The state of basic service delivery in South Africa: In-depth analysis of the Community Survey 2016 data

Statistics South Africa

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Glossary of abbreviations

WC	Western Cape
EC	Eastern Cape
NC	Northern Cape
FS	Free State
KZN	KwaZulu-Natal
NW	North West
GP	Gauteng
MP	Mpumalanga
LP	Limpopo
RSA	South Africa

A	Metropolitan Municipality
B1	Secondary City
B2	Large Town
B3	Small Town
B4	Rural Municipality

AMEU	Association of Municipal Electricity Utilities (Southern Africa)
CS	Community Survey
DC	District council
DEA	Department of Environmental Affairs
DHS	Department of Human Settlements
DoE	Department of Energy
DPE	Department of Public Enterprises
DPME	Department of Planning, Monitoring and Evaluation
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EDI	Electricity Distribution Industry
FBE	Free Basic Electricity
FBS	Free Basic Services
FBSan	Free Basic Sanitation
FBW	Free Basic Water

GHS	General Household Survey
IDASA	Institute for Democracy in South Africa
JMP	Joint Monitoring Programme
LCS	Living Conditions Survey
LGES	Local Government Equitable Share
M	Metre
MDGs	Millennium Development Goals
MFMA	Municipal Financial Management Act
MIG	Municipal Infrastructure Grant
MIIF	Municipal Infrastructure Investment Framework
MTSF	Medium Term Strategic Framework
NDP	National Development Plan
NERSA	National Energy Regulator of South Africa
NPC	National Planning Commission
NT	National Treasury
OECD	Organisation for Economic Co-operation and Development
PFMA	Public Financial Management Act
PP	Percentage Point
RDP	Reconstruction and Development Programme
RHIG	Rural Household Infrastructure Grant
SALGA	South African Local Government Association
SAMPI	South African multidimensional Poverty Index
SDA	Service Delivery Agreement
SDGs	Sustainable Development Goals
SPII	Studies in Poverty and Inequality Institute
TBVC	Transkei, Bophuthatswana, Venda and Ciskei
UN	United Nations
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WSA	Water Services Act
WSA	Water Services Authorities

Glossary of concepts

Bucket sanitation system: Toilet system with a pail/bucket or other removable receptacle placed directly under the toilet seats, and where no water or chemicals is used.

District council: The local government for a **district**, which may be a town, part of a large city or part of a county. The members of a **district council** are elected for four years by the people living in the **district** and are responsible for local services such as local roads, buses, parks and libraries.

District municipality: Municipality that has a municipal executive and legislative authority in an area that includes more than one municipality, and which is described in section 155(1) of the Constitution as a category C municipality.

Drinking Water: Drinking water, also known as potable water or improved drinking water, is water that is safe to drink or to use for food preparation, without risk of health problems.

Formal dwelling: Structure built according to approved plans, i.e. house on a separate stand, flat or apartment, townhouse, room in backyard, rooms or flat let elsewhere.

Free basic electricity: Amount of electricity determined by government that should be provided free to poor households to meet basic needs.

Free basic services: Basic amount of a basket of four basic services: water, electricity, sewerage and sanitation, and refuse removal that poor households get for free.

Free basic water: Amount of water determined by government that should be provided free to poor households to meet basic needs, currently set at 6 kℓ per month per household within 200 metres from each dwelling.

Household: Person or group of persons who lived/stayed together sharing resources for an average of four nights per week for the past four weeks.

Improved sanitation: An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. It is not necessarily identical to sustainable sanitation.

Improved water: An improved drinking-water source is defined as one that, by nature of its construction or through active intervention, is likely to be protected from outside contamination, in particular from contamination with fecal matter.

Local municipality: Municipality that shares a municipal executive and legislative authority in its area with a district municipality within whose area it falls described in section 155(1) of the Constitution as a category B municipality.

Mains: General purpose Alternating Current (AC) electrical power supply.

Municipality: Area of jurisdiction of the third sphere of government, after national and provincial.

Piped water in dwelling or on site: Piped water inside the household‘s own dwelling or in their yard. It excludes water from a neighbour‘s tap or a public tap that is not on site.

Poverty Headcount (P0): Share of the population whose income or consumption is below the poverty line, that is, the share of the population that cannot meet its basic needs.

Rural area: Any area that is not classified as *urban*. Rural areas may comprise one or more of the following: tribal areas, commercial farms and informal settlements.

Safe water: Safe water means water that will not harm you if you come in contact with it. The most common use of this term applies to drinking water.

Sanitation: Principles and practices relating to the collection, removal or disposal of human excreta, household waste water and refuse, as they impact upon people and the environment.

The Local Government Equitable Share (LGES) – LGES is a lump sum of nationally raised revenues directed towards municipalities to deliver basic services, including a free basic water policy and sanitation to poor households. It also subsidises the cost of administration and other core services for those municipalities that have the least potential to cover these costs from their own revenues. Revenue that municipalities can raise themselves (including property rates and service charges) supplement the LGES. The size of the equitable share is determined by formulas that take into account demographic and developmental factors. Municipalities have considerable discretion over spending and allocation of the equitable share funds. However, this transfer usually comes with recommendations. This is an unconditional grant for which municipalities use their own discretion on how and where to spend it, including that at least 57% of the grant should be used for the provision of water (31%) and sanitation (26%).

Toilet: Installation for the disposal of human excreta.

Unimproved sanitation: Sanitation facilities that are not considered as "improved" (also called "unimproved") are: Public or shared latrine (meaning a toilet that is used by more than one household); Flush/pour flush to elsewhere (not into a pit, septic tank, or sewer); Pit latrine without slab; Bucket latrines.

Urban area: A continuously built-up area with characteristics such as type of economic activity and land use. Cities, towns, townships, suburbs, etc. are typical urban areas.

Waste management (refuse removal): Collection, treatment and disposal of waste.

Waste management (sewerage and sanitation): Sewerage system operations and waste water treatment.

Foreword

Municipalities are the most basic units of government in the country and are tasked with providing basic services and fostering development in the regions they control. Local government in South Africa is largely understood in terms of service delivery and the South African constitution (Act No. 108 of 1996) assigns municipalities the role to mobilise economic resources towards the improvement of the lives of all citizens. Basic services are the fundamental building blocks of improved quality of life, and adequate supplies of safe water and adequate sanitation are necessary for life, well-being and human dignity.

Tremendous progress has been made over the past few decades in the delivery of basic services. The Community Survey 2016 found that 89,8% of households used piped water, that 63,4% used flush toilets connected to either the public sewerage or to a local septic system, that 63,9% of households receive refuse removal services, and finally, that 87,6% of households had access to electricity. These headline figures, however, hide a lot of variation across provinces, district councils and between local municipalities. Households living in rural municipalities usually have access to far less, and usually also more inferior services to those living in wealthier, particularly more urban municipalities. Although the reasons for the existence of backlogs differ by service and between municipalities, part of the reason relate to the legacy of unequal development which still haunt former homeland areas, high levels of poverty that limit households' ability to pay for services, as well as the practical constraints of extending services to far off rural areas or densely populated informal areas at great expense to the local municipality.

Although certain 'gold' standards have been set for each service, such as the provision of flush toilets, the provision of running water in the dwelling, or weekly kerbside refuse removal, financial and practical constraints have forced municipalities to provide a variety of service levels in order to meet the very basic needs of residents. Since using a single measure of household access would hide the combination of measures used by municipalities, this report uses an index to explore the complex interchange between different service delivery measures in more detail. The report shows that households in rural municipalities generally have access to poorer service levels.

Although household perceptions of the services they receive vary greatly between municipalities, households in metropolitan municipalities are generally more satisfied than those in smaller municipalities, particularly rural municipalities. A simple correlation between municipal poverty headcounts and the available infrastructure shows a strong positive relationship. The relationship between household satisfaction with basic services and the quality of infrastructure can also be expressed as a strong positive correlation, meaning that poor households with inadequate access to services are most likely to be dissatisfied with those services. The report finally finds that 75% of households in South Africa did not belief that municipalities were actively addressing the issues they felt was most important for households in their respective municipalities.

Pali Lehohla
Statistician-General

1 Introduction

Municipalities are the most basic units of government, and they are tasked with providing basic services and fostering development in the regions they control. Local government in South Africa is largely understood in terms of service delivery and the South African constitution (Act No. 108 of 1996) assigns municipalities the role to mobilise economic resources towards the improvement of the lives of all citizens. Basic services are the fundamental building blocks of improved quality of life, and adequate supplies of safe water and adequate sanitation are necessary for life, well-being and human dignity. The accessibility of basic services is closely related to social inclusion and social capital, and the failure of municipalities to deliver services can have a detrimental impact on social and economic development (IDASA, 2010).

2 Objectives of this report

Although the country has made great progress since 1994 to improve the quality of life of South African residents by extending basic services to previously un- and under-serviced households, particularly in rural and informal areas, the expansion of services was often done at the expense of existing services. Many municipalities simply did not have the resources to drive expansion of services while maintaining the existing infrastructure (Van der Walt & Haarhoff, 2004). This is particularly true in cases where more expensive high quality services (such as water borne sanitation instead of VIPs), and services in relatively far-flung rural areas were installed. Service delivery therefore needs to be evaluated in terms of the quality of infrastructure, the effective functioning of the service, and the accessibility thereof. These factors have a definite effect on the satisfaction of customers who use the municipal services.

The report provides a:

- Descriptive analysis of basic service delivery (water, sanitation, electricity, refuse removal) in provinces and local municipalities
- List of Service Delivery indicators used to assess municipal service delivery using the results of Community Survey 2016
- Survey of perceptions of service delivery across municipalities

3 Local municipalities and the delivery of basic services

South Africa is a constitutional democracy with a three tiered system of government (national, provincial and local) that functions in an ‘interdependent and interrelated’ fashion. Local municipalities, as the lowest tier, have the right to govern the affairs of local communities subject to provincial and national legislation. The boundaries of local and district municipalities are determined by the Municipal Demarcation Board which was set up by the Municipal Demarcation Act (Act No. 27 of 1998). The demarcation process takes into account the demographic, social and economic characteristics of areas as well as linkages between constituent units to create boundaries that facilitate development planning. The boundaries are continually reassessed and neither the historical boundaries, nor the number of demarcated municipalities stay constant over time as areas are amalgamated or split. A total of 286 municipalities existed when the Community Survey 2016 was conducted.

Chapter 7 of the constitution divides the local sphere of government into three categories, namely metropolitan (Category A), district (Category C) and local municipalities (Category B). Metropolitan municipalities are located in large, densely populated areas, with strong, complex and diverse economies, and municipalities have exclusive municipal executive and legislative authority in their respective areas. By contrast, district municipalities are predominantly located in much poorer, sparsely

populated rural areas. The district municipalities are tasked with the responsibility to coordinate with other spheres of government and with planning and resource allocation across their constituent local municipalities. Local municipalities (Category B) share municipal executive and legislative authority in its area with the Category C municipality within whose area it falls. The distribution of municipalities by province is presented in Table 3.1

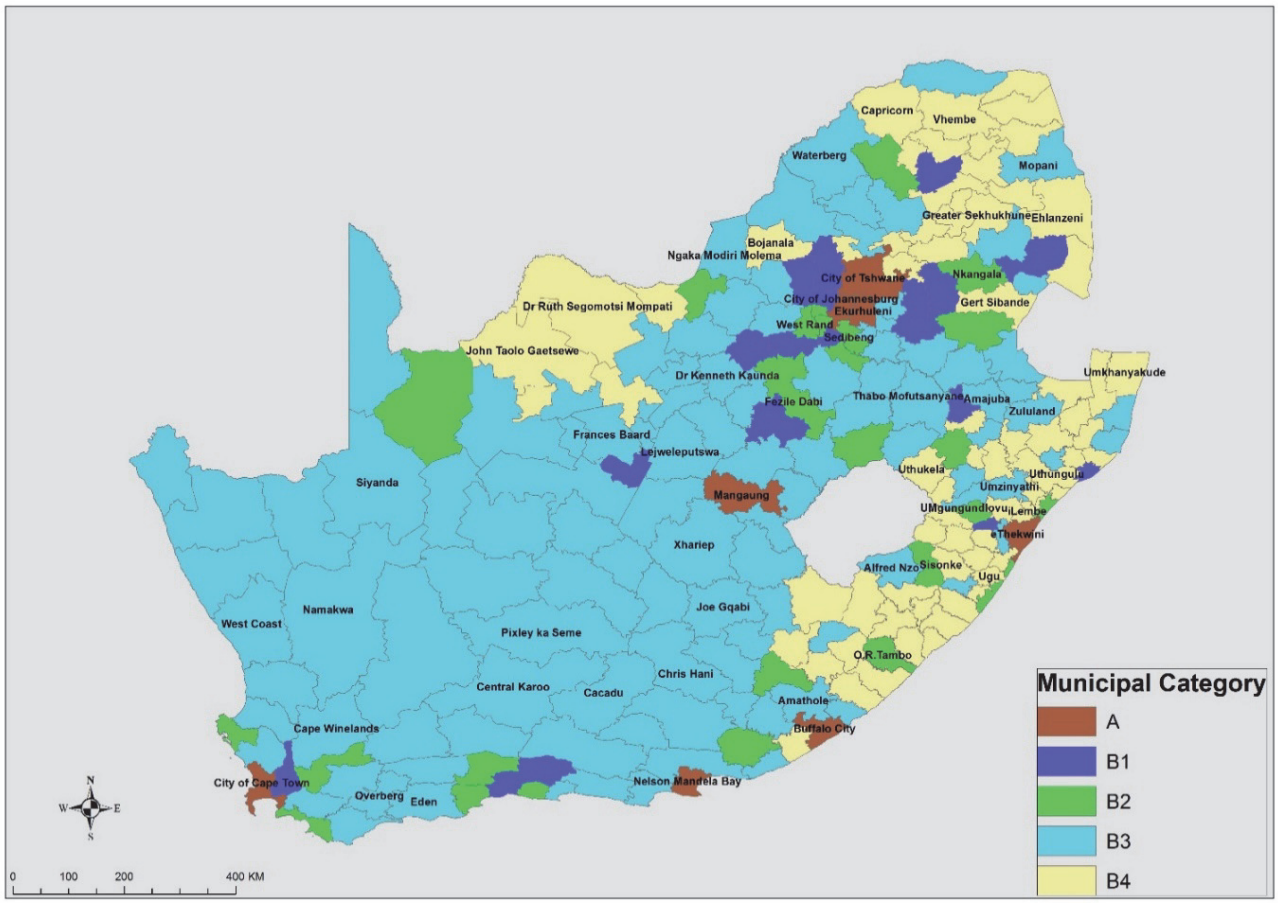
Table 3.1: Distribution of municipalities by category and province, 2016

Province	Metro	District Municipality			Local Municipality				
Category	**A**	**C**	**C1**	**C2**	**B**	**B1**	**B2**	**B3**	**B4**
Western Cape	**1**	**5**	5		**24**	3	6	15	
Eastern Cape	**2**	**6**	1	5	**37**		3	19	15
Northern Cape		**5**	5		**27**	1	1	23	2
Free State	**1**	**4**	4		**19**	1	3	15	
KwaZulu-Natal	**1**	**10**		10	**50**	3	6	12	29
North West		**4**	2	2	**19**	4	1	9	5
Gauteng	**3**	**2**	2		**7**	2	4	1	
Mpumalanga		**3**	3		**18**	4	2	7	5
Limpopo		**5**	1	4	**25**	1	1	7	16
Total	**8**	**44**	**23**	**21**	**226**	**19**	**27**	**108**	**72**

The Municipal Infrastructure Investment Framework (MIIF) classifies local municipalities into 4 sub-categories, namely B1, B2, B3 and B4. The B1 category comprises secondary cities and local municipalities with the largest budgets; the B2 category refers to local municipalities with a large town as its core; the B3 category defines local municipalities with small towns, with relatively small populations and significant proportions of urban population but with no large town at its core. Finally, the B4 category is made up of local municipalities which are mainly rural with communal tenure and with, at most, one or two small towns in their area. In addition, the MIIF classifies district municipalities into 2 categories, namely C1 which refers to district municipalities that are not water services authorities, and C2 which defines district municipalities that are water services authorities (Municipal Demarcation Board, 2012).

In order to aid comprehension, the municipal classification codes that are outlined above are used interchangeably with short descriptive names. Category A is referred to as a metro, B1 as a secondary city, B2 as a large town, B3 as a small town, and B4 as a rural municipality.

Map 3.1: Distribution of Category A and B municipalities, 2016



The geographical distribution of municipalities according to their particular sub-categories are presented in Map 3.1. The map clearly illustrates the wide distribution of B3 municipalities with small towns. Although significant proportions of their population live in urban areas, they generally contain small populations and small towns. B1 and B2 municipalities that contain larger populations and are anchored by larger towns are spread across the country. These municipalities comprise towns such as George, Newcastle, Richards Bay, Kimberley, Mbombela and Polokwane. The poorest municipalities, B4 municipalities, span the traditional areas that contain the former homelands along the Eastern seaboard, the North-Eastern part of the Mpumalanga and Limpopo, and the north-western edge of the North West province.

3.1 Municipal services

The South African Constitution (Act No. 108 of 1996) instructs government to implement the Bill of Rights to, inter alia, enhance 'human dignity, the achievement of equality and the advancement of human rights and freedoms'. A number of ‘socio-economic’ or ‘second generation rights’, including the right to ‘have access to sufficient water' and ‘*an environment that is not harmful to their health or well-being’* are prescribed by the constitution. Local government is the sphere of government closest to people and is tasked with the development and provision of municipal goods, benefits, activities and satisfactions that are deemed public, to enhance the quality of life in local jurisdictions (Reddy, 2016). Providing sustainable and effective municipal services to local residents is the main reason for the existence of local governments, and local governments are directed to provide water, sanitation, transportation facilities, electricity, primary health services, education, housing and security within a safe and healthy environment to all residents, provided that its provision is practical and sustainable.

The constitution does not go into great detail about the services that municipalities should provide, except to mention that services should be provided in a sustainable manner, and that socio-economic development should be pursued. The Municipal Systems Act (No.32 of 2000 as amended) determines specific duties and requirements for all municipalities which include: giving priority to the needs of the local community; promoting the development of the local community; and ensuring that all members of the local community have access to at least the minimum level of basic services.

Since Municipal services are not absolutely defined, the constitution – together with new laws (municipal systems and structures acts) – determine what should be regarded as basic municipal services (Bekink, B. 2006). Section 73 of the System's Act defines a 'basic municipal service' as a municipal service that 'is necessary to ensure an acceptable and reasonable quality of life and, if not provided, would endanger public health, safety, or the environment'. This is still rather open-ended and an exact determination of what should be regarded as a basic municipal service will have to be determined on a case-to-case basis (Bekink, 2006). This study will only look at four basic services, namely water, sanitation, refuse disposal, and electricity.

According to the White Paper on Local Government (1998), municipalities should conform to certain basic principles in terms of the services they deliver. Municipal services should be:

- accessible and communities should have access to at least a minimum level of services as a constitutional obligation;
- easy and convenient to use;
- as affordable as possible; and
- of a predetermined standard, meaning that services should be suitable for their purpose, be timeously provided, be safe and be available on a continuous basis.

These criteria are used by municipalities to determine the most appropriate service delivery options, and to select appropriate delivery mechanisms. A municipality's ability to provide basic services is determined by the factors such as the size, growth and distribution of households, as well as attributes such as relative poverty, which influences the ability to pay for services.

3.2 Household distribution in South Africa

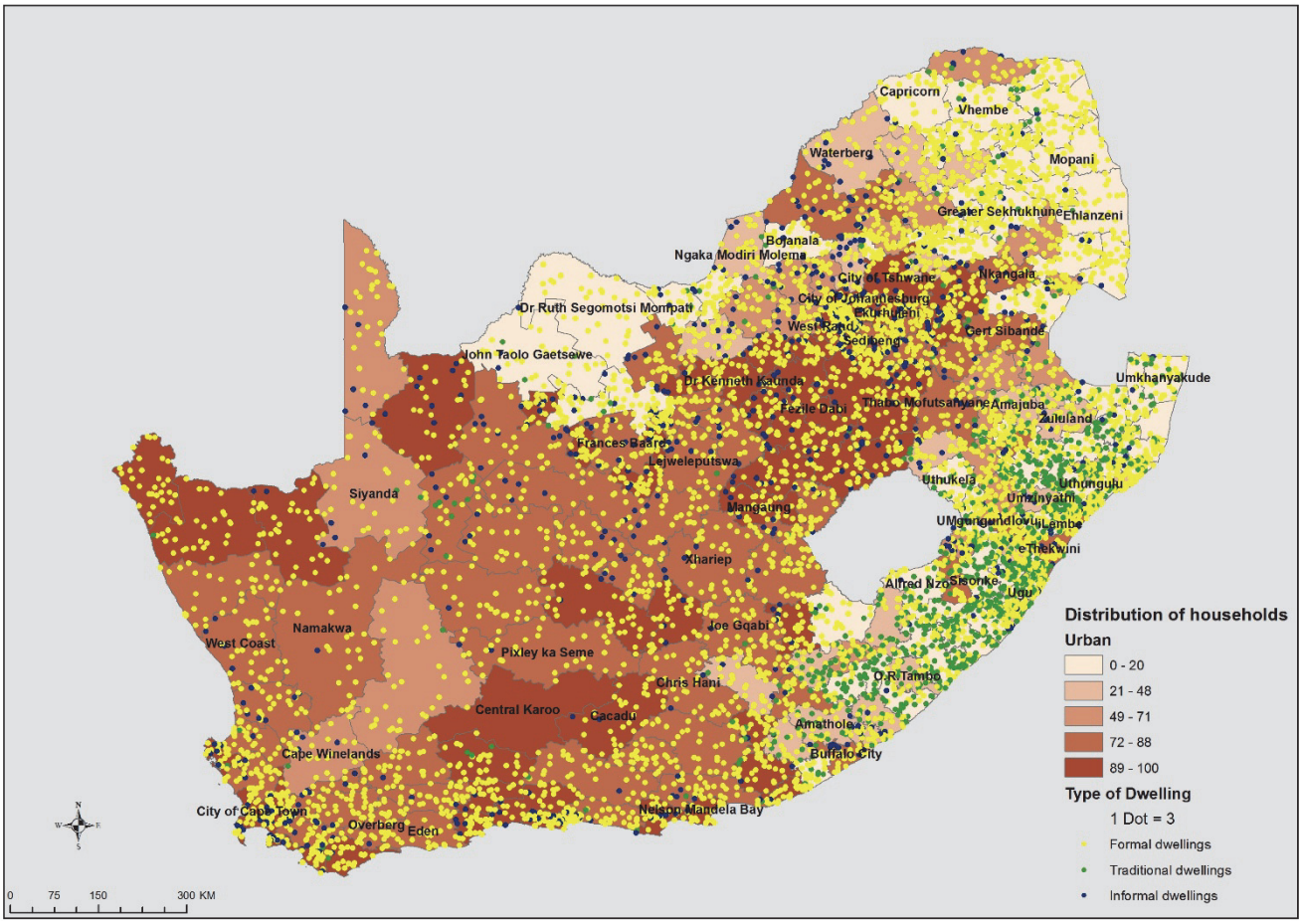
Basic services are not delivered to individuals, but to groups of people who live together and who share resources as households. Households can consist of one or more individuals and is the unit that is most relevant to service providers.

Table 3.2: Distribution of households per province, 2011 and 2016

Province	2011		2016	
	Households	% distribution	Households	% distribution
Western Cape	1 634 000	11,3	1 933 876	11,4
Eastern Cape	1 687 385	11,7	1 773 395	10,5
Northern Cape	301 405	2,1	353 709	2,1
Free State	823 316	5,7	946 639	5,6
KwaZulu-Natal	2 539 429	17,6	2 875 843	17,0
North West	1 062 015	7,3	1 248 766	7,4
Gauteng	3 909 022	27,1	4 951 137	29,3
Mpumalanga	1 075 488	7,4	1 238 861	7,3
Limpopo	1 418 102	9,8	1 601 083	9,5
South Africa	**14 450 162**	**100**	**16 923 309**	**100**

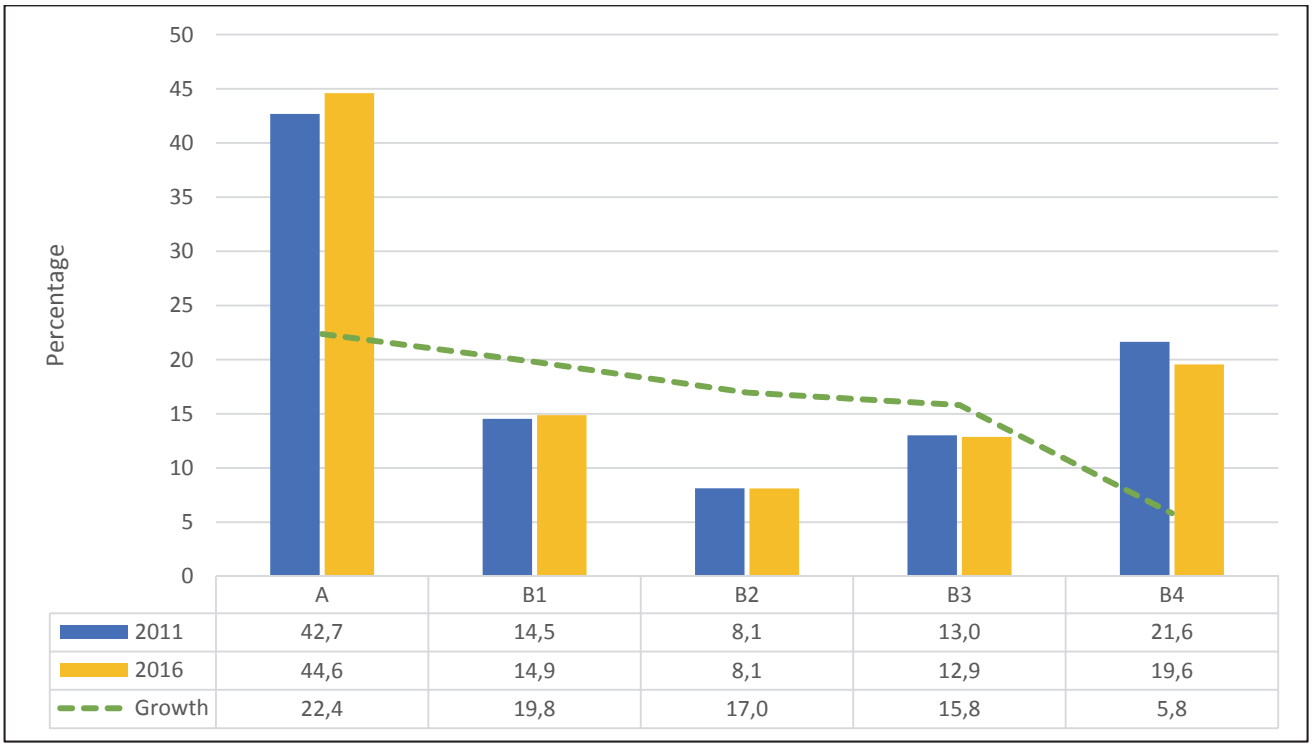
The distribution of households in 2011 and 2016 by province is presented in Table 3.2. Nationally, the total number of households increased from 14,5 million in 2011 to an estimated 16,9 million in 2016. Gauteng (29,3%) and KwaZulu-Natal (17,0%) contained the highest number of households in 2016, while the smallest number of households was observed in Northern Cape (2,1%) and Free State (5,6%). It is notable that only Western Cape (+0,1 pp) and Gauteng (+2,2 pp) increased its respective shares of all households between 2011 and 2016. This can probably be ascribed to high levels of in-migration into the large metropolitan areas in the two provinces.

