population, GDP and Gini coefficient levels.

Colombia has undergone numerous water sector reforms, from centralisation in the 1950s, to decentralisation in the 1980s, to a new financing system in the late 1990s to early 2000s to finally the creation of a new ministry in 2006. The level of decentralisation has meant that there are increased levels of transfers from national government. In 2007, transfers accounted for 37% of all investment in WSS, tariffs accounted for 32% and the National Ministry of Water accounted for 16% of all expenditure. The national government component is not without its problems, though, as there are inefficiencies and a lack of coordination between the investments.

Most urban municipalities use municipally owned companies to provide water and sanitation services. These companies are funded largely by transfers from the municipality, who either use self-funding or a designated transfer from national government to fund this transfer.

Institutional Reform

For the past 15 years, Colombia has been engaged in a grand experiment in decentralisation. Since 1986, subnational government spending has increased dramatically, as the regions have assumed greater control of health and education programmes and other local services, and an increasing fraction of national revenues have been earmarked for transfer to lower-level governments.

Decentralisation has been envisioned in Colombia as a means to improve management and accountability in government, to encourage development of local fiscal resources, and to aid in targeting social expenditures to regions and individuals most in need.

As part of this decentralisation process, substantial fiscal transfer devolution has occurred with 40% of government revenues now earmarked for major subnational transfers. In this regard, the government of Colombia has been a pioneer in adopting sound water sector

decentralisation policies, too, with a focus on functional and fiscal devolution in the sector (World Bank, 2006). However, it is also argued by some critics that reforms in the decentralisation process have been pulling in two very different directions, with increases both in local spending powers and in oversight from the national government centre (Chaparro et al, 2003). Despite this assertion, the water sector has certainly seen substantial fiscal and functional devolution with the General Revenue-Sharing System 'Sistema General de Participaciones' (SGP), a tax-sharing system which determined the distribution of resources that the national government is required to transfer to municipal entities, of which part is allocated directly to the WSS sector. In this way, decentralisation of the responsibility of providing the population with access to services was accompanied by a significant increase in the resources assigned to the sector in the form of transfers (Andres et al, 2010).

Fiscal Transfers

Within the broader governmental decentralisation process, despite allocation of certain revenue generation capabilities to account for the decentralisation of responsibility, subnational government continues to have relatively low tax capacity and so fiscal transfers from central government are still heavily relied on to fill the resulting fiscal gaps. Currently, own-source revenues of municipalities finance on average less than half of total expenditures and the main source of the balance expenditure is sourced from central government direct transfers (Andres et al, 2010).

It has been argued that while fiscal transfers have become increasingly transparent and formula driven in recent years, the high level of dependence that most subnational governments have on transfers has the potential to reduce local fiscal effort, to distort spending priorities, and to undermine accountability of local officials for the fiscal consequences of their decisions (Chaparro et al, 2003). Historically, the primary source of fiscal transfers came from the central government through the Participaciones Municipales (PM) which was a revenue-sharing programme that assigned to municipalities a share of total current revenues of the national government. However, given the fluctuating transfers this system represented, in 2001, the revenue-sharing arrangement was converted to a block grant known as the General Shares System (SGP) that is scheduled to grow at a constant rate in real terms. This reform has the potential to stabilise the finances of the national government in the long run, though, over a shorter horizon, the poor performance of national revenues suggests that transfers will be higher under the new system than the previous one (Chaparro et al, 2003).

A further significant motivation for this change was the very large growth in total public expenditure, nearly doubling in the 1990s, and while the reforms induced a significant decentralisation of expenditure responsibilities, expenditures of the central government did not fall concomitantly. As such, transfers grew in real terms by more than 10% annually, due in part to the phase-in of revenue sharing, and in part to growth in national revenues. As the rapid growth of transfers in the 1990s was considered to be unsustainable, further reform was undertaken in 2001 to convert them to a block grant not linked to current revenues of the national government (Olivera et al, 2013).

Although the SGP block transfer accounts for the majority of municipal allocations from the national government, the resources available for investment in the WSS sector are spread across different sources and have increased significantly over the last 15 years (see table below) within the framework of the reforms. Annual resources are estimated to have quadrupled in real terms since 1993 and amounted to US$1 109 million in 2007, reflecting two central facts: (i) the strengthening of the sector's decentralisation, with the substantial increase in transfers from national level to municipalities; and (ii) the tariffs paid by users have become an important source of funds, as a result of the application of tariff methodologies which began in 1996 (Andres et al, 2003). The relatively new Planes Departamentales the (Departmental Plans for the WSS sector) have further increased expenditure and transfers significantly.