Map 3.2: Household distribution by urban concentration and dwelling type, 2016



Map 3.2 shows that the vast majority of South African households reside in formal dwellings across the country. The high incidence of poverty is exposed by the large number of informal dwellings that are distributed across the country, covering virtually every single municipality but showing a higher concentration in the metropolitan areas and secondary cities. Households that lived in traditional dwellings were mainly observed in traditional areas along the Eastern seaboard, although some distributions were also observed across the Northern provinces and Northern Cape. The map also shows that the percentage of households in urban areas were relatively low in traditional areas.

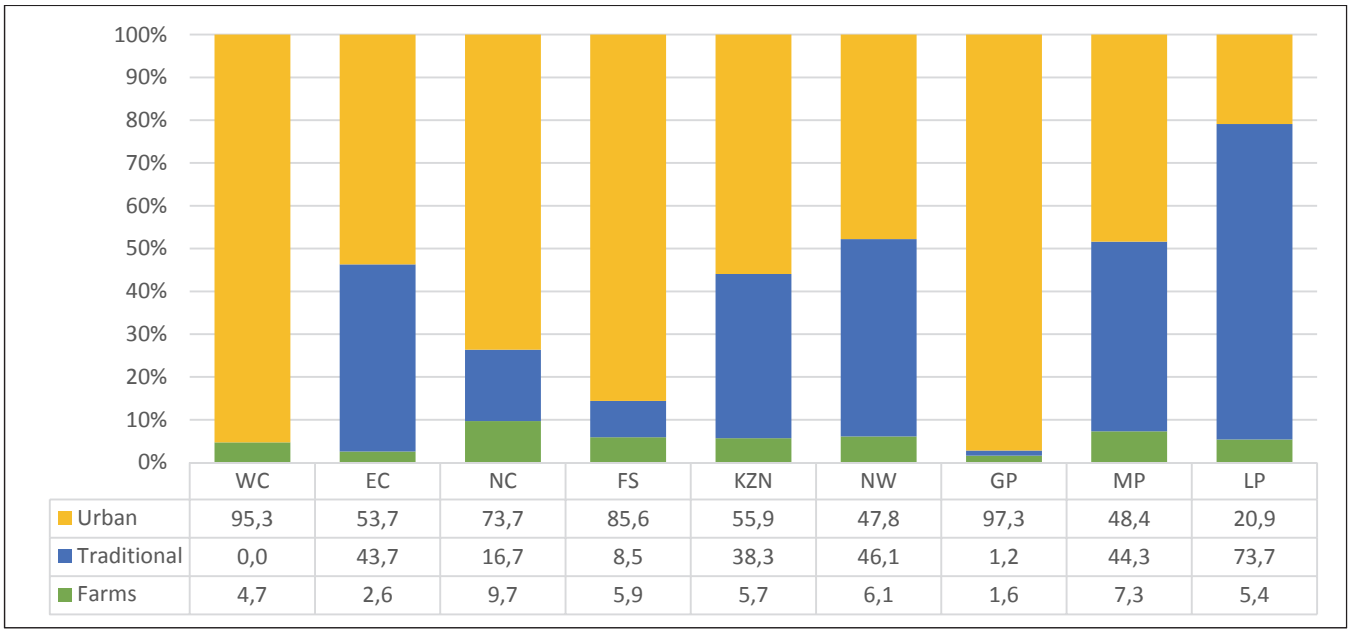
Figure 3.1: Percentage distribution and growth of households by municipal category, 2011–2016



	A	B1	B2	B3	B4
2011	42,7	14,5	8,1	13,0	21,6
2016	44,6	14,9	8,1	12,9	19,6
Growth	22,4	19,8	17,0	15,8	5,8

The share of all households by municipal category is presented in Figure 3.1. The figure shows that more than four-tenths of all households were located in the eight metropolitan municipalities, followed by about one-fifth (19,6%) in the largely rural B4 municipalities. B2 municipalities that contain large towns at its core had the lowest share (8,1%) of all households. It is notable that municipalities that contain metros and large secondary towns increased their share of all households at the expense of smaller, more rural municipalities. This is confirmed by the observation that category A (22,4%) and B1 (19,8%) municipalities grew much faster between 2011 and 2016 than B3 (15,8%) and B4 (5,8%) municipalities. A look at individual municipalities shows a decline of at least 10% between 2011 and 2016 for seven B3 and B4 municipalities in KwaZulu-Natal and Eastern Cape. On the opposite end of the spectrum, large period percentage increases are observed in some smaller B3 and B4 municipalities.

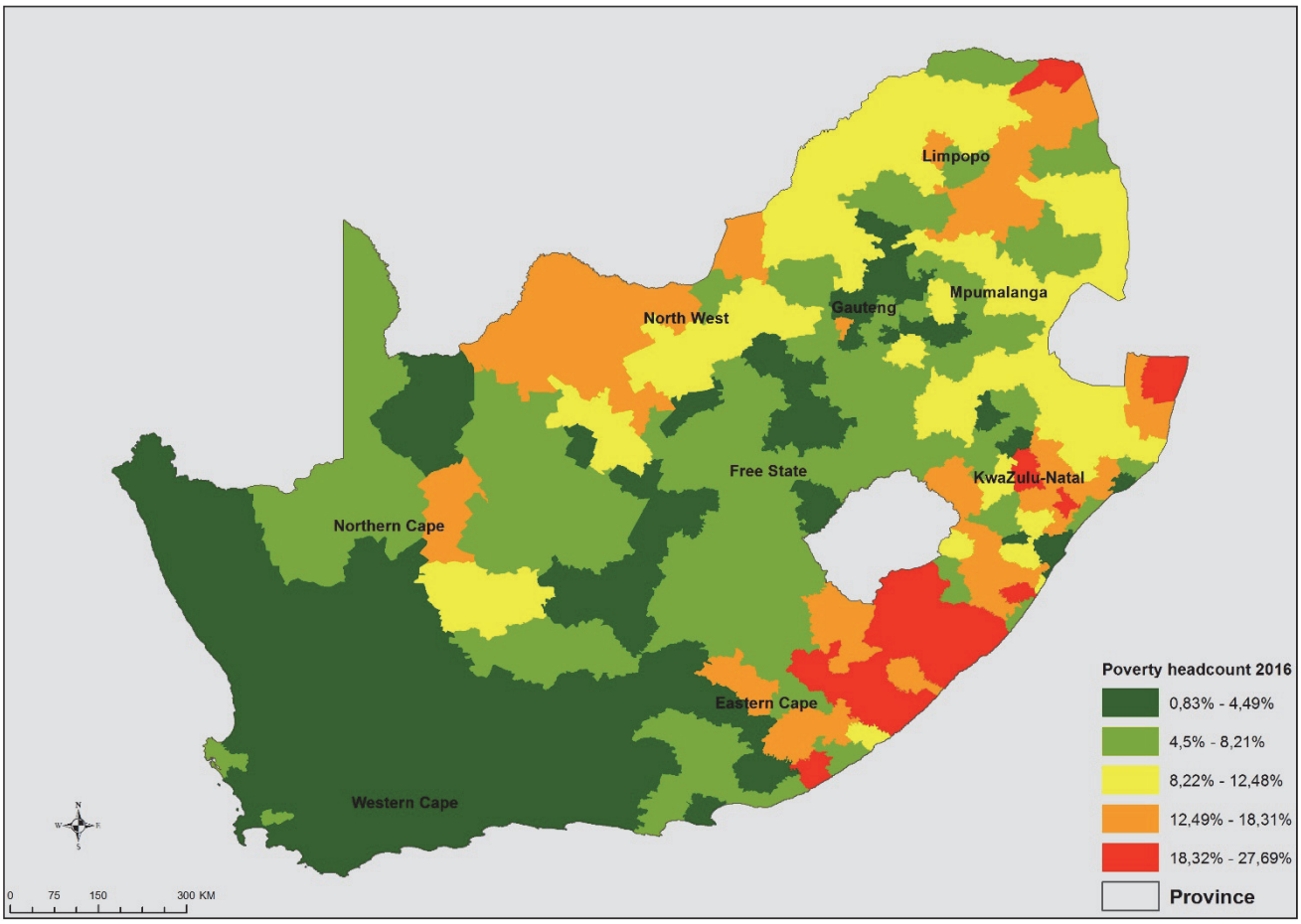
Figure 3.2: Household distribution across geotypes by province, 2016



	WC	EC	NC	FS	KZN	NW	GP	MP	LP
Urban	95,3	53,7	73,7	85,6	55,9	47,8	97,3	48,4	20,9
Traditional	0,0	43,7	16,7	8,5	38,3	46,1	1,2	44,3	73,7
Farms	4,7	2,6	9,7	5,9	5,7	6,1	1,6	7,3	5,4

Figure 3.2 shows that the vast majority of households in Gauteng and Western Cape live in urban areas. By contrast, only 20,9% of households in Limpopo, and 47,8% of households in North West resided in urban areas. Almost three-quarters (73,7%) of households lived in traditional areas in Limpopo. While virtually all households in the City of Cape Town (99,6%), Ekurhuleni (99,7%) and the City of Johannesburg (99,8%) resided in urban areas, less than 2% of households in Msinga (1,1%), Port St Johns (1,6%) and Greater Taung (1,8%) did so. The vast majority all households in Aganang (99,7%), Umzumbe (99,7%), Umhlabuyalingana (99,8%), Fetakgomo (99,9%), Maphumulo and Makhuduthamaga (both 100%) lived in traditional areas. The highest concentration of households living on farms was observed in Emadlangeni (61,5%), Umzimkhulu (45,6%) and Ventersdorp (45,3%). Very few households resided on farms in metropolitan areas and in rural metros with large traditional areas (B4 municipalities).

Map 3.3: Percentage of households living in poverty according to SAMPI by local municipality, 2016



The demand for, and ability of municipalities to provide basic services are also influenced by income distribution of households. Whereas poor municipalities are generally forced to confront large service delivery backlogs with limited financial and human resources, wealthier municipalities often cross-subsidise services to poor households. Map 3.3 shows that the poorest households, using the SAMPI poverty headcount measure, were observed in B4 municipalities comprising mostly rural areas. The highest poverty headcount rates were calculated for Intsika Yethu (27,7%), Msinga (24,5%), Umzimvubu (24,2%), Port St Johns (23,4%), Engcobo, Ntabankulu (both 23,3%), and Mbizana (22,8%). Poverty is important as it contextualises the ability of residents to pay for services, and the ability of municipalities to deliver those services.

4 Methodology

4.1 Data sources

This study predominantly utilises data from the Community Survey 2016 to study the delivery of basic serves at local municipal level. Data from Census 2011 are used to study municipal changes between 2011 and 2016. The report also uses, on a much more limited scale, data from the Income and Expenditure Surveys, Living Conditions Surveys as well as data from the Non-financial census of municipalities.

4.2 Service delivery indices

Composite indices combine a variety of indicators into a single index that produce a useful statistical measure of performance over space. A composite index is created by first creating an index for each dimension before the composite index is created as a simple average of the three dimensions.

In this report, three dimensional indices, based on a methodology utilised by Van der Walt and Haarhoff (2004), are created to inform the composite index. These indices are the infrastructure quality index, the infrastructure efficiency index, and the accessibility index. Indices are discussed below.

4.2.1 Infrastructure quality index

This index is used to describe the available engineering services infrastructure with reference to the available level of service. Following the World Bank studies described in Van der Walt and Haarhoff (2004) the classification of levels of service was kept as simple as possible. The classifications are described in Table 4.1.

Table 4.1: Classification of infrastructure quality

Service level	Water	Sanitation	Solid waste	Electricity
1 = None	No access to piped water	No sanitation	No facilities / dump anywhere	No access to electricity
2 = Minimal	Communal standpipe > 200m	Bucket toilets	Communal / own refuse dump	Generator / solar
3 = Basic	Communal standpipe < 200m	Pit toilet without ventilation pipe	Communal container /collection point	Access to electricity don't pay for
4 = Intermediate	Piped water in the yard	VIP, Chemical or ecological toilets	Removed less than once per week	Connected to source and paid for
5=Full	Piped water in dwelling	Conventional water-borne	Removed once per week	In-house pre- and post-paid meters

Table 4.2: Average service level calculation

Service quality	Number of users	Value	Index calculation
None	N_{None}	1	$I_{none} = N_{none} \times 1 / N_{tot}$
Minimal	N_{min}	2	$I_{min} = N_{min} \times 2 / N_{tot}$
Basic	N_{bas}	3	$I_{bas} = N_{bas} \times 3 / N_{tot}$
Intermediate	N_{int}	4	$I_{int} = N_{int} \times 4 / N_{tot}$
Full	N_{full}	5	$I_{full} = N_{full} \times 5 / N_{tot}$
Total	$\mathbf{N_{total}}$		$\mathbf{I = i_{none} + i_{min} + i_{bas} + i_{int} + i_{full}}$

Source: Van der Walt & Haarhoff, 2004.

The quality of infrastructure services is categorised according to five levels, namely none, minimal, basic, intermediate and full, and values of 1-5 are assigned to these levels. The level of service is calculated as the average of the percentage of the population receiving the service and it is expressed as a number between 1 and 5. The index therefore provides an indication of the quality of infrastructure provided. The calculation is outlined in Table 4.2.

4.2.2 Infrastructure reliability index

The water services reliability index is described in Table 4.3.

Table 4.3: Key performance indicators for the Reliability index

Service reliability	Water services
1 = Non-functional	More than 14 days in total over a three month period
2 = Major problems	8–14 days over a three-month period
3 = Significant problems	2–7 days over a three-month period
4 = Minor problems	Less than 2 days over a three-month period
5 = No problems	No interruptions

The index provides a measure of the efficiency with which the infrastructure is maintained. As with the quality index, the values of 1-5 are assigned to each category depending on the service reliability. The level of reliability is classified based on categories used in questions for water in the CS 2016.

4.3 South African multi-dimensional poverty index (SAMPI)

The international multi-dimensional index of poverty (MPI) is an international measure of acute poverty based on a model first developed by Alkire & Foster from Oxford University for the United Nations (UN). The MPI complements traditional income/expenditure-based poverty measures by capturing the severe deprivations that each person or household faces with respect to education, health and living standards" (Oxford Poverty and Human Development Initiative, 2016). The South African model (SAMPI) was conceptualised and constructed using data collected by Statistics South Africa (Stats SA) through the censuses of 2001 and 2011. The model was also applied to Community Survey 2016 data. The index provides a reliably map of poverty down to municipal level. The proportion of households that are considered poor, the 'headcount', is used to compare and rank municipalities in terms of poverty. Detailed information about the SAMPI is available from Stats SA (2014).

4.4 Limitations of the study

Municipal boundaries are important to provide services is in an equitable and sustainable manner. The boundaries are, however, occasionally re-determined, making it difficult to make comparisons over time. When municipal boundaries change or municipalities are split or amalgamated, geographical areas have to be aligned post-hoc to make comparisons over time possible. Although sophisticated methodologies are used to re-allocate data in the smallest available geographic units (enumerator areas in the case of censuses) into the new areas, the process is seldom completely accurate as many units straddle new boundaries.

Comparing results over time is determined by the comparability of questions. Although great care was taken to align questions in CS 2016 with those asked in Census 2011, refinements in the CS questionnaire is not available in 2011.

It is also important to mention that the comparison between 2011 and 2016 of the total number of people or households in each geographic unit, particularly municipalities, is complicated by the fact that the 2016 Community Survey was essentially a large-scale survey which was calibrated using population and household estimates for the various units. Estimates at the lowest levels of geographical disaggregation are subject to high levels of variability.

The data used in this report were sourced from multi-purpose instruments in which indicators were often not measured in great detail.

Although referring to the comparability of data between countries, observations made by the Organisation for Economic Co-operation and Development (OECD) (2007) can equally be applied to the comparison of data sources used in this report. The OECD report mentions that comparison is frequently hamstrung by the timing and content of questions when measuring rapidly changing behaviour.

> *Timing*: The Community Survey 2016 data were collected in March 2016, while Census 2011 data were collected in October of that year. Data for the Non-Financial Census of municipalities is referenced to July of each year.
>
> *Content*: Although many of the questions asked by the Community Survey and census covered similar themes and generally used compatible response categories, there were also occasional differences.

The definition of households often differ between sources. While the definitions used by the census and CS usually refer to households as ‘people living together and sharing resources’, the Department of Energy (DOE) defines households as residential consumers with an official point of electricity supply.

5 Water services in South Africa

5.1 Background

Safe and sufficient drinking water and adequate sanitation are both essential ingredients to ensure health and well-being of human beings, and they are necessary for economic development. Sections 24 and 27 of the Bills of Rights grant specific rights related to access to sufficient water, and Section 27 states that 'everyone has the right to have access to sufficient water' and that 'the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of these rights'. Although the right to basic sanitation is not explicitly mentioned in the constitution, it could be derived from section 24(a) (the right to a clean environment) read with the right of access to adequate water. The Water Services Act (WSA) gives effect to the constitutional rights above, including the right to basic sanitation.

The water sector in South Africa is divided into two main sub-sectors, namely water resources management, guided by the National Water Act (1998), and water services provision, guided by the Water Services Act (1997). The water service sector refers to water supply and sanitation services which are predominantly provided by the Department of Water and Sanitation (DWS), water boards and municipalities. Although the DWS leads the sector through policy development, regulation, and monitoring and evaluation, it has relinquished its implementation responsibility by transferring water schemes to relevant municipalities.

According to Part B of schedule 4 of the Constitution, the provision of water services is a municipal responsibility. All municipalities are, however, not authorised to provide water. The two-tiered local government system requires that powers and functions be divided between category B and C municipalities to avoid duplication and coordination problems. Authorisation is granted to all category A (metros) municipalities while category B (local) municipalities are authorised in certain instances and category C (district) municipalities in others (Treasury, 2011). These divisions are outlined in the Municipal Systems Act, the Municipal Structures Act and the subsequent Amendment Act (Act No. 33 of 2000).

A total of 169 municipalities have been authorised to provide water and sanitation services. An authorised municipality may appoint another organisation (including another municipality) to provide the water services function on its behalf. Such organisations are referred to as water service providers (Treasury, 2011).

Government’s ‘universal service obligation’ prioritises the provision of water and sanitation services to all South Africans through funding the necessary infrastructure and providing free basic services. Although substantial progress has been made with regards to providing access to water and sanitation, Treasury (2011) notes that ever increasing funding is required to service ageing infrastructure, while alternative service delivery options should be explored in outlying communities where the cost of expanding infrastructure is either not cost-effective or unsustainable.

The Strategic Framework for water Services (2003) defines a b**asic water supply facility** as the infrastructure necessary to supply 25 litres of potable water per person per day within 200 metres of a household and with a minimum flow of 10 litres per minute (in the case of communal water points) or 6 000 litres of potable water supplied per formal connection per month (in the case of yard or house

connections). In terms of **water supply services,** the framework commits itself to the sustainable operation of the facility (available for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident) and the communication of good water use, hygiene and related practices.

Water and sanitation services are financed through the water and sanitation components in the local government equitable share and capital spending on water and sanitation assets are financed through the basic services component of the municipal infrastructure grant (MIG). While metros are generally best able to cross-subsidise within particular services and customers, infrastructure grant funding is supplemented by internal revenue sources and external borrowing across all municipalities.

5.1.1 National Development Plan

Government's objective is to ensure that all South Africans have access to basic water and sanitation services. The National Development Plan (NDP) articulates the national development goal of eradicating poverty and sharply reducing inequality by 2030. South Africa is a dry country with limited fresh water resources and adequately accessing water and sanitation is a challenge for many households in rural and peri-urban communities. The NPC (2011) points out that inadequate access to water can be the result of insufficient bulk infrastructure, poor municipal service delivery and/or poor maintenance of existing infrastructure, as well as households being too poor to pay for the cost of services. As a long-term driver of development policy in the country, the NDP envisages that all South Africans will have full, affordable and reliable access to sufficient safe water and hygienic sanitation by 2030.

5.1.2 MTSF 2014–2019

To achieve this, Government has prioritised the rollout of the required infrastructure as well as the provision of free basic services to poor households. The Medium Term Strategic Framework (MTSF) for 2014-2019 reflects the commitment to implement the NDP. With regards to water, the MTSF calls for an increase in the percentage of households with access to a functional water service from 85% in 2013 to 90% by 2019.

5.1.3 Sustainable Development Goals

This will expand on the MDG target which aimed to halve the percentage of the population without sustainable access to safe drinking water by 2015 and which was achieved in 2005. According to Stats SA (2015), the percentage of people who used an improved source of drinking water increased from 76,6% in 1996 to 88,3% in 2015.

Goal 6 of the Sustainable Development Goals (SDGs) aims to ensure the availability and sustainable management of water and sanitation for all. Like the NDP, the goal calls for the achievement of universal and equitable access to safe and affordable drinking water for all by 2030. The goal also calls for a substantial increase in water-efficiency across all sectors while balancing supplies with demand in order to reduce the number of people suffering from water scarcity (United Nations, 2015).

Despite large improvements in the provision of water, many households still lack access to safe, affordable and reliable sources of drinking water. Government is therefore committed to continue the expansion of access to water and other basic services, while ensuring that municipalities provide and properly maintain an adequate core set of basic services (DPME, 2014).

5.2 Access to water services

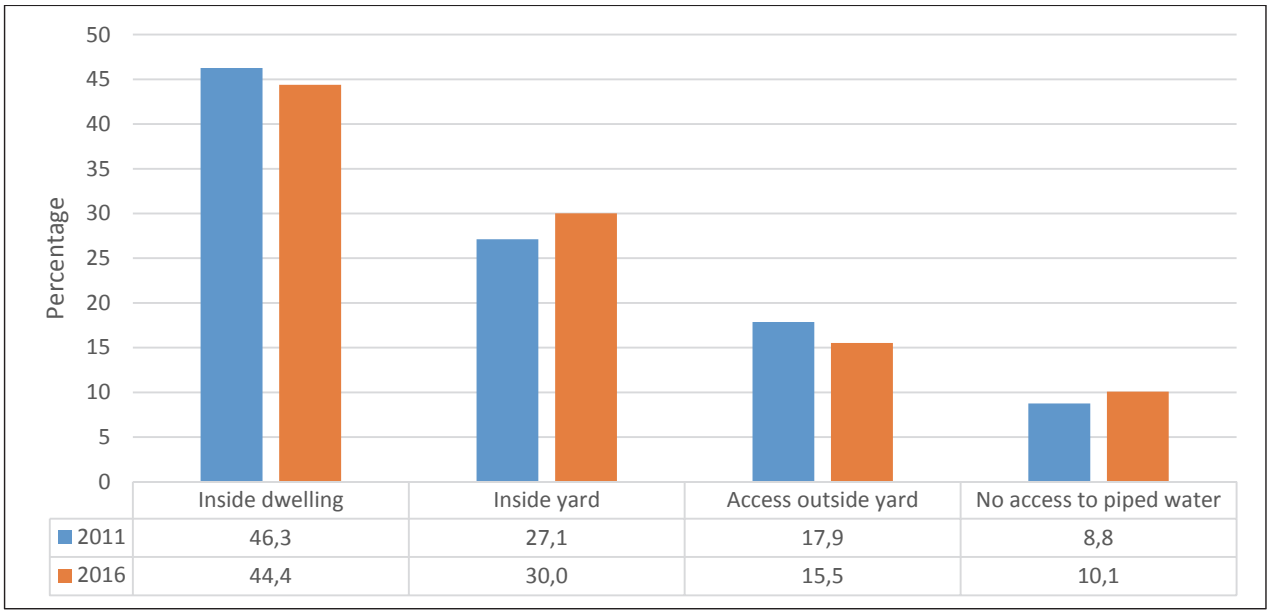
Access to water is an universal right and Government is committed to ensure that all South Africans have access to basic water services. The percentage of households using various main sources of drinking water is presented in Table 5.1.

Table 5.1: Percentage of households using different main sources of drinking water by province, 2016

	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Piped (tap) water inside dwelling/house	76,9	33,4	43,7	37,8	37,4	24	60,0	29,0	13,1	**44,4**
Piped (tap) water inside yard	11,6	18,0	33,5	52,7	28,8	39,8	29,7	44,4	35,8	**30,0**
Piped water on community stand	8,0	17,0	8,7	2,7	12,9	9,2	4,3	5,4	15,8	**9,0**
Neighbour's tap	0,3	1,2	1,1	1,4	1,8	4,5	0,5	4,1	6,3	**1,9**
Public/communal tap	2,2	5,5	7,2	1,6	4,5	8,6	2,9	5,1	8,9	**4,5**
Borehole in the yard	0,2	0,4	1,7	0,9	0,8	4,4	0,9	1,8	6,2	**1,6**
Rain-water tank in yard	0,2	5,2	0,1	0,1	1	0,4	0	0,5	0,9	**0,9**
Water-carrier/tanker	0,1	0,9	1,2	1,2	3	4,9	1,0	4,2	2,2	**1,9**
Borehole outside the yard	0,1	0,5	1,1	0,9	2,2	2,6	0,3	2,1	4,1	**1,3**
Flowing water/stream/river	0,1	15,4	0,8	0,1	6,4	0,2	0,0	2,0	3,7	**3,2**
Well	0	0,4	0,0	0,0	0,2	0,1	0,0	0,1	0,5	**0,1**
Spring	0,1	1,8	0,0	0,1	0,6	0,0	0,0	0,2	0,6	**0,4**
Other	0,3	0,3	0,8	0,5	0,4	1,5	0,2	1,1	1,9	**0,6**
Total	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Numbers (thousands)	**1 934**	**1 773**	**354**	**947**	**2 876**	**1 249**	**4 951**	**1 239**	**1 601**	**16 923**

Table 5.1 shows that approximately nine-tenths (89,8%) of households in South Africa used piped water as their main source of drinking water. Three-quarters of households retrieved water inside the dwelling (44,4%) or inside their yards (30%), while 1,9% retrieved it from a neighbour's tap and 13,5% accessed it from a communal tap. However, 4,3% of households still relied on water from unsafe sources such as rivers, streams, wells or springs. Household access to piped water as their main source of water was highest in Western Cape (99%), Gauteng (97,4%) and Free State (96,2%), and lowest in Eastern Cape (75,1%) and Limpopo (79,9%). A large percentage of households in Eastern Cape (17,9%), KwaZulu-Natal (7,6%) and Limpopo (6,7%) still relied on unsafe sources of water.

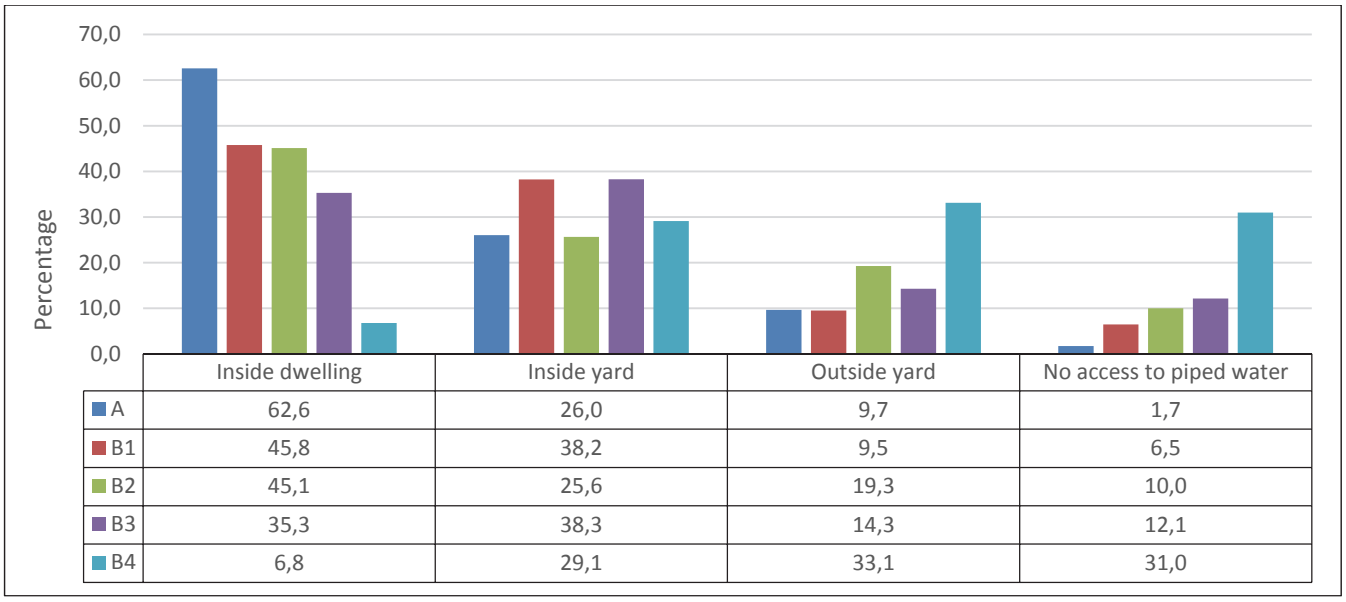
Figure 5.1: Household access to drinking water, 2011 and 2016



	Inside dwelling	Inside yard	Access outside yard	No access to piped water
2011	46,3	27,1	17,9	8,8
2016	44,4	30,0	15,5	10,1

A comparison of figures for 2016 with those obtained from Census 2011 (Figure 5.1) shows that the percentage of households that had access to water inside their dwellings declined slightly from 46,3% to 44,4% while access in the yard increased by 2,9 percentage points to 30%. It is noticeable that the percentage of households without access to piped water increased from 8,8% to 10,1% between 2011 and 2016. This relatively small decline could possibly be attributed to sample errors commonly associated with sample surveys, such as the Community Survey.

Figure 5.2: Household access to drinking water by municipal category, 2016



	Inside dwelling	Inside yard	Outside yard	No access to piped water
A	62,6	26,0	9,7	1,7
B1	45,8	38,2	9,5	6,5
B2	45,1	25,6	19,3	10,0
B3	35,3	38,3	14,3	12,1
B4	6,8	29,1	33,1	31,0

Household access to piped water is closely associated with the type of municipality households reside in. Figure 5.2 shows that the percentage of households with access to water inside the dwelling steadily declines from 62,6% for metropolitan municipalities to 6,8% for rural B4 municipalities. Inversely, the percentage of households without access to piped water increased from 1,7% for households in metros to 31% of households in rural B4 municipalities.

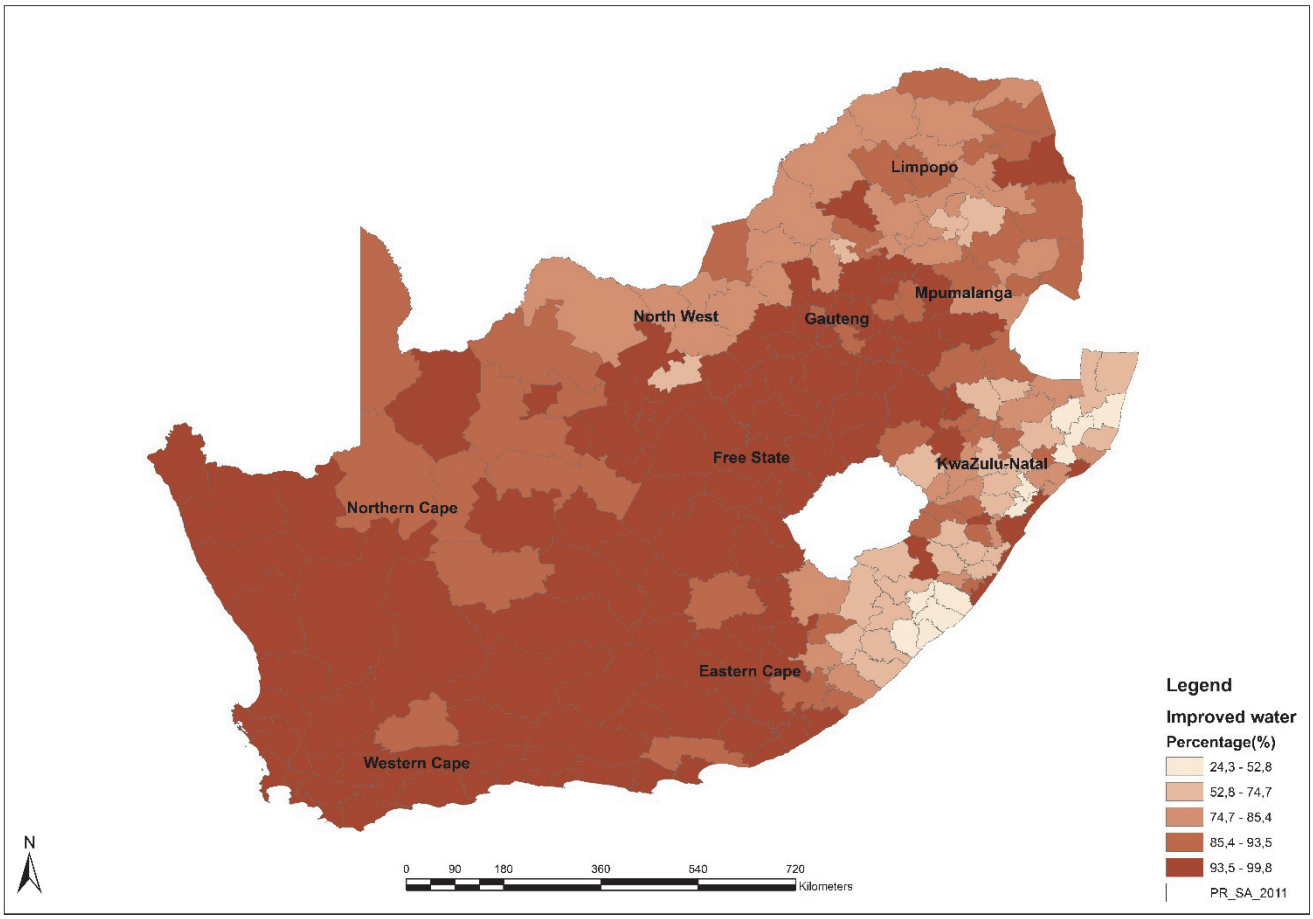
Table 5.2: Classification of improved and unimproved sources of drinking water

Improved drinking water sources	Unimproved drinking water sources
Piped water into dwelling, plot or yard	Unprotected dug well
Public tap/standpipe	Unprotected spring
Tube well/borehole	Tanker truck
Protected dug well	Surface water (river, dam, lake, pond, stream, irrigation channel)
Protected spring	Bottled water
	Rainwater

Source: Joint Monitoring Programme (JMP) for Water Supply and Sanitation

Although the vast majority of South African households have access to, and use piped water, a sizable percentage of households, particularly in rural municipalities, still have to rely on other sources of water. Table 5.2 outlines the categories used to classify improved and unimproved water sources using the MDG methodology. Improved sources of water include all sources of water that are, by the nature of its construction, and when used properly, protected from outside contamination, particularly contamination with faecal matter (WHO Joint Monitoring programme). Although the WHO joint monitoring programme considers protected wells or springs, and rainwater collection as adequately protected from contamination to be considered as improved sources, this cannot be corroborated by survey data. Improved sources of water are, for the purposes of this report, therefore limited to piped water, and water from boreholes.

Map 5.1: Percentage of households with access to an improved source of water by local municipality, 2016



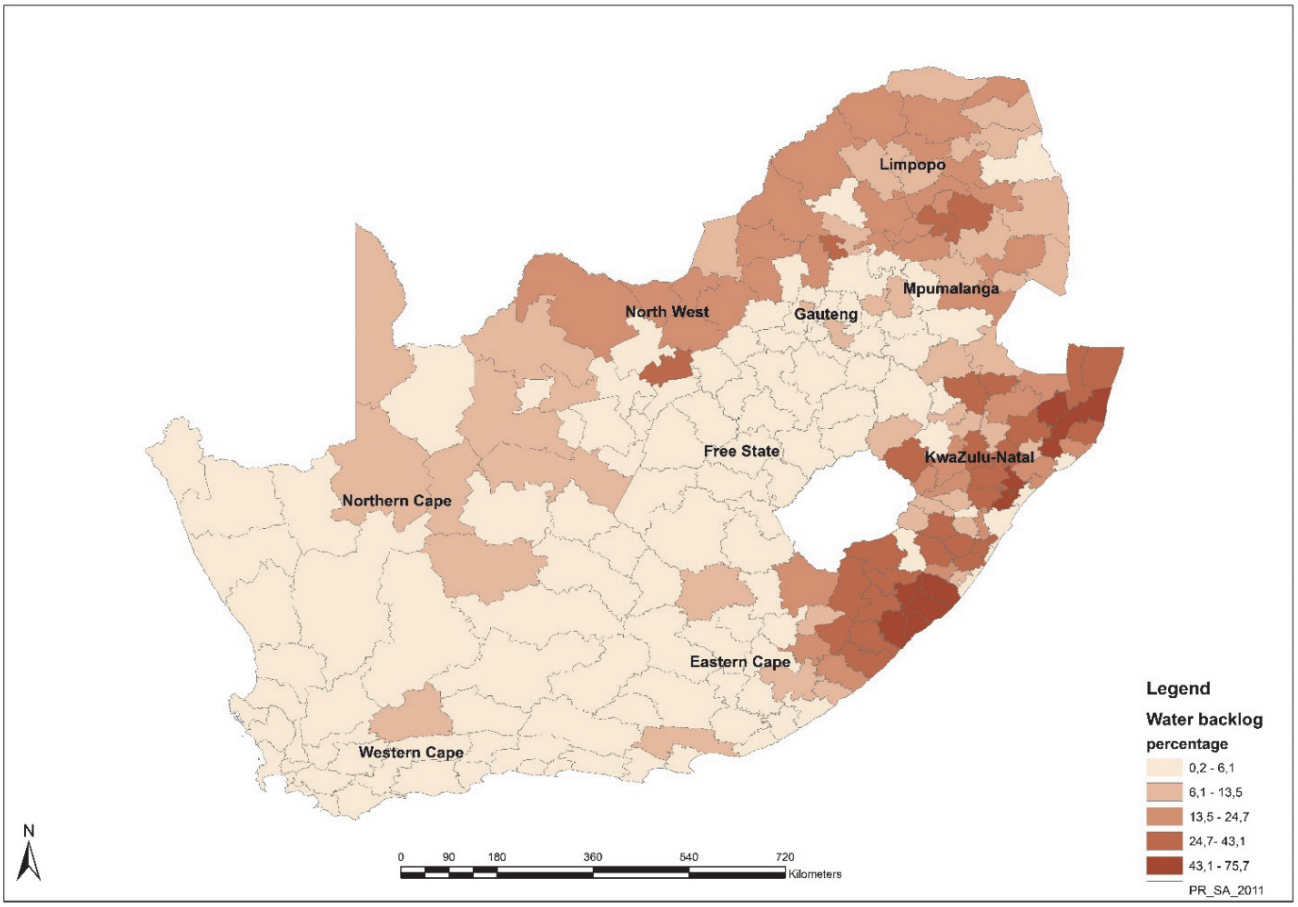
The percentage of households with access to improved sources of water by local municipality is presented in Map 5.1. The map shows that less than one-half of all households had access to an improved source of water in the 13 municipalities with the lowest access to water. The worst access was noted in Ngquza Hill (19,4%), Port St Johns (20,3%) and Mbizana (23,3%). The 20 municipalities in which households had the lowest access to improved sources of water were all located in Eastern Cape (11) and KwaZulu-Natal (9). At the other end of the spectrum, 78 municipalities recorded access to an improved source of water by 98% or more of its households. Virtually all households in municipalities such as Emfuleni and City of Cape Town (both 99,9%), Nketoana, Ubuntu, Gariep and Drakenstein (all 99,8%) had access to an improved source of water. Whereas 0,7% of households in Western Cape, 1,3% in Gauteng, and 2,1% in Free State did not have access to an improved source of water, almost one-quarter of households in Eastern Cape (24,0%) and 11,6% of households in KwaZulu-Natal depended on unimproved sources of water.

Table 5.3: Household backlog in access to piped water by province, 2016

Province	Access to piped water	No access to piped water	Total	Backlog (percent)
Western Cape	1 914 055	19 822	1 933 876	1.0
Gauteng	4 826 194	124 943	4 951 137	2.5
Free State	910 582	36 056	946 638	3.8
Northern Cape	333 408	20 301	353 709	5.7
Mpumalanga	1 090 892	147 969	1 238 861	11.9
North West	1 074 968	173 799	1 248 766	13.9
Kwa-Zulu Natal	2 457 350	418 493	2 875 843	14.6
Limpopo	1 280 077	321 006	1 601 083	20.0
Eastern Cape	1 331 228	442 167	1 773 395	24.9
South Africa	**15 218 754**	**1 704 556**	**16 923 309**	**8,8**

The backlog of households without access to water supply infrastructure is calculated as the percentage of households without access to piped water. Table 5.3 shows that 1,7 million households (8,8% of all households) in the country did not have access to piped water in 2016. The lowest backlog was noted in Western Cape (1%) while the highest backlogs were observed in Eastern Cape (24,9%), Limpopo (20%), KwaZulu-Natal (14,6%) and North West (13,9%).

Map 5.2: Percentage of households without access to piped water by local municipality, 2016



Map 5.2 shows that the municipalities with the largest percentage backlog are generally located in the largely rural municipalities along the Eastern seaboard in Eastern Cape and KwaZulu-Natal, and to a lesser extend in Limpopo. The highest backlogs are observed in Ngquza Hill (81,7%), Port St Johns (81,3%) and Mbizana (77,8%) while municipalities such as Cape Town (0,2%), Drakenstein and Saldanha Bay (both 0,5%), and Witzenberg, and Sol Plaatjie (both 0,7%) barely registered any backlog.

Table 5.4: Household water backlog using access to improved water by municipal category, 2016

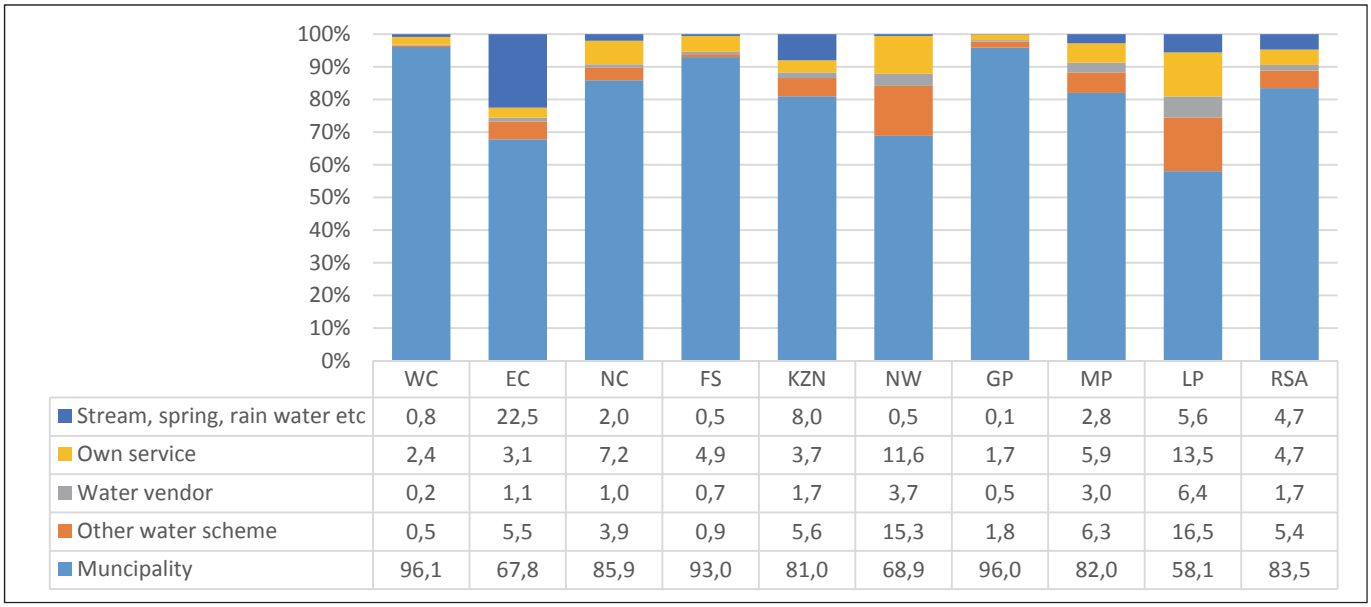
Municipal Category	Access to improved water	No access to improved water	Total	Backlog (percent)
Metro (A)	7,463,539	82,756	7,546,295	1.1
Secondary city (B1)	2,483,447	97,909	2,581,356	3.8
Large town (B2)	1,284,117	88,489	1,372,606	6.4
Small town (B3)	2,029,413	170,690	2,200,103	7.8
Rural municipality (B4)	2,450,725	772,223	3,222,948	24.0
South Africa	**15,711,241**	**1,212,068**	**16,923,309**	**7.2**

If the backlog is calculated in terms of access to an improved source of water by municipal category, Table 5.4 shows that the backlog is, by and large, concentrated in the rural B4 municipalities. About one-quarter (24,0%) of households in rural municipalities did not have access to an improved source of water compared to approximately 3,8% in secondary cities (B1) and 6,4% in Large towns (B2). Of the estimated 1,2 million households that did not have access to an improved source of water in 2016, 772 223 resided in rural municipalities.

5.3 Water supply

The main sources of households' main sources of drinking water are presented in Figure 5.3.

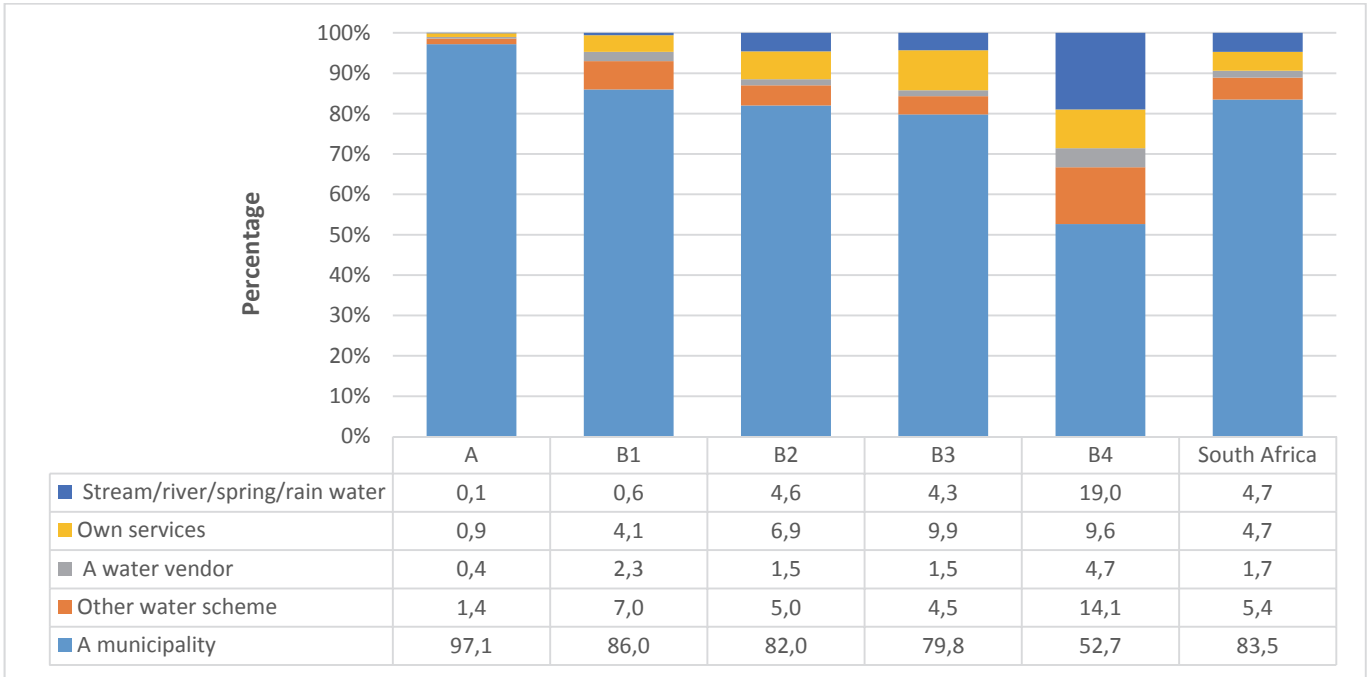
Figure 5.3: Main provider of household drinking water by province, 2016



	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Stream, spring, rain water etc	0,8	22,5	2,0	0,5	8,0	0,5	0,1	2,8	5,6	4,7
Own service	2,4	3,1	7,2	4,9	3,7	11,6	1,7	5,9	13,5	4,7
Water vendor	0,2	1,1	1,0	0,7	1,7	3,7	0,5	3,0	6,4	1,7
Other water scheme	0,5	5,5	3,9	0,9	5,6	15,3	1,8	6,3	16,5	5,4
Muncipality	96,1	67,8	85,9	93,0	81,0	68,9	96,0	82,0	58,1	83,5

Figure 5.3 shows that 88,9% of households either received their water from a municipality (83,5%) or from another water scheme such as a community water supply (5,4%) in 2016. Although 4,7% of households relied on streams, rivers or rain water at a national level, 22,5% of households in Eastern Cape still depended on these sources of water. This could, at least in part, be attributed to the low percentage of households that received water from municipal (67,8%) or other water schemes (5,5%) in this province.

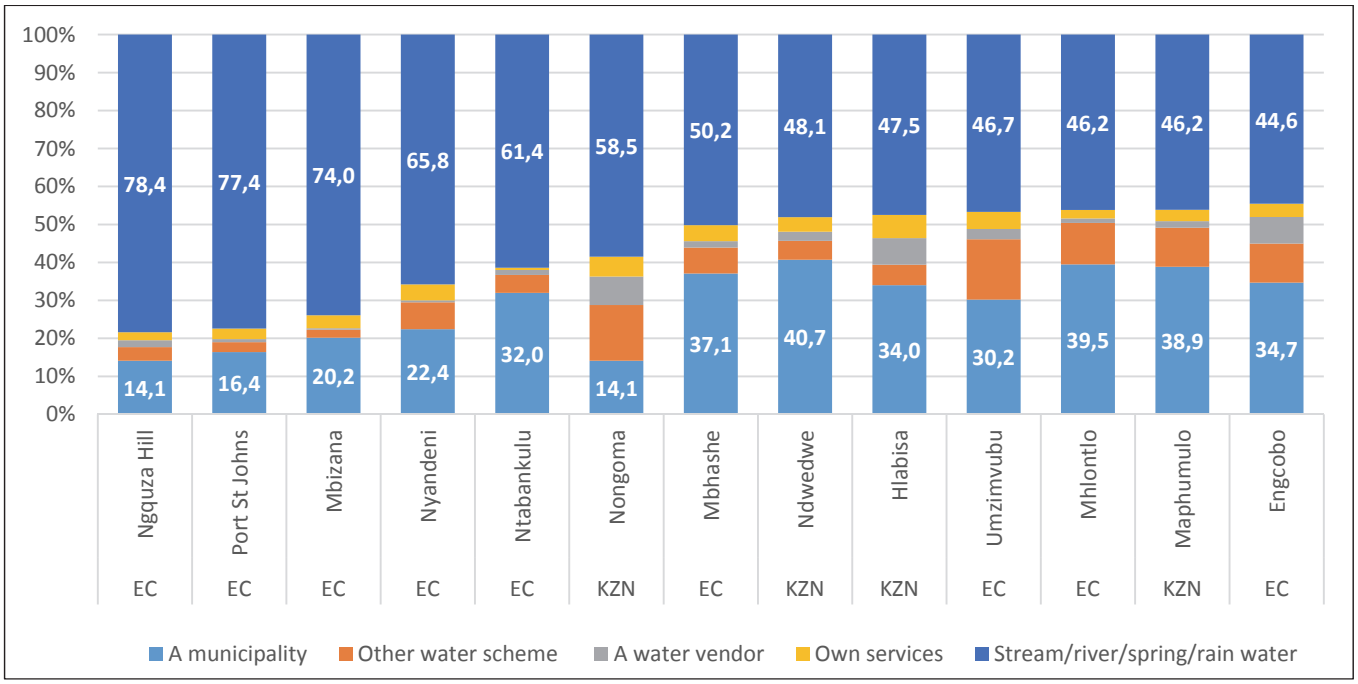
Figure 5.4: Main provider of household drinking water by municipal categories, 2016



	A	B1	B2	B3	B4	South Africa
Stream/river/spring/rain water	0,1	0,6	4,6	4,3	19,0	4,7
Own services	0,9	4,1	6,9	9,9	9,6	4,7
A water vendor	0,4	2,3	1,5	1,5	4,7	1,7
Other water scheme	1,4	7,0	5,0	4,5	14,1	5,4
A municipality	97,1	86,0	82,0	79,8	52,7	83,5

An analysis of the provision of drinking water by municipal category emphasises the large variance between different municipalities (Figure 5.4). Whereas 98,5% of households in metropolitan municipalities accessed water from a municipal or other water scheme, the comparable figure for rural municipalities (B4) was 66,8%. Almost one-fifth (19%) of households in rural (B4) municipalities still relied on streams, rivers and open water to access drinking water.