Annual Resources in WSS Sector by Source (2007)

Source	Annual Investment Resources (million dollars)	Sources Share (%)
Transfers (SGP)	412	37.2
Tariffs/ 1	358	32.3
MAVDT – Under Ministry of Water Supply and Sanitation/2	175	15.8
Direct royalties /3	100	9.0
Regional Autonomous Corporations/4	53	4.8
National Royalties Fund /5	10	0.9
Total	1,109	100.0

Differentiation

The allocation of fiscal transfers to local government in Colombia generally has strict conditionality on expenditure attached and a large share of the funds must be spent to satisfy

national mandates. This is partially due to the central government's reluctance to completely devolve decision-making functions to local government, according to Andres et al (2013).

Transfers under the SGP (the main block grant transfer) come with tight conditions imposed by the national government on how the funds are spent, and they are allocated among municipalities according to a complex formula. A notable feature of this system is that population receives a fairly small weight, so that transfers differ among municipalities in per capita terms far more than is common for major block grants in other countries. Instead, the Colombian system places far greater weight on the NBI index, which is intended as a measure of local poverty rates (Olivera et al, 2010). In fact, NBI is more a measure of urbanisation and development than of poverty, and it is based on many factors that are under the control of local governments, including the extent of health and local infrastructure. As such. it has been argued that the present transfer system is only very weakly related to measures of local fiscal capacity and fiscal needs (Andres et al, 2013).

The tight conditions on allocations are evident in that 75% of all SGP transfers are tied to spending requirements for health, education, and water and sewage projects. Conditionality of this sort is often criticised, as permitting local governments more discretion might allow spending to be targeted better to meet local needs. There is evidence that the conditionality constrains municipalities with relatively low fiscal capacity, as wealthier municipalities are able to reallocate their own-source revenues to undo the effects of conditionality. However, it is likely that this inequity is an unintended consequence of the current rules.

Water Sector-Targeted Transfers

In 2008, the central government implemented a further reform of the water sector aimed at incentivising greater private sector participation, attaining greater economies of scale and improving regional integration. This was largely done through the introduction of Planes Departamentales de Agua y Saneamiento (Departmental Plans for Water and Sanitation) with the goal of realising greater economies of scale and less fragmentation of resources.

Resources for the Planes Depatamentales are jointly contributed by the municipalities, the regional autonomous corporations, and the majority coming from the national government through SGP transfers. Once an agreement is signed between the Ministry of Environment, Housing and Territorial Development and municipalities, the funds are held within a trust fund, in distinct accounts, until they are assigned to a specific end purpose whereupon they are transferred directly to contractors or utilities (OECD, 2015). The key elements of this

framework are that: (i) the Department plays a greater role in managing an inter-institutional, regional approach to the provision of water and sanitation services; (ii) once committed to the agreement, funds cannot be withdrawn for other uses – critical for the long-term viability of service provision and investment, especially with changes in local political leadership; and (iii) funds are sent directly to the contractors for specific works rather than through the departmental or municipal governments (Andres et al, 2013).

SGP transfers from central government to municipalities are estimated to finance around 40% of the investment in water and sanitation, but deficiencies can be seen in their application (OECD, 2015). Among these are inefficiency and lack of coordination in comprehensive investment plans, partly because they are carried out directly by the municipalities even when there is an operator providing the service; the segmentation of the resources due to annual budget effectiveness, lack of dynamic access to credit and the capital market that generates scattered and incomplete investments, and finally, the mechanism for distribution to municipalities is not directly related with the sector's local needs and lacks an incentive scheme for the adequate use of resources and business transformation in service supply (Andres et al, 2013).

A4 India

Introduction and Context

The second largest population size globally, a rapidly growing economy and rapid urbanisation, coupled with dwindling sources of freshwater, have made management of the urban water supply one of the most important priorities in the development agenda of India (Hoque, 2012). As such, arguably the primary challenge to water sector finance and delivery in India is the levels of service required to meet the sheer scale of the population, particularly considering the rate of urbanisation.

Further, water utilities in India, which manifest in various forms as functions are devolved to local authorities, are grappling with the problem of poor and ageing infrastructure, high levels of unaccounted-for water, intermittent supplies, poor water quality and low tariff rates (Hoque, 2012).