Figure 5.5: Local municipalities in which more than 40% of households access water from streams or springs, 2016



At least one-fifth of households mainly accessed drinking water from streams, rivers and rainwater in 35 municipalities that were mainly located in either Eastern Cape or KwaZulu-Natal. The 13 municipalities in which more than 40% of households relied on streams and rivers are presented in Figure 5.5. The figure shows that the large majority of households in Ngquza Hill (78,4%), Port St John (77,4%) and Mbizana (74%) relied on natural water sources, while less than one-quarter of households in those areas received water from municipalities or other water schemes.

5.4 Free basic water

Providing access to basic water, sanitation, electricity and refuse removal can make a major contribution to enhancing the well-being of poor households. The Free Basic Services (FBS) policy was first announced in 2000 and aimed to support low-income households to access free basic services, including water, sanitation and electricity services.

The policy for Free Basic Water promotes sustainable access to a basic water supply by subsidising the ongoing operating and maintenance costs of a basic water supply service. The basic water supply service refers to the infrastructure necessary to supply 25 litres of potable water per person per day from a source within 200m of a household and with a minimum flow of 10 litres per minute (in the case of communal water points) or 6 000 litres of potable water supplied per formal connection per month (in the case of house connections). Free Basic Water is financed from the Local Government Equitable Share and through cross-subsidisation. Although the Free Basic Water Policy is not legislated per se, it is based on sections of the Water Services Act, and the Compulsory National Standards (Regulation 3[b]).

Table 5.5 shows that the total number of consumer units receiving a basic water service has increased on an annual basis since 2011. The consumer units that received a free basic service, however, grew rapidly until 2013, before starting to decline. The percentage of consumer units that received FBW declined from 44% in 2013 to 36,7% in 2015. This could most likely be attributed to better targeting of indigent households and poor households that are eligible to receive the service.

Table 5.5: Number of households that received free basic water, 2011–2015

Province	Basic water services				
	2011	2012	2013	2014	2015
Western Cape	1 023 117	1 181 091	1 202 348	1 207 845	1 267 789
Eastern Cape	1 496 300	1 496 754	1 494 344	1 543 859	1 590 824
Northern Cape	240 435	247 260	271 919	283 657	291 970
Free State	725 191	718 802	770 967	737 134	756 054
KwaZulu-Natal	1 919 351	2 004 198	2 068 512	2 115 411	2 168 885
North West	713 216	767 839	840 751	887 356	907 922
Gauteng	2 799 716	2 790 624	2 850 080	3 161 842	3 201 590
Mpumalanga	940 433	1 008 688	1 021 837	1 049 447	1 082 471
Limpopo	1 169 483	1 207 169	1 140 537	1 221 715	1 250 675
South Africa	**11 027 242**	**11 422 425**	**11 661 295**	**12 208 266**	**12 518 180**
Province	**Free Basic Water**				
	2011	**2012**	**2013**	**2014**	**2015**
Western Cape	824 571	958 079	944 844	926 007	1 019 484
Eastern Cape	752 338	690 093	678 014	610 690	688 459
Northern Cape	89 165	87 145	91 240	68 700	93 856
Free State	311 299	309 315	272 151	169 695	151 112
KwaZulu-Natal	700 904	821 118	814 266	856 225	764 438
North West	301 603	323 705	188 894	196 766	133 443
Gauteng	373 448	819 931	1 077 660	950 551	930 300
Mpumalanga	429 102	435 729	581 307	433 979	357 417
Limpopo	440 368	451 424	480 787	459 973	450 281
South Africa	**4 222 798**	**4 896 539**	**5 129 163**	**4 672 586**	**4 588 790**
Percent FBW	**38,3**	**42,9**	**44,0**	**38,3**	**36,7**

Source**:** Non-Financial Census of Municipalities for the year ending on 30 June 2015

5.5 Reliability of water services

The Strategic Framework for water Services (2003) commits Government to the sustainable operation of **water supply services** as measured through availability for at least 350 days per year, and without being interrupted for more than 48 consecutive hours per incident. The perceived lack, and poor quality of services have often been blamed for the outbreak of protests, forcing Government to improve the quality and performance of water service delivery.

The reliability of water delivery can be measured using a short battery of questions in the Community Survey that dealt with the incidence of water interruptions over the previous three months, as well as the length of any such interruptions. The final question in the set also enquires whether any interruptions lasted longer than two consecutive days.

Figure 5.6: Percentage of households that experienced water interruptions during the previous three months by local municipality, 2016

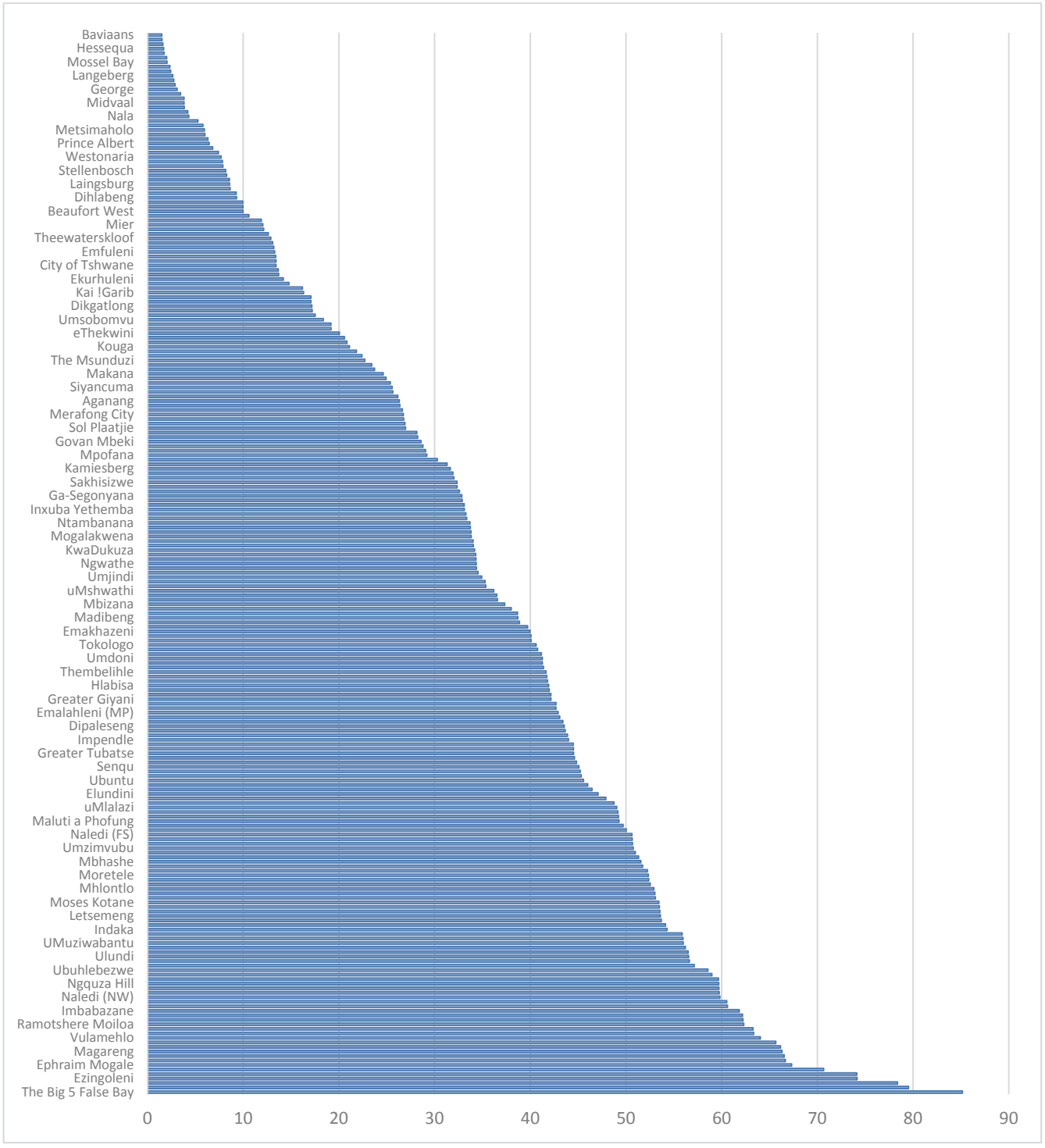
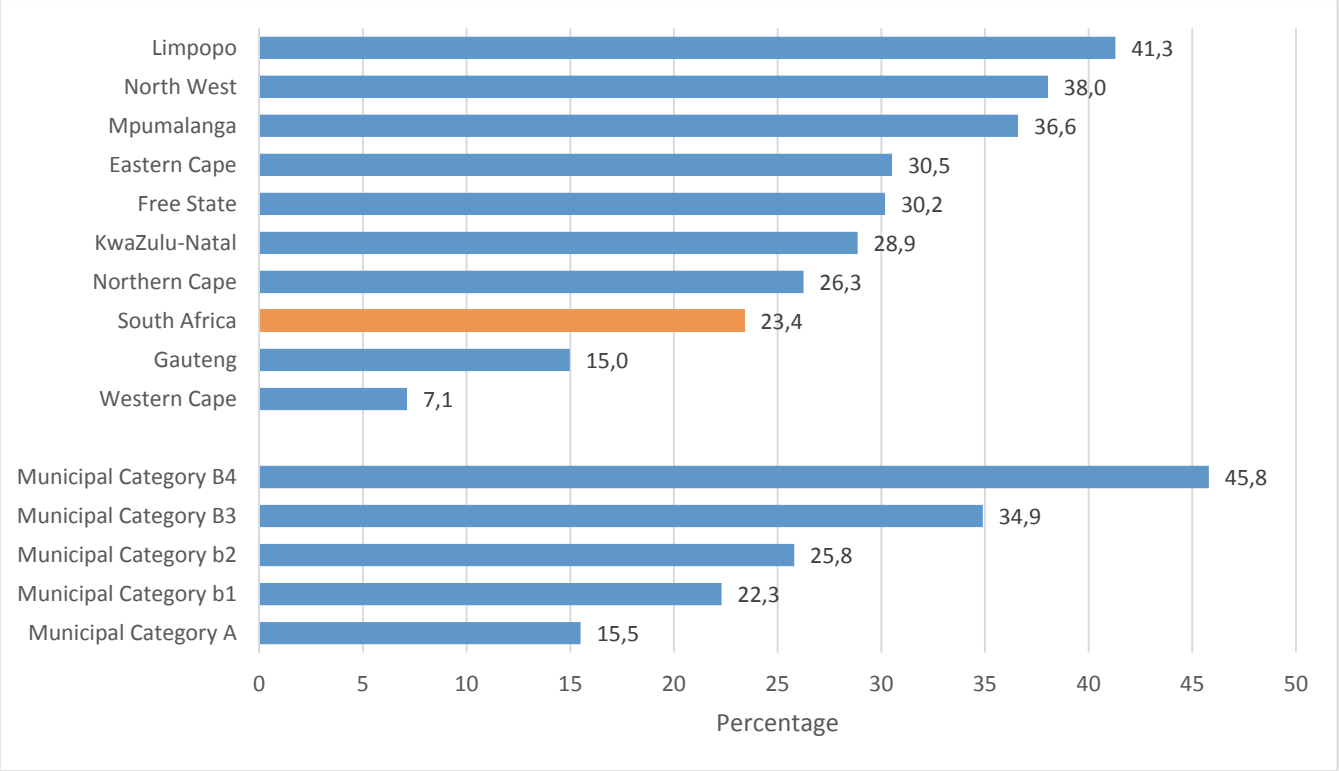


Figure 5.6 shows that 23,4% of households in South Africa experienced some water interruptions in the three months before the study. Large differences exist between municipalities that experienced the least interruptions, and those with the most interruptions. Interruptions were most common in the Big 5 False Bay (85,1%), Modimolle (79,5%) and Mohokare (78,4%), and least common in Baviaans and Emthanjeni (both 1,5%) and Hantam (1,6%). For metropolitan municipalities, the percentage of households that reported interruptions varied from 7,4% for Cape Town to 20% for eThekwini.

Figure 5.7: Percentage of households that experienced water interruptions during the previous three months by province and municipal category, 2016.



A breakdown of the data by province and municipal category (Figure 5.7) shows that a much smaller percentage of households in metropolitan municipalities (15,5%) than small towns (B3) (34,9%) or rural (B4) municipalities (45,8%) experienced interruptions during the previous three months. Interruptions were also much less common in Western Cape (7,1%) and Gauteng (15,0%) where much of the population resided in metropolitan areas. By contrast, a much higher percentage of households reported interruptions in Limpopo (41,3%), North West (38%) and Mpumalanga (36,6%).

Figure 5.8: Percentage of households that experienced water interruptions that lasted longer than two consecutive days during the previous three months by province and municipal category, 2016

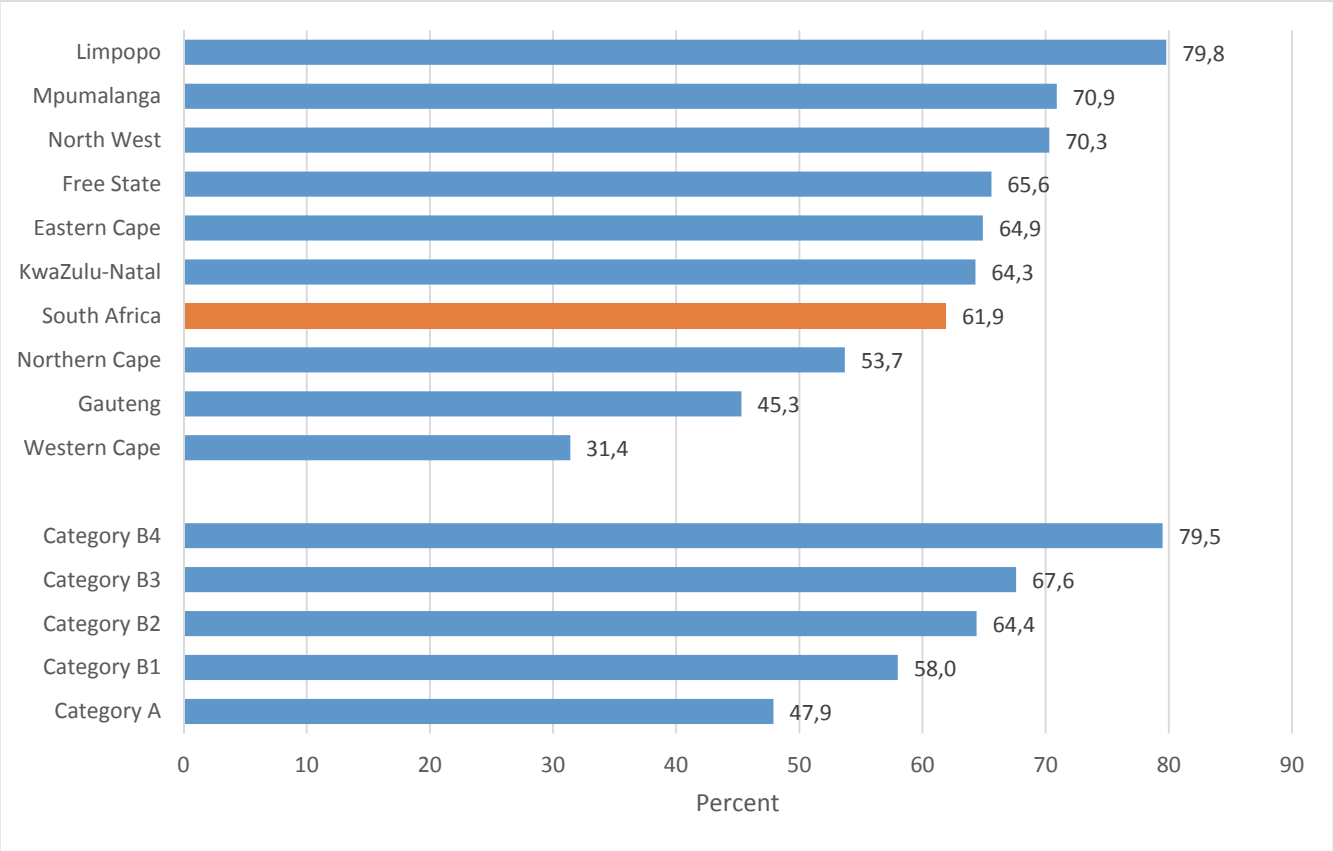
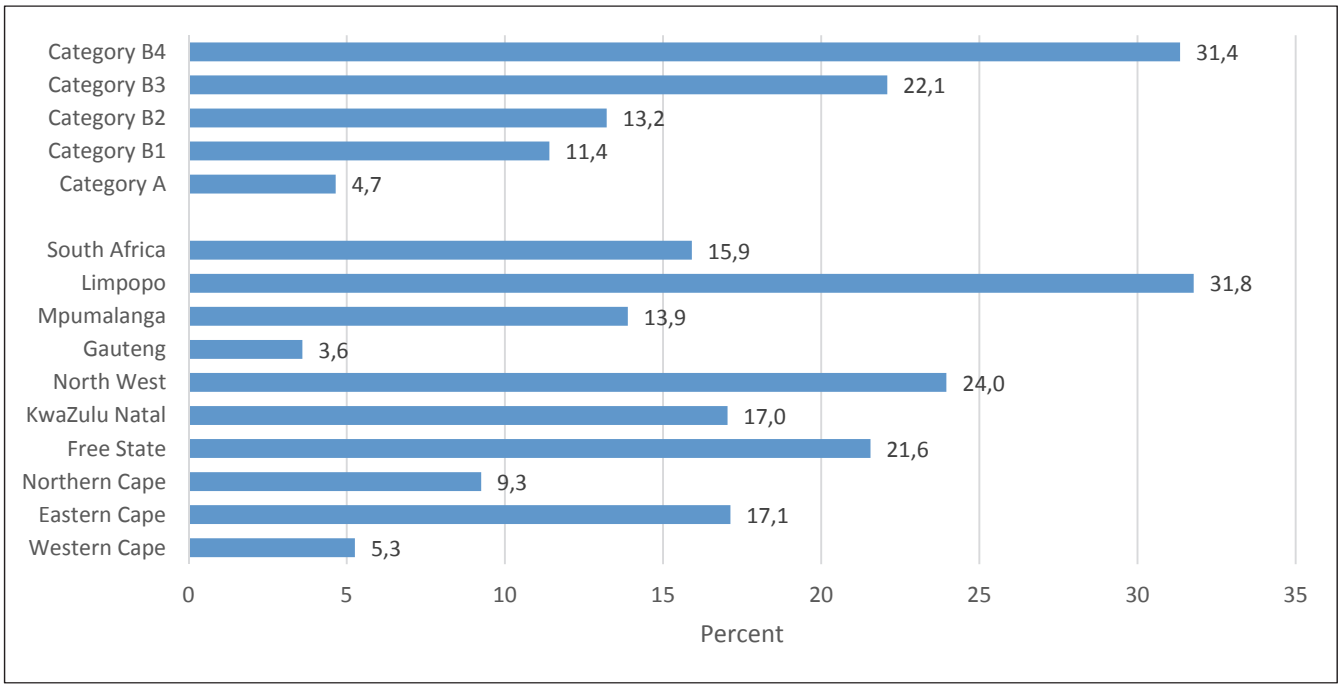


Figure 5.8 shows that, of all households in South Africa that experienced water interruptions during the previous three months, 61,9% experienced water interruptions that lasted more than two consecutive days. Although less than 6% of municipalities experienced such prolonged interruptions in three municipalities (Baviaans, Siyathemba, Camdeboo), more than 90% of households experienced such interruptions in Karoo Hoogland (100%), Tokologo (93,1%), Magareng (90,7%), Thulamela (90,6%) and the Big 5 False Bay (90,1%). Between 80% and 90% of households experienced such prolonged interruptions in a further 47 municipalities, while 70% to 80% of households in 52 municipalities reported similar interruptions. Households in metropolitan municipalities were less likely to have had long interruptions than households in particularly rural (B4) municipalities.

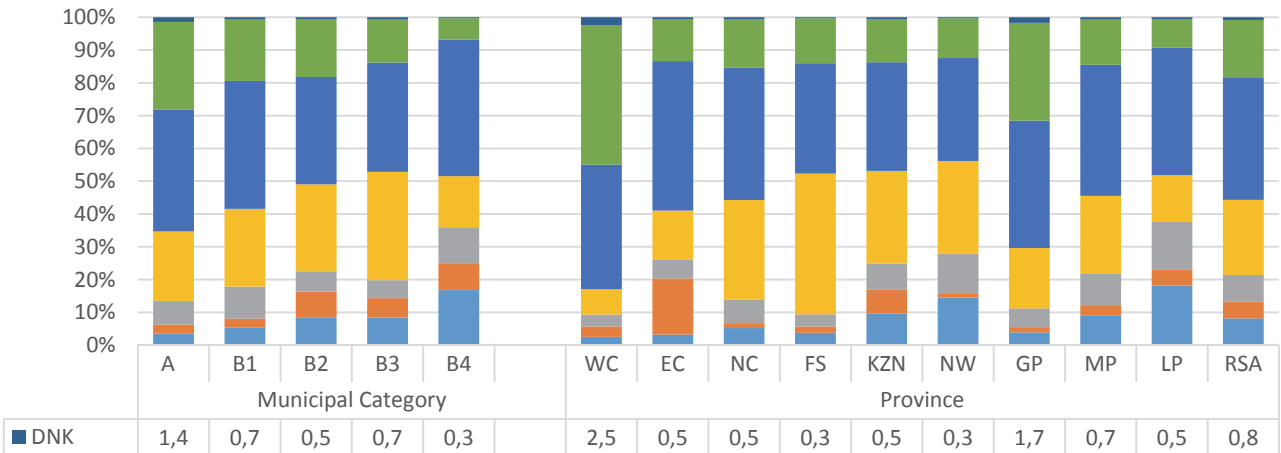
Figure 5.9: Percentage of households that experienced water interruptions lasting 14 days or longer in total during the previous three months by province and municipal category, 2016



Nationally, 15,9% of the households that experienced water interruptions during the three months before the survey reported that they had water interruptions for a total of 14 days over the preceding 90 days. In metropolitan municipalities, 4,7% of households reported being without water for so long. The percentage of households that endured the prolonged interruptions increases for each municipal category until reaching 31,4% in the predominantly rural B4 municipality.

The prolonged interruptions were least common in Gauteng (3,6%) and Western Cape (5,3%), and most common in Limpopo (31,8%), North West (24%) and Free State (21,6%).

Figure 5.10: Alternative water sources used by households that experienced water interruptions by province and municipal category, 2016



	Municipal Category					Province									
	A	B1	B2	B3	B4	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
DNK	1,4	0,7	0,5	0,7	0,3	2,5	0,5	0,5	0,3	0,5	0,3	1,7	0,7	0,5	0,8
None	26,7	18,7	17,7	13,1	6,5	42,5	12,9	14,8	13,7	13,2	12,1	29,8	13,8	8,8	17,5
Other	37,2	38,9	32,7	33,3	41,7	38,0	45,7	40,4	33,7	33,2	31,4	38,9	40,0	38,8	37,4
Tanker	21,2	23,7	26,5	33,0	15,6	7,8	14,9	30,3	42,9	28,3	28,2	18,4	23,7	14,3	22,9
Vendor	7,2	9,8	6,2	5,5	11,0	3,6	5,8	7,2	3,7	8,0	12,3	5,7	9,7	14,5	8,1
Rainwater	2,8	2,7	8,0	5,9	8,2	3,2	17,2	1,5	1,9	7,3	1,1	1,6	3,1	4,9	5,1
Borehole	3,5	5,3	8,3	8,4	16,8	2,5	3,2	5,2	3,8	9,6	14,5	3,9	9,1	18,2	8,2

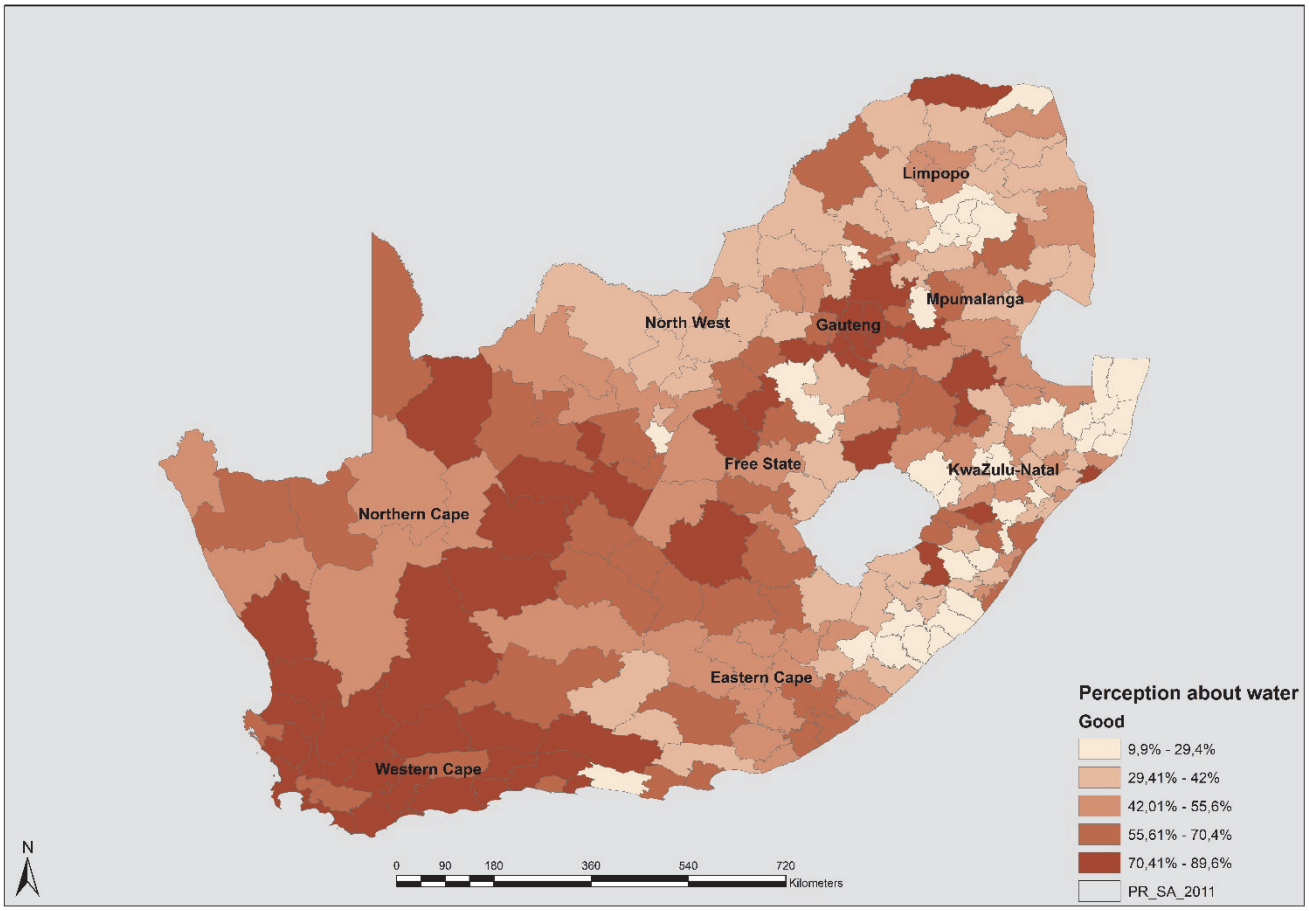
Figure 5.10 explores the alternative sources of water that households reportedly used when they were confronted with water interruptions. The percentage of households who did not have any alternative sources was highest for category A municipalities (metros) and declined consistently until bottoming out with B4 municipalities at 6,5%. Inversely, households that used boreholes as an alternative source of water consistently increased from 3,5% for metros to 16,8% of households in category B4 municipalities. One-third of households in B3 municipalities said that they would use water tankers compared to 15,6% in B4 municipalities and one-fifth (21,2%) in metros. The use of rainwater was also most common in B4 municipalities.