The primary source of revenues for water utilities is through the collection of tariffs; however, these are rarely sufficient to meet operational and management expenses. Evidence of this is in the fact that only eight out of twenty large cities in India recover operations and management

costs through user fees for water and sanitation, and none are capable of recovering capital expenditure let alone depreciation (World Bank, 2014). Underinvestment and continued dependence on state and national transfers has therefore remained the norm.

Hence, faced with the challenge of financing water infrastructure development and eliminating the management deficiencies of water utilities, India has been actively reforming its water governance system since the 1990s through revision of its laws and policies. The financing of the gap is typically met by fiscal transfers from regional state government (Hoque, 2012).

Institutional Context for Water Delivery

India is a relatively centralised federal union with strong powers allocated to the central government. However, over the course of time, the centre–state balance has incrementally shifted towards greater decentralisation, with an increased role for the states and local authorities (Oxford Institute for Energy Studies (OIES), 2013).

Under the Indian Constitution, water is primarily a state function, and the federal union comes in only in the case of inter-state river waters. Hence, state governments have the primary responsibility for policy formulation, regulation, and execution of water sector projects. They may also endow such responsibilities on local self-governing authorities such as Panchayati Raj institutions, Urban Local Bodies (ULBs), or the city-level Water Supply and Sanitation Boards (Hoque, 2012). It is important to note that ULBs in India are the constitutionally provided administrative units that provide basic infrastructure and services in cities and towns.

Currently, there are three primary institutional set-ups engaged in the provision and delivery of water supply and sanitation services in India. In the first set-up, which is common in large urban cities and municipal corporations, the entire value chain of services of the water supply and sanitation sector is undertaken fully by one of the agencies, i.e. by the municipal government or by a parastatal agency or by the state government (Hoque, 2012). In the second set-up, as in the case of large metropolises, parastatal agencies at the state level or at the city level oversee the entire value chain of water supply and sewage services. In the third form of institutional arrangement, the activities of source development and capital investment for network development are managed by the state department, mostly the Public Health Engineering Department, while the management of the distribution network, O&M and revenue collection are overseen by the municipal government (Hoque, 2012).

Transfers and Allocations

Given India's complex institutional arrangement and allocation of responsibilities between the central government and the states, a system of federal fiscal transfers is necessary in order to address the vertical and horizontal inequality gaps.

Within this system there are three main flows of funds from the central government to the states in India (Herd & Leibfritz, 2008). Firstly, the Finance Commission recommends which proportions of the Unions should be transferred to the states. Second, the Planning Commission grants central assistance to projects or schemes. Third, the Planning Commission directly administers selected schemes of government expenditure (Bhatt & Scaramozzino, 2013). Sates subsequently have responsibility for allocating transfers to ULBs for infrastructure delivery.

In principle, the three main aims of intergovernmental fiscal transfers in India are:

1. closing vertical fiscal gaps;
2. equalisation and horizontal equity; and
3. correct spillovers across local jurisdictions. (Bhatt & Scaramozzino, 2013)

Differentiation

The Indian fiscal transfer system follows two routes. On the one hand, there are the statutory transfers based on a formula determined by the Indian Finance Commission, while on the other hand, there is the non-statutory Normal Central Assistance carried out under the so-called Gadgil formula (Aziz, 2010).

To promote balanced growth, some states with features such as hilly terrain, international borders, significant tribal population and low levels of infrastructural development were given the status of special category (SC) states while for the rest of the states, some criteria for devolution were chosen (Bhatt & Scaramozzino, 2013). About 30% of the funds are now reserved to the special category states, and the remaining 70% are allocated to the major states.

These non-statutory funds are allocated according to the 'Gadgil formula', which specifies that these funds must be allocated on the basis of a fixed number of indicators, with a given system of weights: population (60% weight), per capita income (25%), tax effort (2.5%), fiscal management (2%), fulfilment of national objectives such as population control and elimination

of illiteracy (3%), and special problems (7.5%) (Aziz, 2010). What is critical to note is that the needs-based parameters far outweigh the performance ones, and that the lion's share is an egalitarian per capita allocation.

In the case of non-statutory transfers, the economic rationale behind using population as one of the weights was that of a negative correlation that was observed between population and state per capita income. Similarly, to reduce regional inequality and to deal with bigger states getting more funds due to their bigger plans, state per capita income was also used a weight.