More than four-tenths (42,5%) of households in Western Cape indicated that they had no alternative source of water in mind compared to a national average of 17,5%. Boreholes were used by 18,2% of households in Limpopo and 14,5% of households in North West. The largest percentage of households that said they would rely on water tankers were reported in Free State (42,9%) and Northern Cape (30,3%).

5.6 Perception of water services

Almost nine-tenths (89,9%) of households in South Africa use piped water as their primary source of drinking water. Understanding residents' perceptions of water services will enable municipalities and water service boards to address the needs and concerns of residents and to improve communication.

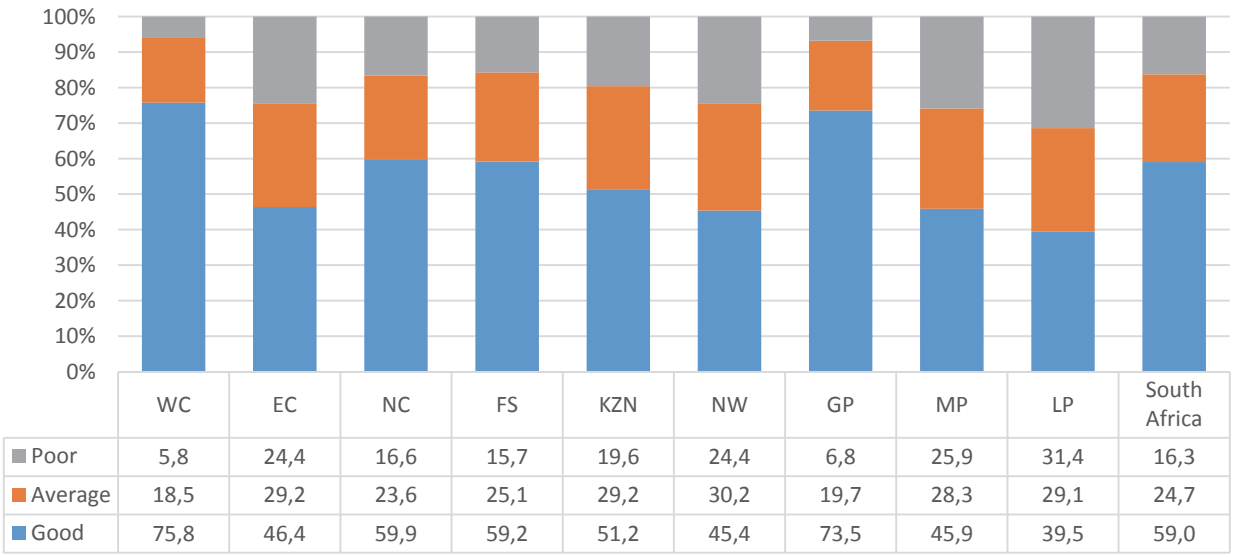
Map 5.3: Percentage of households that perceived the quality of water services as good, by Local Municipality, 2016



In a question that was limited to households that received piped water from municipalities, 59,0% of households in South Africa expressed their overall satisfaction with the overall quality of water services it received. Map 5.3 shows that the reported level of satisfaction was highest in municipalities in the Western Cape, Gauteng, and some in Northern Cape. The highest level of satisfaction was measured in Kgatelopele (89,6%), Swartland (89,2%), Bitou (88,6%), Lesedi (86,8%), and Tshwelopele and Karoo Hoogland (both 86,7%).

At the other end of the spectrum, very few households were satisfied with water services in Ngquza Hill (9,9%), Port St Johns (13,8%) and Mtubatuba (16,8%). Fewer than one-quarter of households rated their water services as good in 23 municipalities. The majority of households rated the service as ‘poor’ in Ngquza Hill (70,2%), Port St Johns (62,4%), Mtubatuba (58,3%) and Jozini (56,1%), to name a few. Municipalities that reported poor services were most common in Eastern Cape, KwaZulu-Natal, and Limpopo.

Figure 5.11: Perceived satisfaction with water services by province, 2016



	WC	EC	NC	FS	KZN	NW	GP	MP	LP	South Africa
Poor	5,8	24,4	16,6	15,7	19,6	24,4	6,8	25,9	31,4	16,3
Average	18,5	29,2	23,6	25,1	29,2	30,2	19,7	28,3	29,1	24,7
Good	75,8	46,4	59,9	59,2	51,2	45,4	73,5	45,9	39,5	59,0

A review of household rating of water services by province (Figure 5.11) shows that almost three-quarters of households in the predominantly urban provinces of Western Cape (75,8%) and Gauteng (73,5%) rated their water services as 'good'. By contrast, only 39,5% of households in Limpopo, 45,4% of households in North West, and 45,9% of households in Mpumalanga rated the service as 'good'. Almost one-third of households in Limpopo (31,4%) and 25,9% of household in Mpumalanga rated the service as 'poor'.

Figure 5.12: Perceived satisfaction with water services by municipal category, 2016

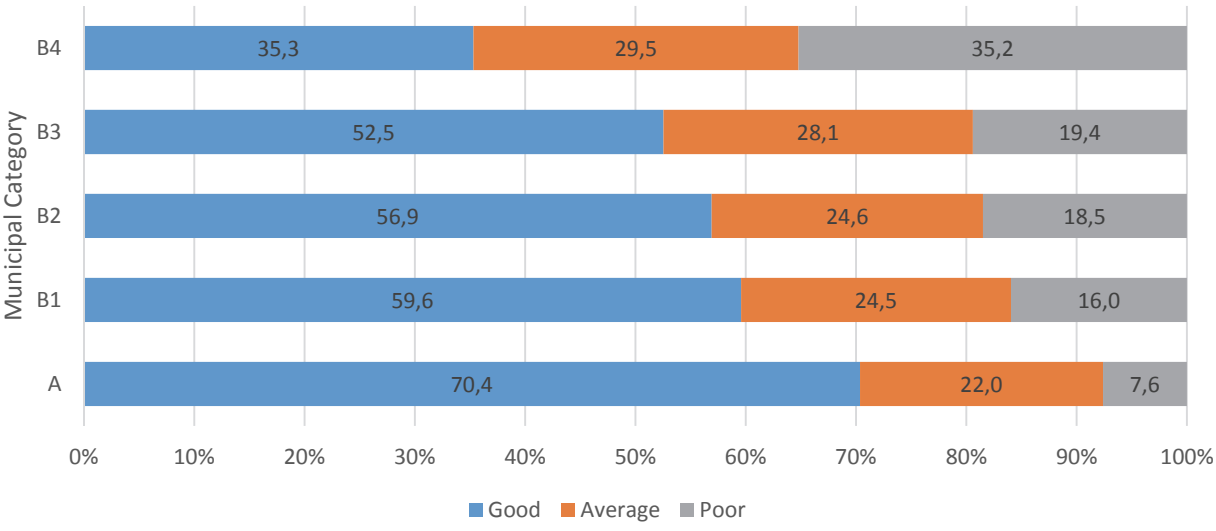
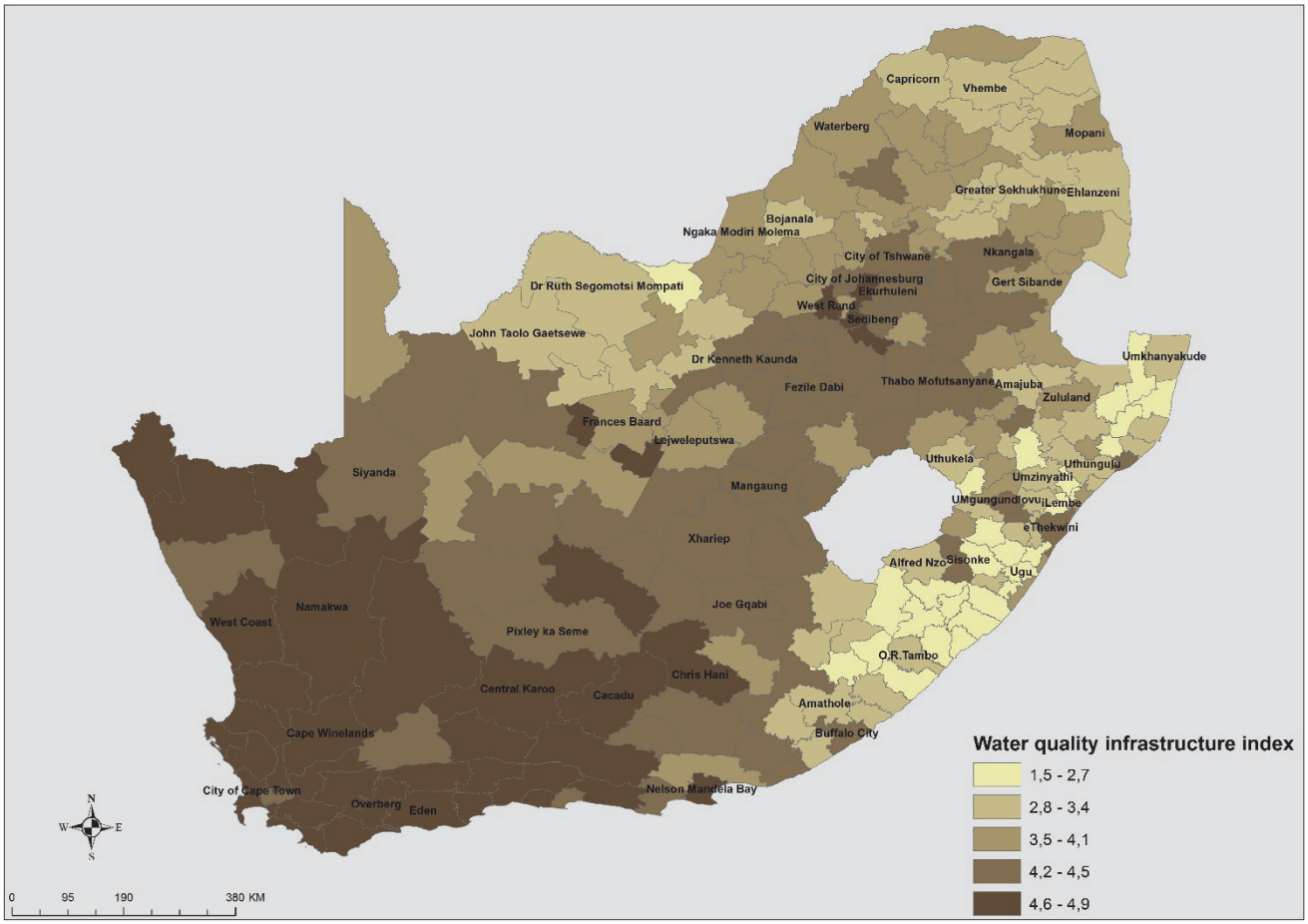


Figure 5.12 shows that the percentage of households that rated water services as 'good' was the highest in metros (70,4%), and that the percentage declines consistently across the other municipal categories until reaching its lowest figure in rural (B4) municipalities (35,3%). It is notable that almost equal percentages of households in rural municipalities rated the quality of their water services as 'good' or 'poor'.

5.7 Water services indices

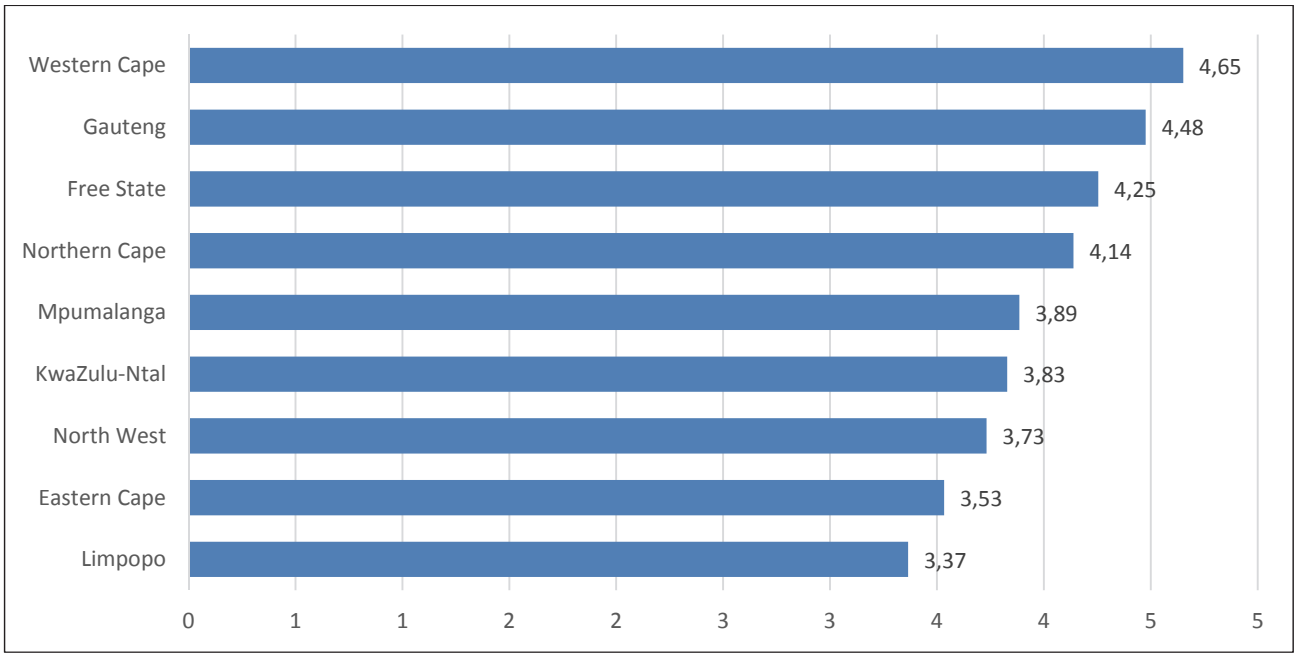
The water quality infrastructure index describes the engineering infrastructure in terms of the level of service that households have access to. Whereas a presentation on figures about the percentage of households with access to a particular level of service would provide a one-dimensional picture of service delivery in a particular jurisdiction, this method allows for a much more varied, and accurate description and measurement of engineering services. As mentioned in the methodology section (see section 4.2.1), the infrastructure quality was calculated by categorising the quality of infrastructure according to five levels, namely no service, minimum, basic, intermediate and full. Numerical values between 1 and 5 are allocated to each level of service, one being the lowest (no service) and five the highest (piped water in the dwelling), and the level of service provided is calculated as the average of the percentage of the population receiving a particular service. The index provides an indication of the quality of infrastructure provided and is expressed as a number between one and five. The results of the analysis to calculate a water infrastructure quality index is presented in Map 5.4 and is also presented in Addendum 3.

Map 5.4: Local Municipality water infrastructure quality index



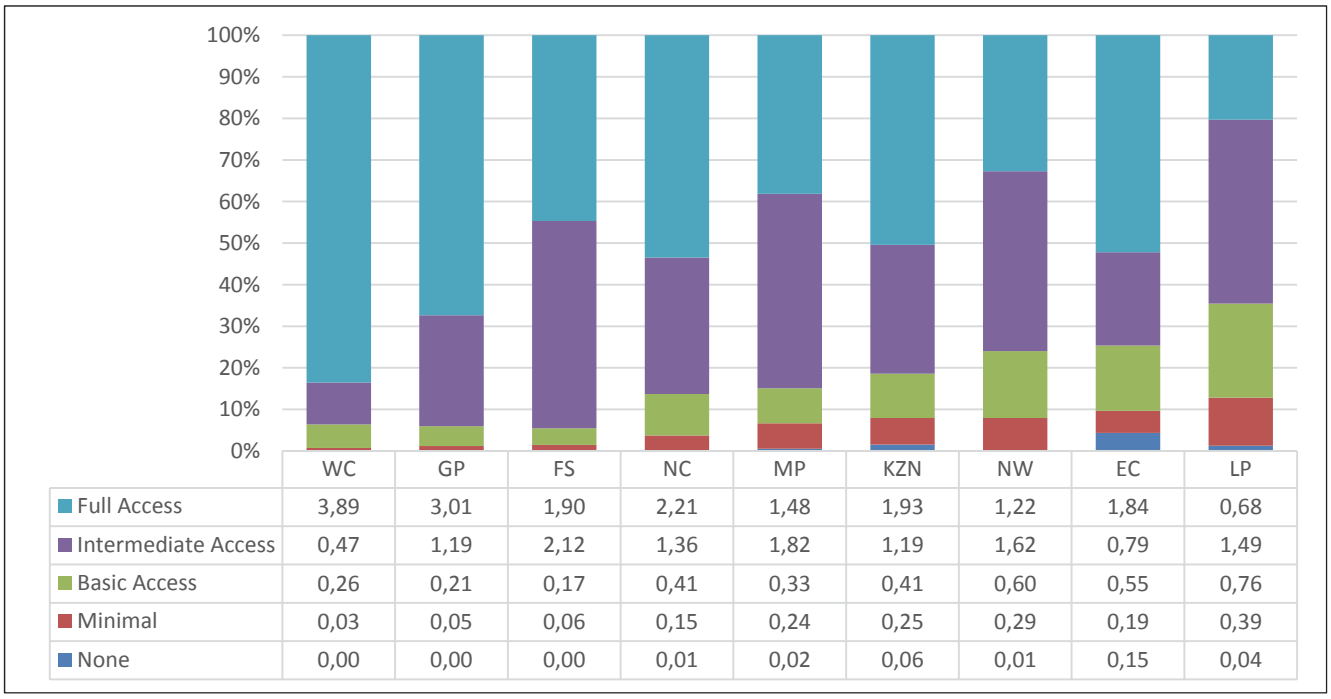
The infrastructure quality scores vary quite substantially between municipalities. At the bottom end of the scale, the municipalities with the poorest scores were Ngquza Hill (1,48), Mbizana (1,53) and Port St Johns (1,61). At the upper end of the scale, Cape Agulhas (4,87), Swellendam (4,84), Kannaland and Bergriver (both 4,82) had the highest index scores. Besides containing the six municipalities with the best index scores, 14 of the 20 municipalities with the highest index scores were located in Western Cape. Conversely, all but one (Ratlou in North West) of the twenty municipalities with the worst index scores were located in Eastern Cape with ten municipalities and KwaZulu-Natal with nine municipalities.

Figure 5.13: Water service infrastructure quality index by province, 2016



The average weighted water infrastructure quality index score is, however, lowest in Limpopo (3,37), followed by Eastern Cape (3,53), North West (3,73) and KwaZulu-Natal (3,83). All metropolitan municipalities had an index score of 4,17 or higher. Interestingly, the highest index score was reported for Nelson Mandela Bay (4,7), followed by the City of Cape Town (4,65) and Johannesburg (4,52). The lowest index scores were reported for Buffalo City (4,17) and Mangaung (4,27). This is presented in Figure 5.13.

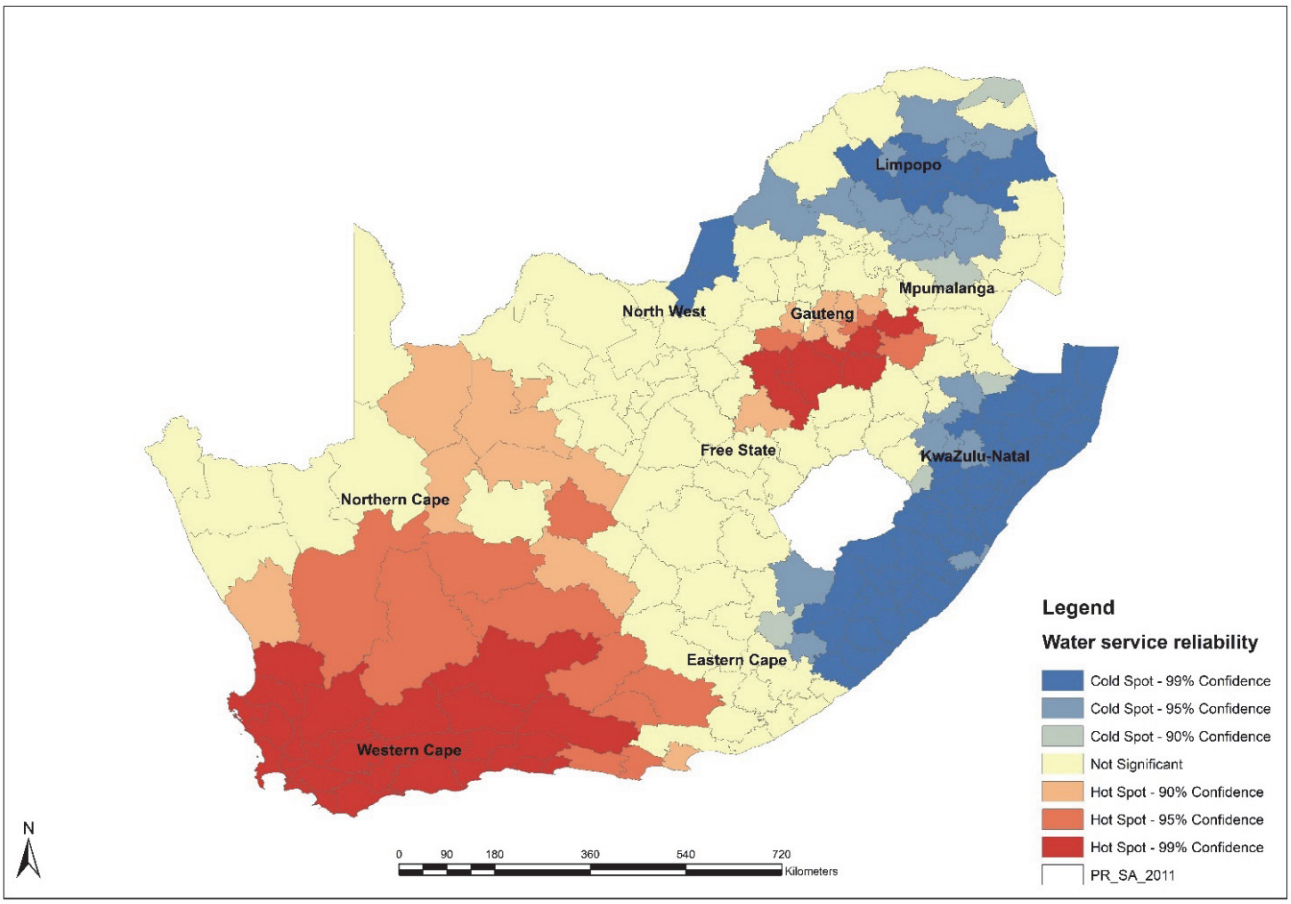
Figure 5.14: Comparison of infrastructure quality index by province, 2016



	WC	GP	FS	NC	MP	KZN	NW	EC	LP
Full Access	3,89	3,01	1,90	2,21	1,48	1,93	1,22	1,84	0,68
Intermediate Access	0,47	1,19	2,12	1,36	1,82	1,19	1,62	0,79	1,49
Basic Access	0,26	0,21	0,17	0,41	0,33	0,41	0,60	0,55	0,76
Minimal	0,03	0,05	0,06	0,15	0,24	0,25	0,29	0,19	0,39
None	0,00	0,00	0,00	0,01	0,02	0,06	0,01	0,15	0,04

When looking at the individual index score as viewed in terms of the contribution of the constituent infrastructure levels (Figure 5.14) it becomes clear that most households had access to full or intermediate water services in municipalities with high scores, while municipalities with low index scores were characterised by a relatively large proportions of households with none, minimal or basic access to water services.

Map 5.5: Water Infrastructure reliability by local municipality, 2016



Map 5.5 presents the results of a hot spot analysis of the water services reliability index as measured through the length of interruptions experienced by households during the three months preceding the survey. Looking at the geographic interdependence between regions, the analysis identifies statistically significant hot or cold areas. Hot spots represent significant clusters of low values (relatively few interruptions), while cold spots represent significant clusters of high values (high percentage of disruptions). Hot spot municipalities were largely concentrated in Western Cape, Gauteng, and Northern Free State. Cold spot municipalities were mostly clustered across Eastern Cape and KwaZulu-Natal as well as central Limpopo.

Figure 5.15: Correlation between poverty headcount and Water Infrastructure Quality Index by local municipality, 2016

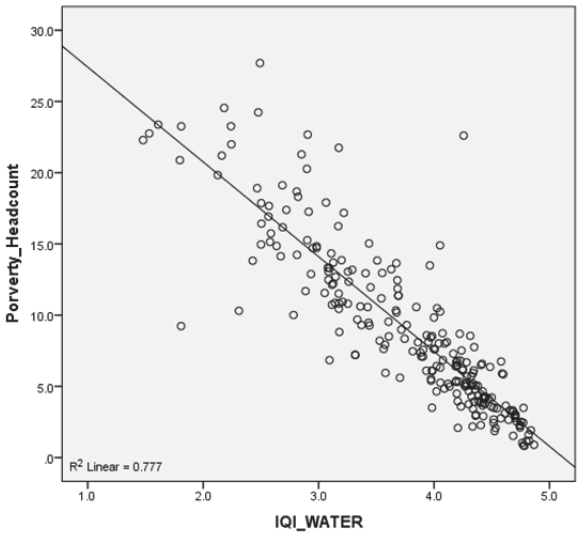


Figure 5.15 shows a strong inverse correlation between municipal poverty headcount and the quality of water infrastructure installed in a municipality. Water infrastructure tend to be better in municipalities with fewer poor households. The model explains 77,7% of the variation around the mean.

Figure 5.16: Correlation between the Water Infrastructure Quality Index and household perceptions of water services as 'good' by local municipality, 2016

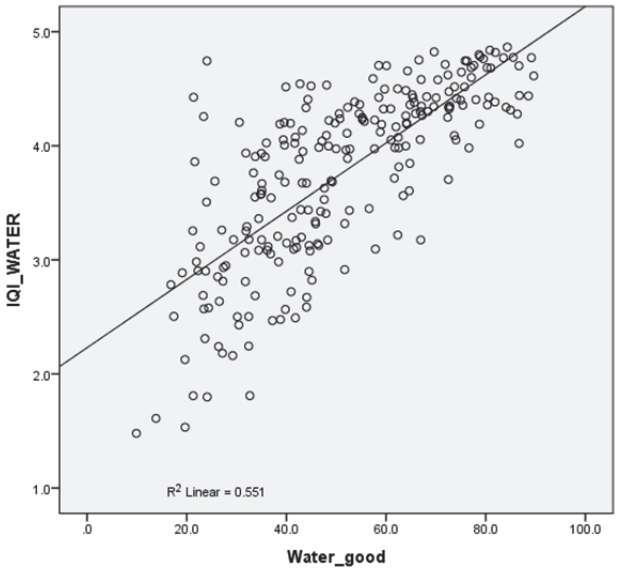


Figure 5.16 depicts a relatively strong positive correlation between the water quality index and the percentage of households that rated the quality of water services as 'good'. A linear regression models shows that the model explains 55,1% of the variation around the mean.

5.8 Summary and conclusions

Although approximately 89,8% of households in South Africa used piped water as main source of drinking water, 4,3% of households still relied on water from unsafe sources such as rivers, streams, wells or springs. Household access to piped water is closely associated with the type of municipality households reside in. Whereas 62,6% of households in metros had access to piped water in the dwelling, only 6,8% of households in rural B4 municipalities had similar access. Inversely, 31% of households in B4 municipalities did not have access to piped water compared to 1,7% in metros.

Access to an improved source of water is equally varied as virtually all households in provinces such as Western Cape, Free State and Gauteng have access to water while almost one-quarter of households in Eastern Cape (24,0%) and 11,6% of households in KwaZulu-Natal depended on unimproved sources of water. In total 1,7 million households (8,8%) did not have access to piped water, while 891 224 households did not have access to improved water. The backlogs are largely concentrated in the predominantly rural B4 municipalities where more than one-quarter (27,5%) of households did not have access to an improved source of water.

Although 83,5% of households receive water from municipalities, 4,7% of households still relied on unsafe sources such as rivers, dams and streams. This figure is as high as 22,5% in Eastern Cape.

Community Survey 2016 found that 23,4% of households experienced some water interruptions in the three months before the study. However, large differences exist, pointing to large variations in the reliability of water supply across the country. While 85,1% of households reported interruptions in the Big 5 False Bay, the figure was 1,6% for Hantam. Interruptions were much less common in metros and larger municipalities than in B4 municipalities.

Although Government is committed to the sustainable operation of water facilities as measured through the availability of water for at least 350 days per year and the absence of interruptions that last more than 48 consecutive hours per incident, results of the community survey show that 61,9% of households that experienced water interruptions reported that it lasted longer than two consecutive days. This finding varied significantly between municipalities as the percentage of households that reported such long interruptions varied from less than 6% in municipalities like Baviaans and Siyathemba, to more than 90% in municipalities such as Karoo Hoogland.

Nationally, 15,9% of the households that experienced water interruptions during the three months before the survey, reported that they experienced water interruptions for a total of 14 days over the preceding 90 days.

Household perceptions of water services stood at about 59% nationally, although large geographic variation occurs. While almost nine-tenths of households in Western Cape and Gauteng municipalities were satisfied with services, less than 10% of households in Ngquza Hill were satisfied.

The water services index aims to move beyond merely providing a single access figure, by providing a more representative picture of the whole range of water services that are provided by municipalities. The index finds that the available infrastructure and accompanying service levels are worst in the poorer, mostly rural households in Eastern Cape, KwaZulu-Natal and Limpopo where many households have to rely on basic or intermediary services.

6 Sanitation services

6.1 Background

The White paper on basic household sanitation (DWAF, 2001) emphasises the provision of a basic level of household sanitation to those areas with the greatest need. It focuses on the safe disposal of human waste in conjunction with appropriate health and hygiene practices. The key to this White Paper is that provision of sanitation services should be demand driven and community based with a focus on community participation and household choice.

The Strategic Framework for Water Services (2003) is committed to provide **basic sanitation facilities** that: are safe, reliable, private, protected from the weather and ventilated; keeps smells to a minimum; is easy to keep clean; minimises the spread of sanitation-related diseases by facilitating appropriate control of disease-carrying flies and pests; and enables safe and appropriate treatment and/or removal of human waste and waste water in an environmentally sound manner. In terms of basic sanitation services, the framework aims to ensure that sanitation facilities are easily accessible to households and sustainable, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary. Services should also advance the communication of good sanitation, hygiene and related practices.

The Department of Water and Sanitation (DWS) is mandated to regulate the sanitation sector in South Africa, and to provide macro planning, bulk regional services and monitoring. The constitution commits the national and provincial governments to monitor and regulate the performance of municipalities with respect to the functions listed in Schedules 4 and 5 of the constitution (DWS, 2016).

The sanitation sector is currently regulated by three policy documents, namely the White Paper on Water Supply and Sanitation (1994); the White Paper on a National Water Policy of South Africa (1997), and the White Paper on Basic Household Sanitation (2001). Since the White Paper on Basic Household Sanitation is predominantly focussing on rural sanitation and on-site systems, the Draft National Sanitation Policy of 2012 was developed to address the entire sanitation value chain.

South Africa is expected in future to experience increased urbanisation, placing greater burden on urban sanitation systems. At the same time, growing and changing human settlement types in rural areas will place increased strain on small and limited sanitation systems. Sanitation services in future will need to place greater emphasis on human settlement appropriate systems, where significant consideration of available resources such as water will be needed to choose between different sanitation systems. Increased emphasis will also be placed on the improved sustainability of services by recognizing the economic value of sanitation.

The policy endorses the national sanitation targets, as outlined in the MTSF, of an increase in the percentage of households with access to a functional sanitation service from 84% in 2013 to 90% by 2019, including elimination of bucket sanitation in the formal areas. The policy adopts the MTSF position that work will proceed to progressively reduce differences in access to adequate sanitation, as well as in reversing apartheid geography and strengthening the social wage. Initiatives that will enable societal engagement to improve service delivery will include promoting citizen-based monitoring of government service delivery.

6.1.1 National Development Plan

Providing adequate sanitation to all households is, however, a major challenge due to factors such as rapid population growth, overcrowded and unplanned informal settlements, inability of households to pay for services, and inadequate maintenance of existing infrastructure. According to the NDP, all South

Africans should have full, affordable and reliable access to sufficient safe water and hygienic sanitation by 2030 (NPC, 2011). The constitution allocates the duty to provide water to municipalities, with support and oversight from the provincial and national levels.

6.1.2 MTSF 2014–2019

The MTSF (2014–2019) aims to increase the percentage of households with access to a functional sanitation service from 84% in 2013 to 90% by 2019, including elimination of bucket sanitation in the formal areas.

6.1.3 SDGs

South Africa achieved the MDG target to halve the proportion of the population without sustainable access to improved sanitation by 2012, three years before the target date of 2015. Although the percentage of people with access to an improved sanitation facility increased from 49,3% in 1996 to 76,8% in 2013 (Stats SA, 2015), significant additional improvement is still required, not least with regards to eliminating the use of bucket toilets. Although the bucket eradication programme failed to completely replace the use of buckets in established settlements with more acceptable forms of sanitation, significant progress has been made (Treasury, 2011).

According to SDG goal 6, access to adequate and equitable sanitation and hygiene should be universal by 2030, while open defecation should be eradicated completely.

Despite large improvements in the provision of water, many households still lack access to safe, affordable and reliable sanitation services. The expansion of appropriate services needs to be balanced with the maintenance of existing infrastructure.

6.2 Access to sanitation

Adequate access to proper sanitation is vital to preserve the health of populations. For this reason, Government aims to increase the percentage of households with access to a functional sanitation service to 90% by 2019 and to eliminate of bucket sanitation in the formal areas.

Table 6.1: Percentage household access to sanitation by province, 2016

	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Flush toilet connected to public sewerage system	90,5	44,4	63,2	70,1	43,1	43,9	84,4	43,0	20,8	60,6
Flush toilet connected to a septic system	2,9	2,3	5,9	2,1	3,7	3,8	1,9	2,7	2,8	2,7
Chemical toilet	1,2	5,6	0,3	2,1	14,6	0,9	1,5	3,3	1,6	4,2
Pit latrine with ventilation pipe	0,1	27,7	9,4	6,8	18,3	16,9	2,1	14,7	28,0	12,2
Pit latrine without ventilation pipe	0,2	9,6	9,8	11,2	12,2	28,2	6,1	28,8	39,8	13,7
Ecological toilet	0,0	0,4	0,3	0,2	0,7	0,3	0,1	0,5	0,1	0,3
Bucket toilet (collected by municipality)	2,9	1,3	2,9	2,5	0,4	0,1	2,3	0,2	0,1	1,4
Bucket toilet (emptied by household)	0,8	0,9	1,4	1,4	1,3	0,5	0,4	0,7	0,6	0,8
Other	0,5	1,9	1,1	2,0	3,1	1,5	0,6	3,0	2,0	1,6
None	0,9	5,9	5,5	1,7	2,5	3,9	0,5	3,1	4,3	2,4
Percent	**100,0**	**100,0**	**99,9**	**100,1**	**99,9**	**100,0**	**99,9**	**100,0**	**100,1**	**99,9**
Numbers (thousands)	**1 934**	**1 773**	**354**	**947**	**2 876**	**1 249**	**4 951**	**1 239**	**1 601**	**16 923**

Tale 6.1 shows that 63,3% of households in South Africa used flush toilets connected to either the public sewerage or a local septic system. A further 12,2% of households used pit toilets with ventilation pipes, while a small percentage (0,3%) mainly used a combination of solutions that included ecological and urine diversion toilets. Many households continue to have poor access to adequate sanitation as can be seen from the 13,7% of households that used pit toilets without ventilation pipes, 2,2% that still used some kind of bucket system, and 2,4% that had no access to sanitation.

The situation, however, varies significantly by province. While flush toilets were quite common in Western Cape (93,4%) and Gauteng (86,3%), they were much less common in Limpopo (23,6%), Mpumalanga (45,7%), Eastern Cape (46,7%), KwaZulu-Natal (46,8%) and North West (47,7%). Pit latrines without ventilation pipes were most common in Limpopo (39,8%), Mpumalanga (28,8%) and North West (28,2%).

Table 6.2: Household access to sanitation in South Africa, 2011 and 2016

	2011	2016	Change
Flush toilet connected to public sewerage system	57,0	60,6	3,6
Flush toilet connected to a septic system	3,1	2,7	-0,4
Chemical toilet (including ecological sanitation)	2,5	4,5	2,0
Pit latrine with ventilation pipe	8,8	12,2	3,4
Pit latrine without ventilation pipe	19,3	13,7	-5,6
Bucket toilet	2,1	2,2	0,0
Other	2,1	1,6	-0,5
None	5,2	2,4	-2,8

Although many households still lack adequate sanitation, Table 6.2 shows that the situation has improved between 2011 and 2016. While the percentage of households with access to flush toilets (+3,6 pp) and pit latrines (+3,4 pp) with ventilation pipes have increased between 2011 and 2016, the percentage of households that used pit toilets without ventilations pipes decreased by 5,6 percentage points while the percentage of households without any sanitation declined by 2,8 percentage points.

6.2.1 Improved access to sanitation

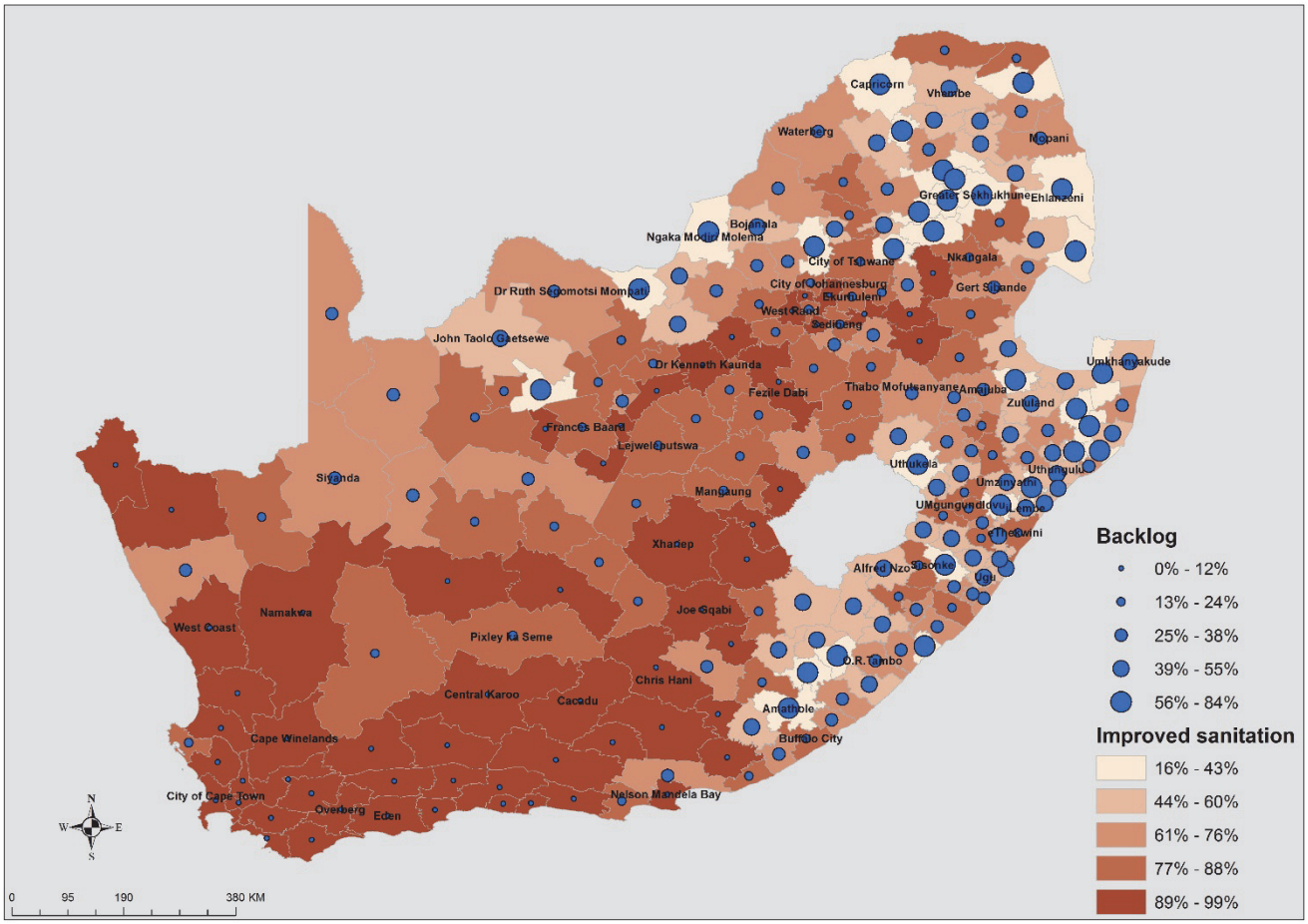
Improved and unimproved sanitation refers to the management of human faeces at the household level. The concepts have been adopted to serve as reasonable and measurable proxy measures of sustainable access to basic sanitation, and it was originally developed by the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation to serve as an indicator for the MDG target on sanitation (WHO JMP). Following this classification, the classification of improved and unimproved sources of sanitation for the purposes of this report is presented in Table 6.3. Improved sanitation is defined as all sources of sanitation where human contact with faeces is prevented.

Table 6.3: Improved sanitation methodology

Improved sanitation facilities	Unimproved sanitation facilities
Flush toilet	Flush or pour-flush to elsewhere
Flush or pour-flush to:	Pit latrine without slab or open pit
-piped sewer system	Bucket
-septic tank	Hanging toilet or hanging latrine
-pit latrine	No facilities or bush or field (open defecation)
Ventilated improved pit latrine (VIP)	Shared or public facilities
Pit latrine with slab	
Composting toilet	

Source: Joint Monitoring Programme (JMP) for Water Supply and Sanitation

Map 6.1: Percentage of households with access to an improved sanitation facility by local municipality and the backlog, 2016



The percentage of households with access to an improved source of sanitation per local municipality is presented in Map 6.1. The map highlights the large variation in the percentage of households that had access to improved sources of sanitation across the country. The poorest access to improved sanitation was noted in Maphumulo (16,1%), Makhuduthamaga (20,8%), Mfolozi (21,7%), Nongoma (23,5%) and Bushbuckridge (24,3%). By contrast, households in Overstrand (99,2%), Hessequa (98,7%), Stellenbosch, Bergriver and Camdeboo (all 98%) enjoyed almost universal access to improved sanitation.

Table 6.4: Municipalities with the highest and lowest household access to improved sanitation, 2016

Highest access			Lowest access		
Municipality	**Province**	**Percent**	**Municipality**	**Province**	**Percent**
Overstrand	Western Cape	99,2	Maphumulo	KwaZulu-Natal	16,1
Hessequa	Western Cape	98,7	Makhuduthamaga	Limpopo	20,8
Stellenbosch	Western Cape	98,0	Mfolozi	KwaZulu-Natal	21,7
Bergrivier	Western Cape	98,0	Nongoma	KwaZulu-Natal	23,5
Camdeboo	Eastern Cape	98,0	Bushbuckridge	Mpumalanga	24,3
Laingsburg	Western Cape	97,9	Elias Motsoaledi	Limpopo	25,2
Drakenstein	Western Cape	97,8	eDumbe	KwaZulu-Natal	26,5
Beaufort West	Western Cape	97,5	Port St Johns	Eastern Cape	26,7
Swellendam	Western Cape	96,9	Thembisile	Mpumalanga	29,1
Kgatelopele	Northern Cape	96,7	Hlabisa	KwaZulu-Natal	29,4
Witzenberg	Western Cape	96,6	Umzimkhulu	KwaZulu-Natal	29,8
Swartland	Western Cape	96,2	Greater Tubatse	Limpopo	33,7
Mossel Bay	Western Cape	96,1	Aganang	Limpopo	34,0
Prince Albert	Western Cape	96,1	Ntambanana	KwaZulu-Natal	36,7
Govan Mbeki	Mpumalanga	96,0	Okhahlamba	KwaZulu-Natal	37,1
Gariep	Eastern Cape	95,9	Jozini	KwaZulu-Natal	39,1
Emthanjeni	Northern Cape	95,7	Lepele-Nkumpi	Limpopo	39,6
City of Matlosana	Free State	95,7	Ramotshere Moiloa	North West	39,7
Matzikama	Western Cape	95,3	Amahlathi	KwaZulu-Natal	40,0
George	Western Cape	95,1	Nkomazi	KwaZulu-Natal	40,4

Fourteen of the 20 municipalities with the highest household access to improved sanitation (including the top four) were located in Western Cape (Table 6.4). Inversely, 11 of the 20 municipalities with the lowest household access to improved sanitation were located in KwaZulu-Natal.

Table 6.5: Household backlog in terms of access to improved sanitation by municipal categories, 2016

Municipal Category	Access to improved sanitation	No Access to improved sanitation	Total	Backlog
Metro (A)	6 585 721	960 574	7 546 295	12,7
Secondary city (B1)	1 960 433	620 923	2 581 356	24,1
Large town (B2)	1 024 083	348 523	1 372 606	25,4
Small town (B3)	1 613 470	563 990	2 177 460	25,9
Rural municipality (B4)	1 602 183	1 643 408	3 245 591	50,6
South Africa	**12 785 891**	**4 137 418**	**16 923 309**	**24,4**

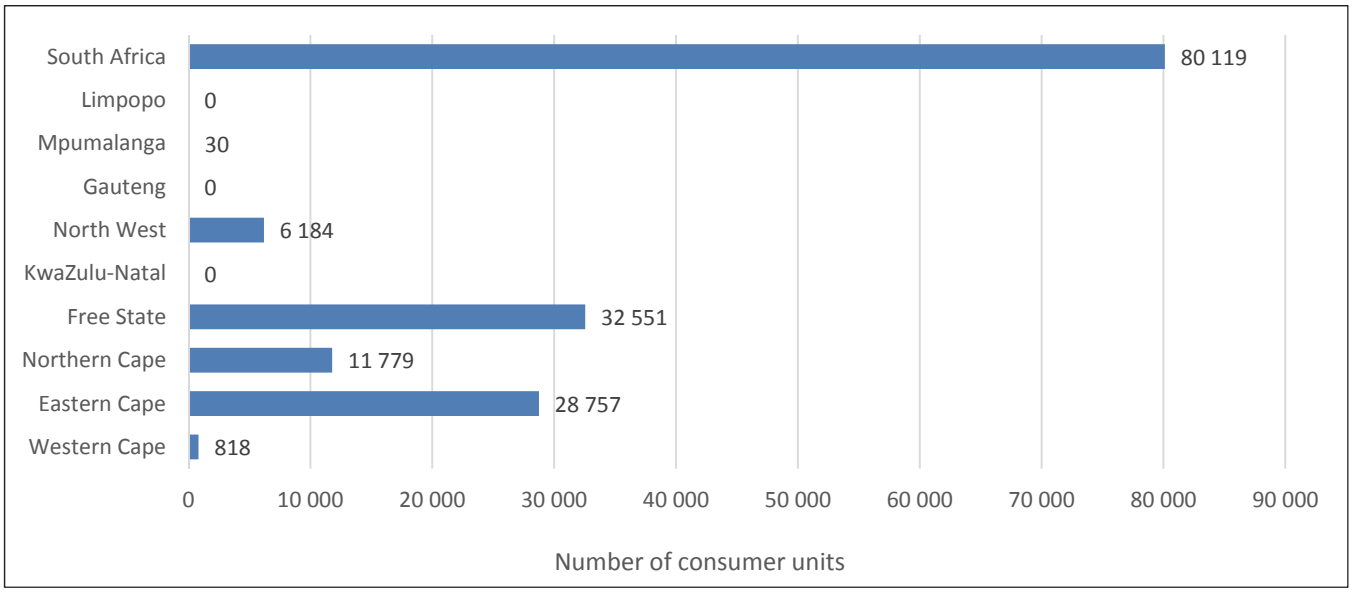
Although more than three-quarters (75,6%) of households have access to an improved source of sanitation, nationally, access varies widely between different municipalities. The backlog in access to improved sources of sanitation is presented in Map 6.1. Table 6.5 calculates the sanitation backlog in terms of the percentage of households that do not have access to an improved sanitation facility. The table shows that the backlog is lowest (12,7%) in metropolitan municipalities, and highest in the largely rural B4 municipalities (50,6%). Although the backlog is relatively low in metropolitan municipalities (on average 12,7%), large backlogs are particularly notable in eThekwini (22,7%), Mangaung (21,1%) and the City of Tshwane (18,7%). Expressed as a number, 4,1 million households did not have access to improved sanitation in 2016.

6.2.2 Bucket toilet system

According to the WRC (2016), the eradication of the bucket system was motivated by a practical concern that it was unhygienic and expensive to maintain, as well as a concern that the system was violating the

human dignity of users and those responsible for collection and disposal of human waste. Despite attempts to have eradicated the system across all municipalities, the phenomenon persists.

Figure 6.1: Number of consumer units using the bucket system provided by municipalities in each province, 2015



Source: Non-financial census of municipalities for the year ending 30 June 2015

Reporting results from the Non-Financial Census of municipalities, Stats SA (2016) reports that 80 119 bucket toilets were still in use during the financial year that ended on 30 June 2015. Figure 6.1 shows that 80 119 consumer units received sanitation services in the form of bucket toilets. While three provinces (Limpopo, Gauteng and KwaZulu-Natal) reported complete eradication of the system, more than three-quarters (76,5%) of all remaining bucket toilets were reported in Free State and Eastern Cape. A total of 47 municipalities across the country reported that they still used buckets to provide sanitation services.