The non-plan transfers provided by the Finance Commission are also determined according to a set of rules, whose weights however differ from those in the Gadgil formula. Specifically, criteria used for tax devolution, with their respective weights, are population (10%), income (62.5%), area (7.5%), index of infrastructure (7.5%), tax effort (5%), and fiscal discipline (7.5%) (Bhatt & Scaramozzino, 2013). The economic rationale for these factors is similar to that of the Gadgil formula; however, the weight for state income is higher in the devolution formula. As such, estimates of the total resources of the centre and the states are made, on which a pattern for tax sharing is proposed. This is in response to the rationale that states with higher income have a wider tax base and need relatively lower fiscal transfer devolution from the centre.

The fiscal shortfalls for states that may occur between these two major transfers are covered by the Finance Commission through grants-in-aid. As such, states which exhibit higher levels of deficit are able to fund their fiscal imbalance through these transfers. This results in a 'gap-filling' role for fiscal transfers. However, it has been argued that such an accommodative transfer policy could create perverse incentives, undermining attempts by states to pursue fiscal discipline (Aziz, 2010).

Capacity

The federal union of India introduced a national policy that promotes the financing and management of rural drinking water and sanitation services at a decentralised level through local governments and communities. Within this, a number of programmes were created which receive direct fiscal transfers from the federal union to the district management level. This represented a stark reform from the centralised state water board's provision structure and thus required large-scale institutional change and devolution of functions (DFID, 2001).

As such, with an institutional change of that magnitude, a commensurate supplement of local capacity was required. Therefore, one third of fiscal transfers for supporting the new institutional structure were earmarked for capacity building of local government (DFID, 2001).

A5 Chile

Introduction

Chile is a unitary government system, in which the central government is ultimately supreme and any administrative divisions (subnational units) exercise only powers that their central government chooses to delegate. However, subnational governance structures do exist, consisting of 13 regions, 51 provinces and 350 municipalities or communes. Local government has little decision-making autonomy and is heavily dependent on government transfers (OECD, 2007). Consequently, local authorities generally do not have well-developed institutional capabilities and capacity. The provincial level of government has been largely an irrelevance over the years. It has been retained in the recent reforms with an appointed governor and an advisory council. However, it has neither significant powers nor any source of finance (Smart & Bird, 2001).

Water Sector Privatisation

Chile is the only country in Latin America to privatise its entire urban water supply and sanitation sector. In this regard, it is commonly referred to as a water privatisation success story due to its high coverage of drinking water and sanitation under a fully privatised system.

In Chile, the privatisation of public water companies led to increased tariffs. As a consequence, national debate arose on access to water services by the poorest. Before the privatisation, the necessity of a gradual increase in the tariff was recognised in order not to generate circumstances which could eventually complicate its implementation. With the aim of ensuring that all the population could have access to this basic service, the government and institutions related to sanitation designed a mechanism within the regulatory structure to protect the most vulnerable or poor households (Global Water Partnership, 2005).

It is critical to note, however, that access to services was almost universal before the complete privatisation, with nearly 100% of households connected to water and around 90% connected to sewerage prior to privatisation (Hearn & Donoso, 2005). As such, the need for subsidised infrastructure delivery was immensely reduced within the now privatized sector, thereby mitigating a large potential complexity in the sector.

It is further commonly perceived as one of the earliest and most well-developed institutional arrangements quite favourable for market-based water allocation, decentralised management, and private sector participation. A large component of this is the complete commodification of the resource, with water being considered, both legally and practically, a private property, independent of land, that can be traded, used as collateral, and treated as an asset for tax purposes (Hearn & Donoso, 2005).

However, given that the country still has a relatively high level of indigence and inequality, a solution was required, given the basic necessity status of water, for the provision of water to those who could not afford market-related rates. The solution was the implementation of a direct subsidy to consumers who were deemed eligible. This system will be unpacked further later in the paper.

Fiscal Transfers

Given the centralised nature of the Chilean governance system, vertical equity and differentiation of allocation of national transfers starkly contrasts with the other relatively decentralised country case studies.

As such, the role of fiscal transfers with regard to provincial governments relates to the design of the subnational units' own long-term development plans, which have to be compatible with the guidelines being given by the central government. From the view point of regions' fiscal autonomy, their most important function is the making of a ranking of feasible regional investments projects. This is assumed to capture local preferences as far as new public infrastructure is concerned. Selected projects are funded through various decentralised funds and transfers made available by the central government (Letelier, 2008).

Furthermore, Chilean municipalities are the only tier of subnational government that is allowed to tax its residents and charge for the services they provide. However, the autonomy to determine these rates is very limited and, furthermore, local government cannot raise loans of any form. Therefore, subnational government units are either entirely dependent on transfers, as in the case of regional authorities, or almost entirely dependent, as in the case of local municipalities.