Table 6.6: Number of households that reported using bucket toilets, 2016

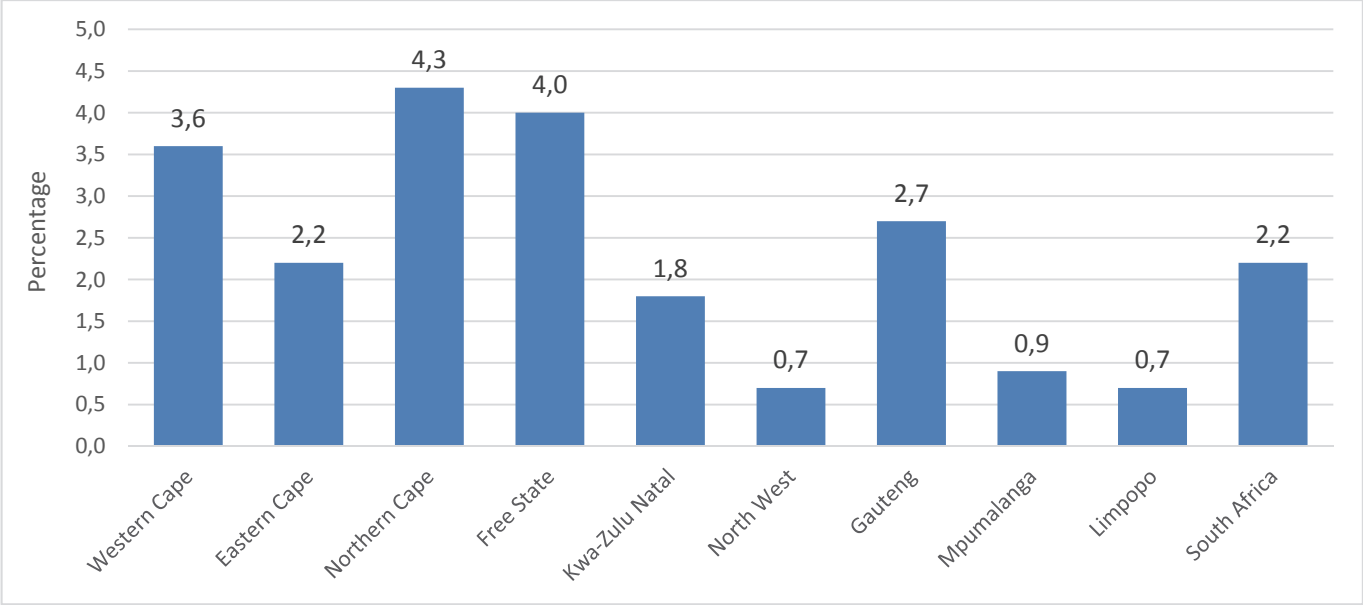
Province	Bucket toilet (collected by municipality)	Bucket toilet (emptied by household)	Total
Western Cape	55,348	14,506	69,854
Eastern Cape	22,882	15,435	38,317
Northern Cape	10,201	5,073	15,274
Free State	24,131	13,650	37,781
Kwa-Zulu Natal	12,409	38,245	50,654
North West	1,751	6,416	8,167
Gauteng	113,594	21,777	135,371
Mpumalanga	2,544	8,500	11,044
Limpopo	1,551	9,217	10,768
South Africa	**244,411**	**132,820**	**377,231**

The difficulty experienced in measuring progress made with regards to the eradication of bucket toilets using survey data is clearly illustrated in Table 6.6. Whereas municipalities reported that a total of 80 119 consumer units were provided with buckets, 377 231 households reported in CS 2016 that they used

bucket toilets as their main source of sanitation. In addition, the use of bucket toilets were reported in all provinces, including those that reportedly eradicated its use.

Establishing the use of bucket toilets is clouded by the terminology and by households' understanding of what a bucket toilet/system is. It is important to firstly differentiate between consumer units and households. Consumer units refer to an entity to which the service is (or would be) delivered, and which receives one bill if the service is billed, alternatively known as a delivery point. Although often referred to as households, this is incorrect as households and consumer units do not necessarily coincide one to one, particularly in blocks of flats, on stands where there are multiple households in the same dwelling, or in additional dwellings, such as garden flats, backyard rooms, etc., and in the case of public toilets (Stats SA, 2016).

Figure 6.2: Households using the bucket toilet system by province, 2016



While some households still depend on buckets provided and emptied by municipalities, other households mistakenly refer to bucket toilets when they refer to buckets that households use at night due to fear of going outside and which they then empty themselves at their earliest convenience. In an effort to differentiate between the actual use of the bucket toilet system and the practice of using the bucket toilet system only at night, the 'bucket toilet' option was improved in CS 2016 to include 'bucket toilet emptied by the municipality' and 'bucket toilet emptied by the household'. This has, however, not solved the problem as the majority (64,7%) of households that used bucket toilets still indicated that their bucket toilets were provided and emptied by municipalities.

Regardless of the confusion, 2,2% of households in South Africa indicated that they used some kind of bucket toilet, thus potentially bringing family members in contact with faecal matter and risking their health and well-being.

Although not a single household reported using a municipal bucket in 110 municipalities, the reported prevalence was much higher in Kwa Sani (28,6%), Setsotso (19%), Siyancuma (16,7%) and Mafube (16,4%).

6.2.3 No access to sanitation services

Lack of sanitation refers to the absence of sanitation services. Households without access usually revert to open defecation and this represents a serious health risk which contributes significantly to the burden of disease and which necessitates concerted interventions.

Figure 6.3: Percentage of households that lack sanitation by province, municipal category, and rural and urban, 2016

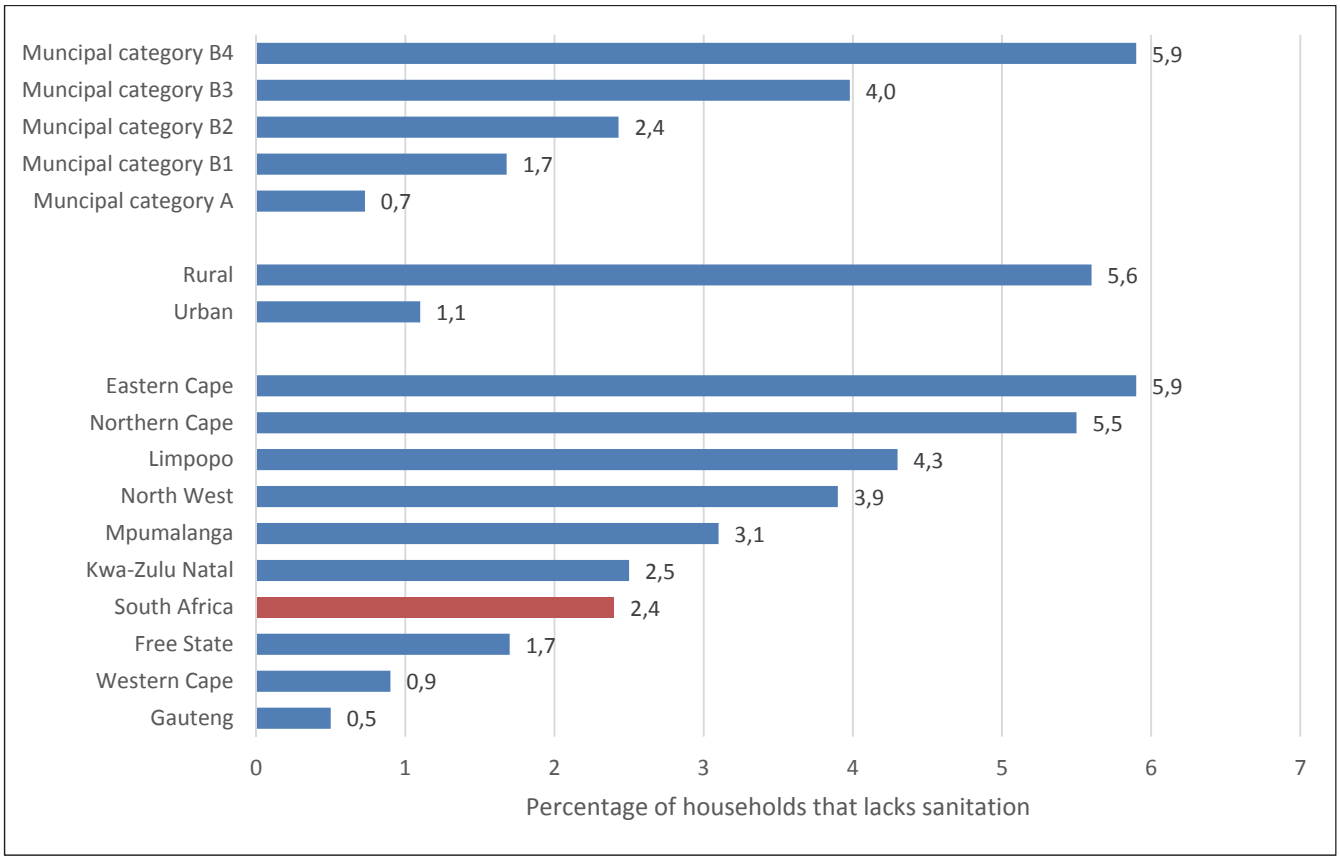


Figure 6.3 shows that the percentage of households that lacked sanitation increased as municipalities became more rural. The difference between households without access to sanitation in rural (5,6%) and urban (1,1%) areas is, however, relatively small. Whereas less than one per cent of households in urban provinces such as Gauteng (0,5%) and Western Cape (0,9%) lacked sanitation, this was true for more than five percent of households in the largely rural provinces of Eastern Cape (5,9%) and Northern Cape (5,5%). Lack of sanitation was most common in Intsika Yethu and Mbhashe (both 21,1%), Engcobo (20,3%), Great Kei (20,2%) and Port St Johns (19,7%). The figure exceeded 10% in 19 municipalities.

6.3 Free Basic Sanitation

A Free Basic Sanitation (FBSan) implementation strategy was adopted in 2009, following the release of the Free Basic Water (FBW) implementation strategy in 2001 and the adoption of the Free Basic Services (FBS) policy in 2000. The policy for Free Basic Sanitation promotes affordable access of poor households to at least a basic level of sanitation service. The service will be targeted to indigent households, identified based on targeting approaches in the Water services Act, and involves ensuring basic services to households that are unable to pay for it by addressing the cost associated with the ongoing operation and maintenance of any type of sanitation system as well as ongoing hygiene Education. Basic sanitation services involve the provision of a basic facility that is easily accessible to households, and which can be operated sustainably. In order to provide this service, water services

authorities must ensure that the costs of providing the service are covered by the Local Government Equitable Share and/or through cross-subsidies within the water services authority area. The funds must be paid to the water services provider who operates the service or directly to the households.

Providing Free Basic Sanitation (FBSan) services to all South Africans places a significant burden on the state and on the Water Service Authorities (WSAs). In order to stretch the limited available resources, there is a need to target those most in need, in a sustainable and equitable manner.

Table 6.7: Number of households that received free basic sanitation and sewerage services by province, 2011–2015

Province	Basic sanitation services				
	2011	2012	2013	2014	2015
Western Cape	1 014 527	1 036 963	1 061 682	1 085 493	1 116 636
Eastern Cape	1 021 752	1 041 070	1 142 293	1 344 641	1 421 781
Northern Cape	237 708	244 210	256 976	260 464	272 595
Free State	665 955	663 630	718 743	699 689	735 661
KwaZulu-Natal	1 675 267	1 739 073	1 867 052	1 982 765	2 024 193
North West	588 158	609 845	679 569	726 637	752 275
Gauteng	2 708 004	2 511 510	2 459 296	2 564 540	2 617 211
Mpumalanga	820 665	872 629	906 416	969 952	1 104 528
Limpopo	635 586	681 752	761 966	800 403	825 580
South Africa	**9 367 622**	**9 400 682**	**9 853 993**	**10 434 584**	**10 870 460**
Province	**Free Basic Sanitation**				
	2011	**2012**	**2013**	**2014**	**2015**
Western Cape	744 467	699 058	738 830	749 909	776 682
Eastern Cape	504 772	464 771	501 222	538 619	631 086
Northern Cape	72 107	73 863	58 353	56 013	64 872
Free State	158 548	154 896	144 716	146 197	133 958
KwaZulu-Natal	508 754	233 026	397 867	457 573	452 409
North West	81 645	98 439	97 872	102 935	87 165
Gauteng	318 790	733 368	891 986	905 429	866 635
Mpumalanga	102 851	139 392	97 053	102 273	91 989
Limpopo	189 941	216 694	207 705	226 445	204 041
South Africa	**2 681 875**	**2 813 507**	**3 135 604**	**3 285 393**	**3 308 837**
Percent FBSan	**28,6**	**29,9**	**31,8**	**31,5**	**30,4**

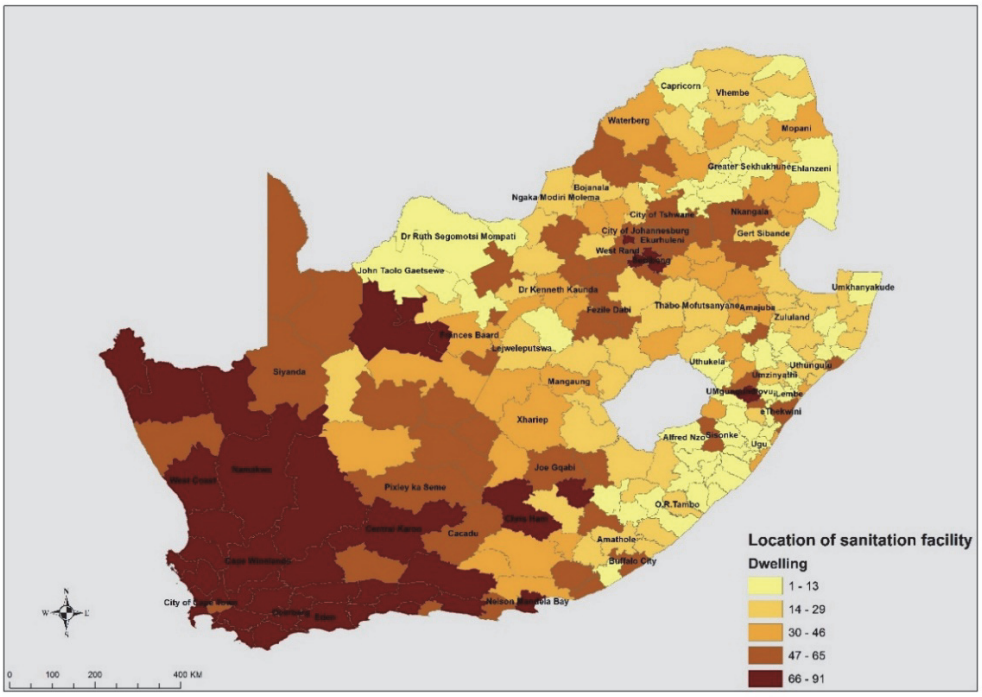
Source: Non-Financial Census of Municipalities for the financial year ending 30 June 2015.

Using the results from the non-financial census of municipalities for the year ending 30 June 2015, Stats SA (2016) reported that municipalities provided basic sanitation and sewerage services to 10,9 million consumer units, of whom 3,3 million (30,4%) received the basic services free of charge. Since this service is only available to households in that area already connected to the sewerage networks, this policy does not benefit poor vulnerable households living in rural areas and in dense informal settlements (Tissington, 2011).

6.4 Efficiency of sanitation services

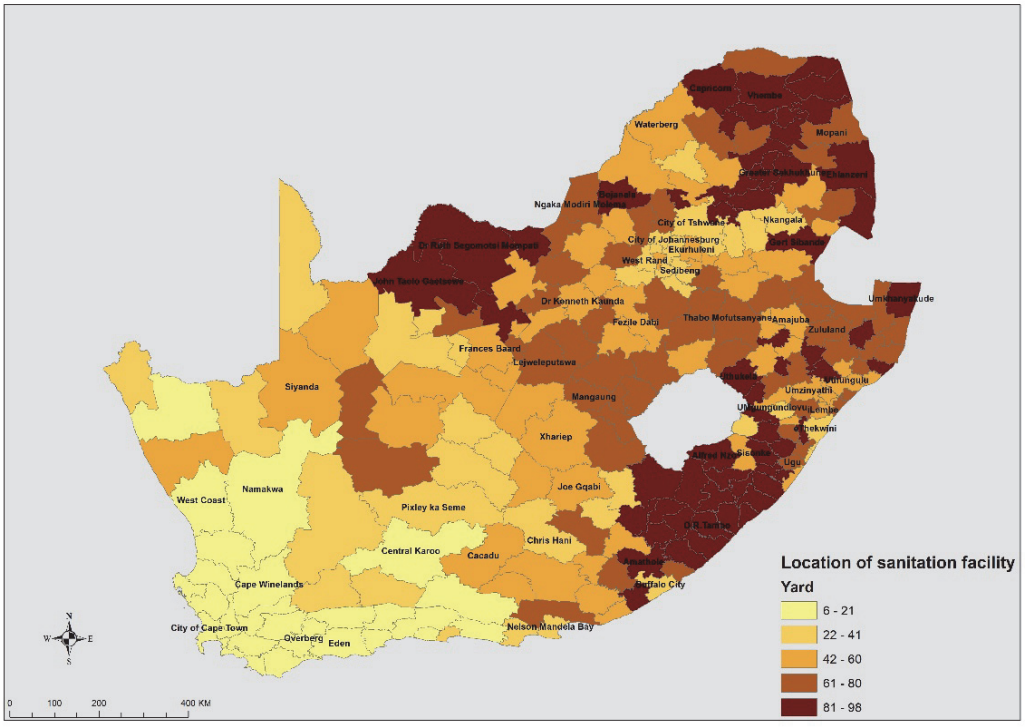
Government has prioritised the provision of basic water and sanitation to all households in a way that is easily accessible to households, and sustainable to provide. Although accessibility is not described in terms of any particular distance, as with water, the impracticality of walking longer distances to access toilets, particularly if users might encounter queues, require relative closer proximity. This is particularly true for vulnerable individuals, particularly young children, elderly people and people with disabilities, who might find it more difficult to walk. Although public latrines are not considered to provide proper access, shared toilets are acceptable.

Map 6.2: Percentage of households whose main toilet facility is located in the dwelling, by local municipality, 2016



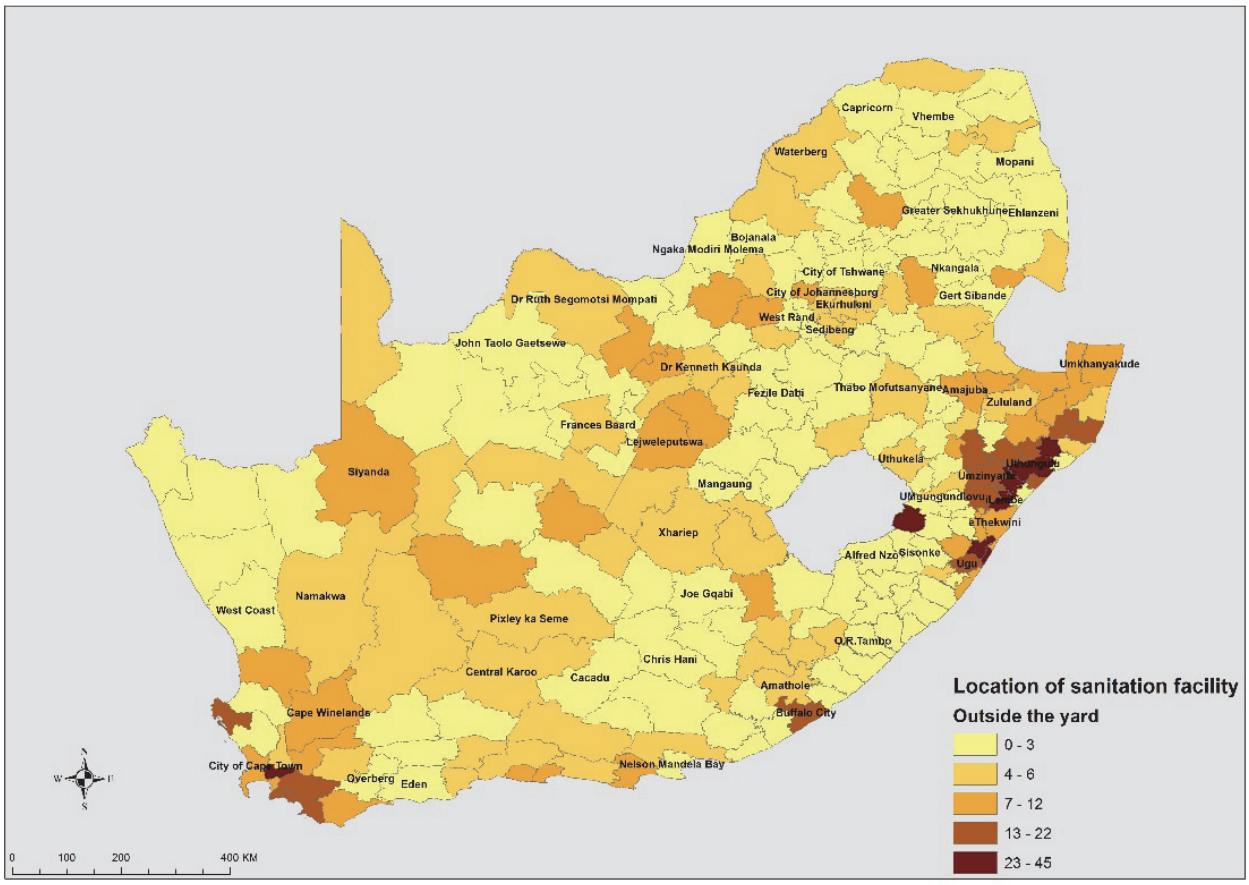
Map 6.2 illustrates a large variation between different municipalities in terms of the location of the main toilet facility in the dwelling. The highest prevalence of toilet facilities in the dwelling was reported in Hessequa (91,4%), Oudtshoorn (89,3%), Swellendam (87,8%), Kannaland and Langeberg (both 86,3%) while the lowest proportions were reported in Ntabankulu (0,7%), Mhlontlo (0,7%), Nyandeni (1,6%), and Aganang (1,7%). The map shows that indoor sanitation was most prevalent in municipalities in the Western and Northern Cape, and least so in the most rural municipalities in Eastern Cape, KwaZulu-Natal, North West and Limpopo.

Map 6.3: Percentage of households whose main toilet facility is located in the yard, by local municipality, 2016



Most of the municipalities where very low access to toilet facilities were reported in the dwellings, however, reported relatively high access to sanitation facilities in the yard. This is presented in Map 6.3.

Map 6.4: Percentage of households whose main toilet facility is located outside the yard, by local municipality, 2016

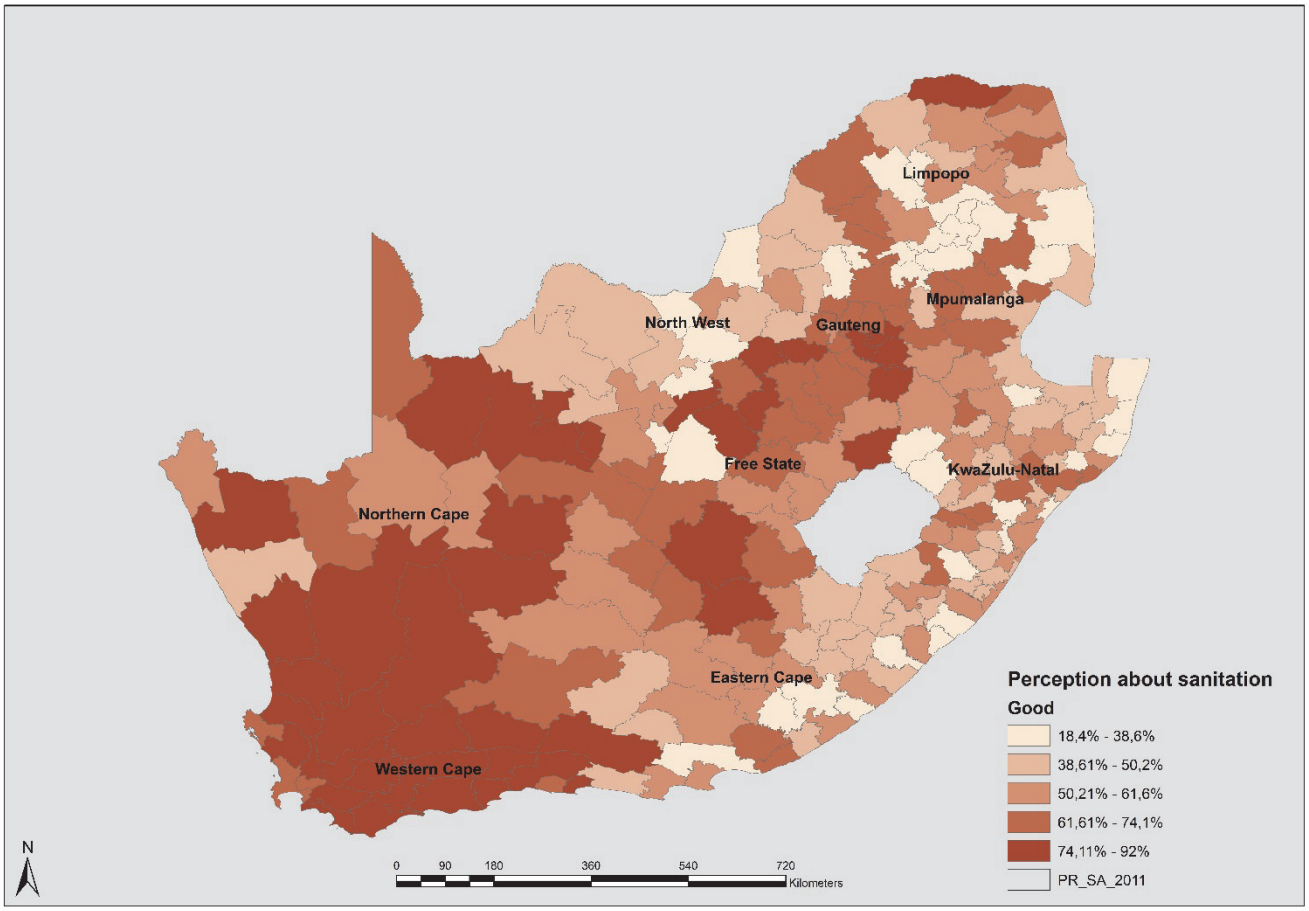


Although not having access to sanitation facilities in the dwelling is not ideal, having to venture outside the yard to access these facilities might entail more challenges for users. Map 6.4 shows that 44,7% of households in Maphumulo accessed sanitation outside the yard, followed by households in Ndwedwe (35,1%), Kwa Sani (33,4%), uMlalazi and Stellenbosch (both 30,1%). The provision of sanitation outside the dwelling and outside the yard is particularly prevalent in densely populated informal settlements and will be particularly noticeable in municipalities where households from these settlements make up a large proportion of all users.