Generally, local governments are allocated three types of grants via national transfers in Chile. The first type is those resources assigned to the funding of public school-level education and primary health, which have been known as 'delegated functions' since the fiscal

decentralisation process began. The second group is made up of a myriad of specific funds in relation to which municipalities have a rather limited degree of manoeuvre. They clearly fall into the general frame of categorical grants, being mostly assigned to 'social aid and local development'. The third group is that given by the central government to the regional level of government in the form of investment grants. Approximately 50% of these funds are non-conditional in the sense of being autonomously assigned by the regional governments (Letelier, 2008). In such central government transfers, grant assignments are based on a mixed approach; in one system, the number of beneficiaries per municipality is used to determine the fiscal transfer, and in the other, a number of special programmes intended to target specific local needs determines the fiscal transfer (Bird & Smart, 2001).

Chile also has a quite unique system for a developing country, although less unusual in developed nations, in that it uses a direct horizontal equalisation transfer system, whereby relatively wealthier local governments directly transfer resources to poor localities without directly affecting central revenues (Bird & Smart, 2001). In this regard, intergovernmental national transfers play a smaller role in vertical equity allocation. Given the above, it is evident, too, that differentiation of transfers to subnational governments is predominantly a project-based allocation tool and thus independent of formulaic and pre-established functionality criteria of expenditure.

End-user Water and Sanitation Subsidisation Transfers

In the privatised and commoditised water resource sector of Chile, given its private supply nature, fiscal transfers are associated not primarily with the provision of water and related infrastructure but rather with end-user subsidisation of eligible consumers.

As such, the government makes cash payments to the private utility provider against proof that a subsidy was provided to a specific consumer (Komives et al, 2005). Commonly, the challenge in such a system is that the business model carries a higher level of risk, given its dependence on government reimbursing subsidies. In the case of Chile, this is partially mitigated by allowing utilities to stop providing subsidies to consumers if the utilities are not adequately reimbursed by the government. Because such a move would be politically unpopular, this requirement provides strong incentives for government officials to ensure that it does not happen (Komives et al, 2005). Local government (municipalities) is responsible for this subsidy.

The grants to municipal governments in Chile for water and sanitation access by the poor cover from 25% to 85% (means tested) of a household's water and sanitation costs. This uses conditional output-based allocation processes which is a shining example of a fiscal transfer funded programme which balances equity with performance orientation according to Shah (2006). Means testing offers an alternative to geographic and categorical targeting. Means testing may be used in combination with quantity targeting or may be the sole basis for identifying subsidy beneficiaries.

In the case of water supply and sanitation, a burden limit of 5% of income has been adopted as a rule of thumb for assessing affordability in Chile and as a basis for defining the magnitude of transfers needed under its direct water subsidy programme (Khovides, 2005). This means that the instrument has considered the prevailing tariffs from water companies as well as the income of households to determine the different percentages of subsidy to be applied and further ensures that Chilean families do not spend more than 5% of their average monthly income on water supply and sanitation services.

The subsidy provides an allowance of the first 15 m^3 of water consumption, given in a percentage, which can vary between 25% and 85% depending on local tariff levels and the socio-economic level of the beneficiaries. The subsidy is applied to the fixed and variable charges for drinking water and sewerage (including wastewater sewage treatment where appropriate) (Hearn & Donoso, 2005). The subsidy is granted to the beneficiary for three years maximum, being possible to reapply as long as compliance with legal requirements is proved by the municipality.

The system of eligibility is further based on a number of criteria including that a household must not have any arrears with the water company (increasing the incentive for households to pay their bills), and it must be among the poorest 20% of households in the region, according to the means testing instrument used in the Chilean welfare system (Komives et al, 2005). This selection system has purportedly been established to adapt to specific socio-economic situational variance at the municipal level. It constitutes a method of socio-economic profiling which enables state social action to be targeted at the at the household poverty level. It is achieved by the so-called FPS (Social Protection Form). This form enables differentiation among the poorest households by assigning scores and is designed for an equitable distribution of the various subsidies granted by the government's social protection network.

The intention is for it to be used to identify social priorities, to select beneficiaries for the different social programmes, and for targeting of state subsidies. As such, it is argued that it

provides a large cost-saving technique in that the form system is used for all social and indigence state targeting, eliminating duplication of functions between departments and levels of government. As a result, the benefit incidence of the subsidy is highly progressive, with a relatively high targeting performance indicator, and, as such, households in Chile as a group receive more than 1.5 times as large a share of subsidy benefits as they would under a random allocation (Komives et al, 2005).

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