6.5 Perception of sanitation services

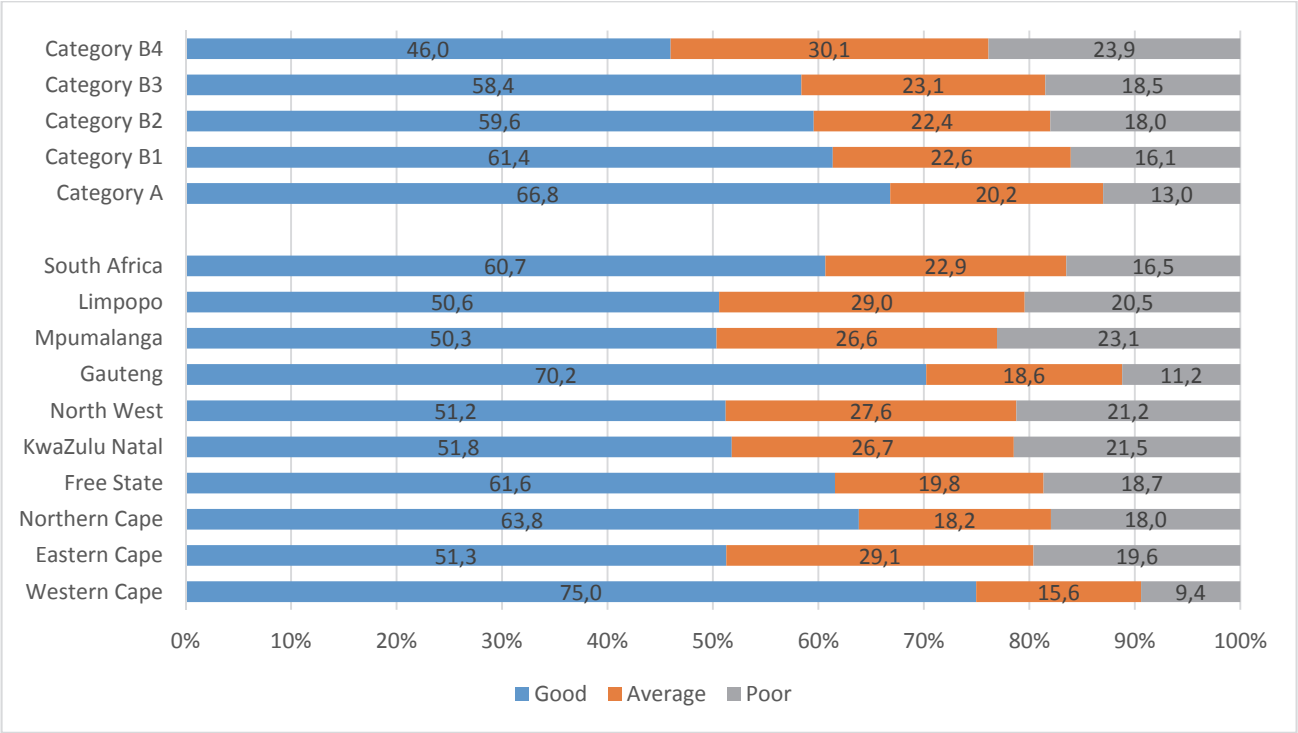
The 2016 Community Survey asked households that received sanitation services to rate their satisfaction with the quality of the service in terms of it being ‘good’, ‘average’, or ‘poor’. Households were rather divided in their opinions as can be seen in Map 6.5 and in Addendum 2.

Map 6.5: Household rating of sanitation services as 'good' by local municipality, 2016



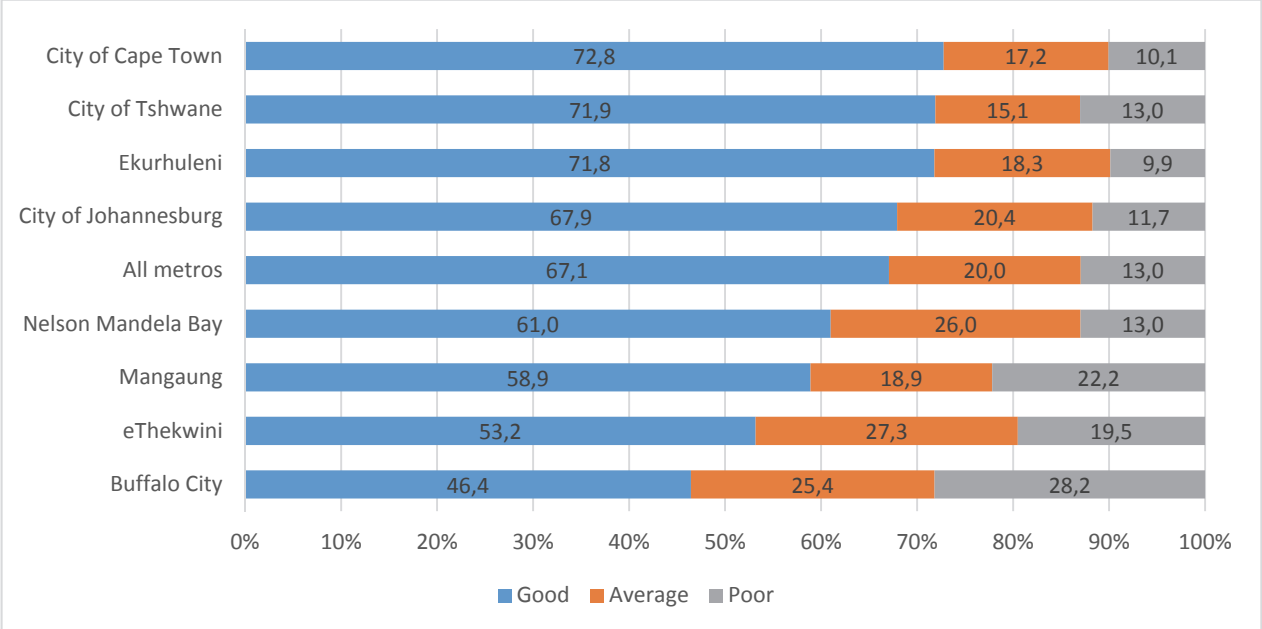
Map 6.5 and Addendum 2 shows that the highest approval for the quality of sanitation services was reported in Hessequa (92,0%), Swartland (90,5%), Kgatelopele and Laingsburg (both 89,8%), and Swellendam (88,1%), while the highest dissatisfaction with services (rating services as 'poor') was reported in eDumbe (51,4%), Thembisile (47,0%), Mtubatuba and KwaDukuza (42,1%) and Sunday's River Valley (41,5%).

Figure 6.4: Perceived satisfaction with sanitation services by province and municipal category, 2016



Although 60,7% of households rated the sanitation services they used as 'good', approval rating vary significantly across municipalities. Figure 6.4 shows that households in Western Cape (75,0%) and Gauteng (70,2%) were most positive about the quality of the service they receive, while slightly more than one-half of households in Mpumalanga (50,3%), Limpopo (50,6%), North West (51,2%), Eastern Cape (51,3%) and KwaZulu-Natal (51,8%) considered the quality of sanitation services as appropriate. While more than two-thirds (66,8%) of households in metropolitan municipalities rated the quality of sanitation services positively, only 46,0% did so in rural B4 municipalities. Inversely, 23,9% of households rated the service as 'poor' in B4 municipalities compared to only 13% in metros.

Figure 6.5: Perceived satisfaction with sanitation services by metropolitan council, 2016

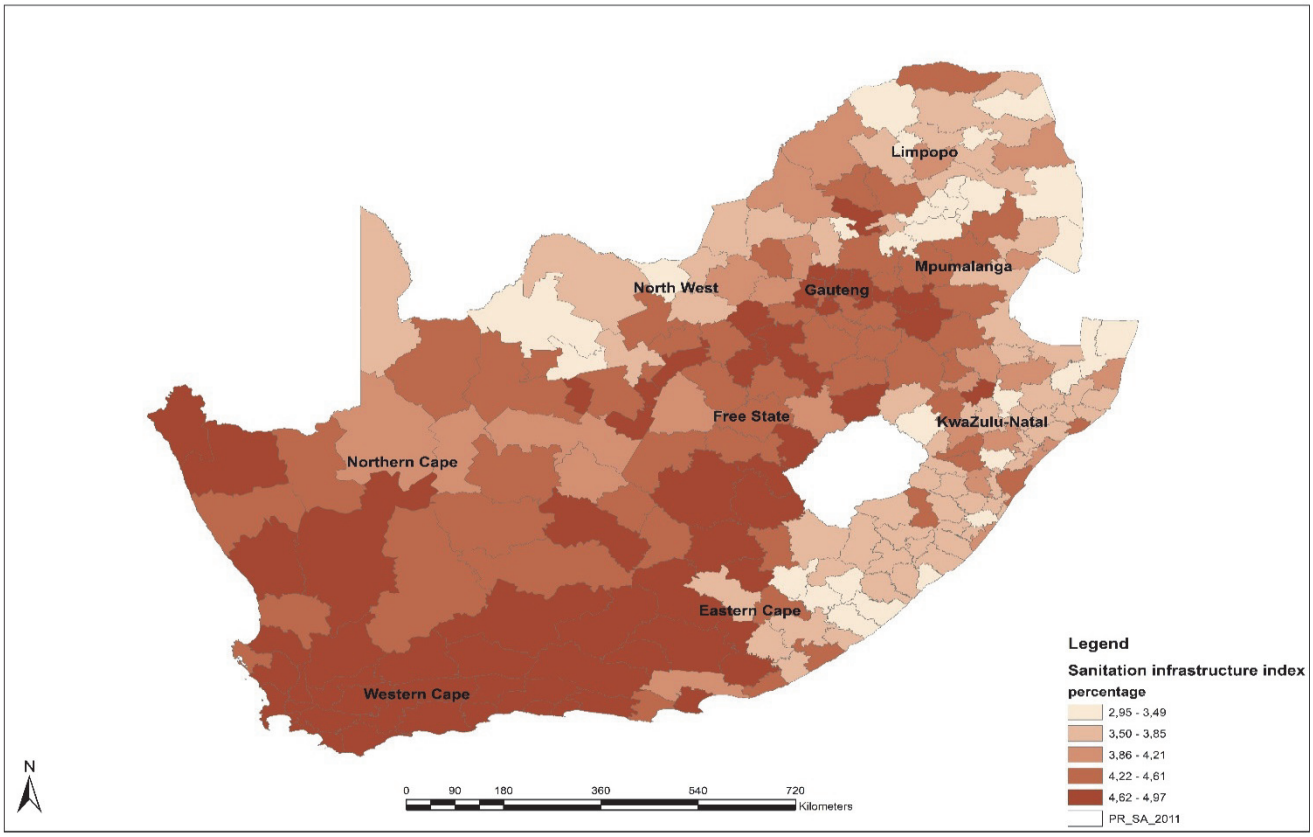


The overall satisfaction with sanitation services in metropolitan municipalities is presented in Figure 6.5. The figure shows that the City of Cape Town contained the highest percentage of satisfied households (72,8%), while less than half (46,4%) of households in Buffalo City rated their sanitation services as 'good'.

6.6 Sanitation service index

The sanitation quality infrastructure index describes the infrastructure that households have access to. Whereas a presentation on figures about the percentage of households with access to a particular level of services would provide a one-dimensional picture of service delivery in a particular jurisdiction, this method allows for a much more varied, and accurate description and measurement of engineering services. As mentioned in the methodology section (see section 4.2.1), the infrastructure quality was calculated by categorising the quality of infrastructure according to five levels, namely no service, minimum, basic, intermediate and full. Numerical values between 1 and 5 are allocated to each level of service, one being the lowest (no service) and five the highest (water borne sanitation), and the level of service provided is calculated as the average of the percentage of the population receiving a particular service. The index provides an indication of the quality of infrastructure provided and is expressed as a number between one and five. The results of the calculation of the sanitation infrastructure quality index is presented in Map 6.6 and Addendum 3.

Map 6.6: Local Municipality infrastructure quality index for sanitation by local municipality, 2016



Map 6.6 shows that households in Western Cape generally had access to much better sanitation facilities than those in other provinces, particularly those in Eastern Cape and KwaZulu-Natal. The highest index scores were estimated for Overstrand (5.0), Hessequa, Drakenstein, Camdeboo, Stellenbosch, Bergrivier and Laingsburg and 13 other (all 4,9) while the lowest index scores were estimated for Intsika Yethu (2,9), Engcobo (3,1), Makhuduthamaga, Ratlou, Aganang and Nongomo (all 3,2).

The index scores for the eight metros were all higher than 4,4 out of a possible 5, with the lowest index score estimated for Mangaung (4,4) and the highest score (4,8) shared by the Cities of Johannesburg and Cape Town, and Nelson Mandela Bay.

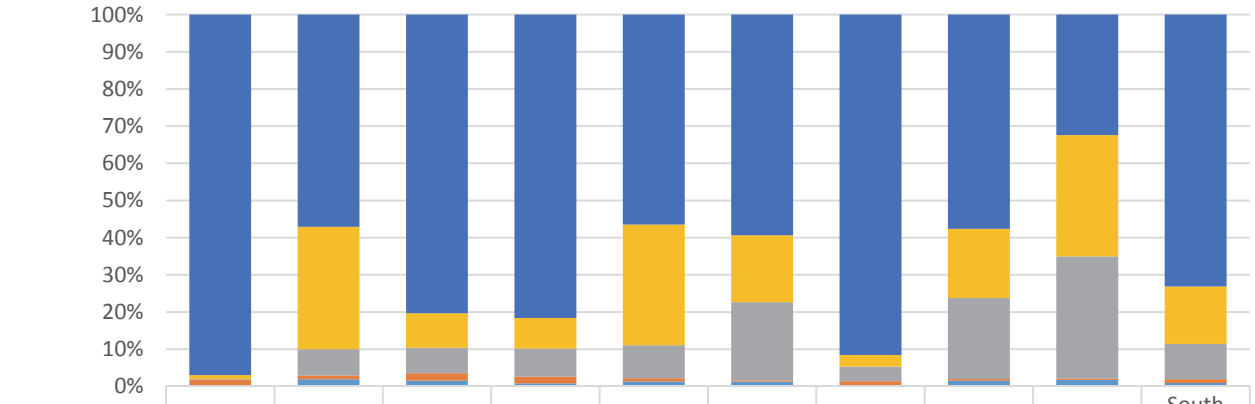
Table 6.8: Sanitation service infrastructure quality index by province and municipal category, 2016

	Number of households by service level						Index score
	None	Minimal	Basic	Inter-mediate	Full	Total	
Municipal category							
Metropolitan (A)	114 631	228 386	388 136	412 079	6 403 064	7 546 296	4,7
Secondary city (B1)	86 482	35 470	418 911	267 072	1 773 421	2 581 356	4,4
Large town (B2)	60 962	29 671	192 714	234 484	854 775	1 372 606	4,3
Small town (B3)	131 795	52 102	294 497	337 728	1 383 981	2 200 103	4,3
Rural municipality (B4)	287 906	31 602	1 021 021	1 574 899	307 521	3 222 949	3,5
Province							
Western Cape	27 368	69 854	4 267	25 738	1 806 650	1 933 877	4,8
Eastern Cape	137 985	38 317	170 187	597 766	829 140	1 773 395	4,1
Northern Cape	23 514	15 274	34 813	35 413	244 696	353 710	4,3
Free State	34 210	37 780	105 588	85 726	683 334	946 638	4,4
Kwa-Zulu Natal	161 535	50 655	351 421	966 883	1 345 349	2 875 843	4,1
North West	66 271	8 168	351 746	226 344	596 238	1 248 767	4,0
Gauteng	55 034	135 371	302 693	184 415	4 273 625	4 951 138	4,7
Mpumalanga	75 760	11 045	356 667	229 000	566 391	1 238 863	4,0
Limpopo	100 100	10 769	637 896	474 977	377 341	1 601 083	3,6
South Africa	**681 775**	**377 231**	**2 315 279**	**2 826 262**	**10 722 762**	**16 923 309**	**4,3**

Table 6.8 shows that metropolitan municipalities scored the highest index scores and therefore generally provided households with the highest quality sanitation facilities. Households in rural B4 municipalities had least access to full sanitation. The table shows that 681 775 households did not have access to improved sanitation, of whom the majority, 287 906, resided in rural municipalities.

From a provincial perspective, the highest index scores were calculated for Western Cape and Gauteng, while Limpopo scored the lowest. Despite scoring relatively good index scores, 161 535 households in KwaZulu-Natal and 137 985 households in Eastern Cape lacked any access to sanitation.

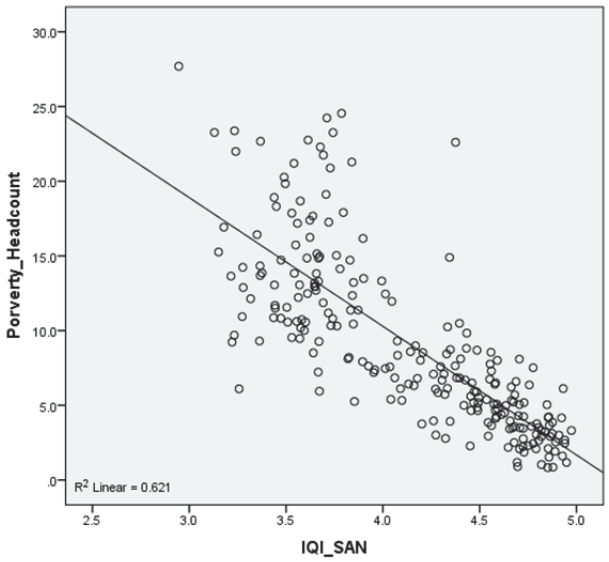
Figure 6.6: Comparison of sanitation infrastructure quality index by province, 2016



	WC	EC	NC	FS	KZN	NW	GP	MP	LP	South Africa
Full	4,7	2,3	3,5	3,6	2,3	2,4	4,3	2,3	1,2	3,2
Intermediate	0,1	1,3	0,4	0,4	1,3	0,7	0,1	0,7	1,2	0,7
Basic	0,0	0,3	0,3	0,3	0,4	0,8	0,2	0,9	1,2	0,4
Minimal	0,1	0,0	0,1	0,1	0,0	0,0	0,1	0,0	0,0	0,0
None	0,0	0,1	0,1	0,0	0,1	0,1	0,0	0,1	0,1	0,0

The composition of index scores are compared by province in Figure 6.6. The figure shows that full sanitation services (access to water borne sanitation) were almost universal in Western Cape and Gauteng, while intermediary services (VIP, chemical or ecological) were very prominent in Eastern Cape, KwaZulu-Natal and Limpopo. Limpopo also had the highest percentage of households that used basic sanitation or less.

Figure 6.7: Correlation between Sanitation Infrastructure Quality Index and municipal headcount poverty



The results of a correlation between the sanitation infrastructure quality index and municipal headcount poverty is presented in Figure 6.7. The figure shows a strong negative relationship (R = -0,788), meaning the sanitation IQI would be lower in poorer municipalities. If a linear regression line is fitted it yields a r square of 0,621, showing that poverty headcount can predict approximately 62,1% of changes in the Sanitation infrastructure Quality Index.

Figure 6.8: Correlation between the Sanitation Infrastructure Quality Index and household perceptions of sanitation services as 'good' by local municipality, 2016

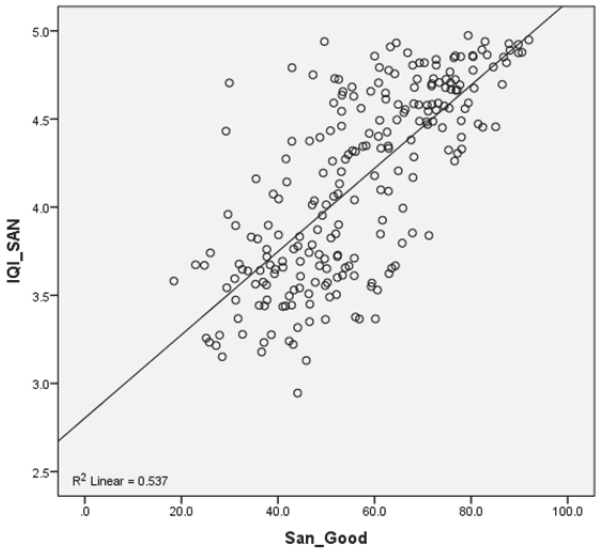


Figure 6.8 depicts a relatively strong positive correlation between the sanitation quality index and the percentage of households that rated the quality of sanitation services as 'good' (R = 0,732). A linear regression models shows that the model explains 53,7% of the variation around the mean.

6.7 Summary and conclusions

Government policies remain committed to provide basic sanitation facilities and to increase the percentage of households with access to a functional sanitation service from 84% in 2013 to 90% by 2019. These policies furthermore includes the elimination of bucket sanitation in the formal residential areas. The percentage of households that use flush toilets increased from 60,1% in 2011 to 63,3% in 2016, while those that used ventilated pit toilets increased to 12,2%. Despite the large improvements made since 1994, many households still lack access to safe, affordable and reliable sanitation services. Nationally, 13,7% of households used unventilated pit toilets, while 2,2% relied on bucket toilets and 2,4% reported being without any sanitation. Access to sanitation is, however, varied. While households in larger municipalities and particularly municipalities in Western Cape, Gauteng and parts of Northern Cape enjoyed near universal access to improved sanitation, access in poor, predominantly rural municipalities in Eastern Cape, KwaZulu-Natal and Limpopo as much more basic. Of the 4,1 million households that were estimated to lack access to improved sanitation, 1,6 million resided in rural B4 municipalities that were constrained by finances and distance. The sustainable provision of services was also negatively affected by persistent under-investment and insufficient maintenance and refurbishment of infrastructure.

Despite attempts to eradicate the bucket toilet due to human rights concerns and potential health risks, bucket toilets persists. It is notable that figures provided by municipalities for the annual non-financial census of municipalities and those obtained from households differ significantly.

Government has prioritised the provision of basic water and sanitation to all households in a way that is easily accessible to households, and sustainable to provide. Although accessibility is not described in terms of any particular distance, as with water, the results show that households with toilets in the dwelling were mostly located in Western Cape.

Approval ratings for sanitation services varied. While, nationally, 60,7% of households rated their sanitation service as ‘good’, households in Western Cape and Gauteng, and specifically in metros, were much more positive than households in more rural provinces and in B4 municipalities in particular.

The sanitation services index aims to move beyond merely providing a single figure to measure access to sanitation, by providing a more representative picture of the whole range of sanitation services and infrastructure that are provided by municipalities. The index finds that the available infrastructure and accompanying service levels are worst for households in the poorer, mostly rural municipalities particularly Limpopo where many households have to rely on basic or intermediary services.

7 Solid waste removal services

7.1 Background

The management of solid waste, including the responsibility for refuse removal, refuse dumps, solid waste removal and cleansing, is primarily a local government function assigned to it by Section 156(1)(a) of the Constitution, as read with Schedule 5. The roles of national and provincial governments are outlined in the Waste Act. While the national government is responsible to establish uniform norms and standards, maintain national standards, and promote the right to an environment that is not harmful to health and well-being, provincial governments are tasked with the implementation of the national waste management strategy and national norms and standards. Local governments are tasked with the sustainable delivery of services subject to the national and provincial regulations and standards (Treasury, 2011).

The National Environmental Management Waste Act (Act No. 59 of 2008) emphasises the development of an integrated waste planning system through the development of waste management plans by all spheres of government, and industry waste management plans for specified waste generators. The Waste Act provides municipalities with a legal monopoly over the provision of solid waste services, and private waste service providers need to have approval from municipalities before private services can commence. A total of 239 municipalities performed solid waste functions in 2009 compared to 226 in 2005 (Stats SA, 2010).

Although most municipalities provide solid waste services themselves, many metropolitan and district municipalities outsource the function, although this trend seems to be declining (Treasury, 2011). The use of community-based delivery mechanisms are limited despite the potential for job creation.

Basic refuse removal is defined as the most appropriate level of waste removal services given local conditions. While kerbside removal and/or organised transit to central collection points could be used in high density settlements, central collection points might be more applicable in medium density settlements. In low density settlements, including farms, regularly supervised on-site disposal is recommended (DEA, 2010).

The solid waste function is presently hampered by a number of weaknesses, including the lack of accountability caused by an overlap of functions between districts and local municipalities, and the impracticality of ring-fencing solid waste finances in smaller municipalities.

Although access to solid waste services have improved markedly, access to services vary greatly across different geographic areas. Service levels also vary greatly by type of municipality. Although government set a target to provide access to refuse removal services to all households, domestic refuse removal in rural areas is not necessarily viable. Services have also been extended to informal settlements in order to limit unregulated dumping of solid waste associated with underserviced areas. A major challenge facing the expansion of waste disposal services involves the fact that legal requirements for municipalities to provide refuse removal services have evolved and become more demanding over the years.

7.1.1 National Development Plan

Building environmental sustainability and resilience is a key priority in the National Development Plan (NDP) Vision 2030. The NDP realises that solid waste is putting immense pressure on the environment and the NDP calls for the expansion of recycling programmes to decrease the total volume of waste disposed to landfills each year (NPC, 2011).

7.1.2 MTSF 2014–2019

According to the 2014–2019 MTSF, Government is committed to improve access to basic services and to ensure that municipalities provide and properly maintain services such as refuse removal.

7.1.3 SDGs

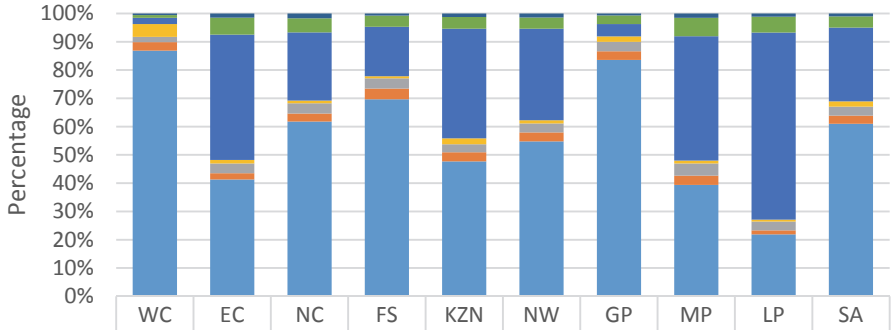
The mismanagement of waste pollutes the environment and negatively affect sustainable development. This could, in turn, exacerbate the cycle of poverty, harm the environment, and inhibit economic growth and development. The SDG goals are predominantly concerned with reducing waste, controlling disposal, and limiting the exposure of vulnerable populations to hazardous substances. Goal 11 aims to make cities and human settlements inclusive, safe, resilient and sustainable. To achieve this, target 11.6, calls for the reduction of the adverse per capita environmental impact of cities, by paying special attention to air quality and municipal and other waste management amongst other interventions.

In order to achieve sustainable consumption and production patterns, target 12.4 aims to achieve, by 2020, the environmentally sound management of chemicals and all wastes throughout their life cycles. This should be done in accordance with agreed international frameworks by reducing their release into the air, water and soil so that the adverse impacts of waste of human health and the environment could be limited. In addition to this, target 12.5 aims to reduce waste generation through prevention, reduction, recycling and use

7.2 Access to refuse removal services

Effective solid waste management services are important to preserve public health and to enhance environmental quality by preventing illegal dumping and littering and to supervise the recycling or disposal of solid waste. Solid waste management is primarily a local government function in South Africa.

Figure 7.1: Household refuse removal by province, 2016

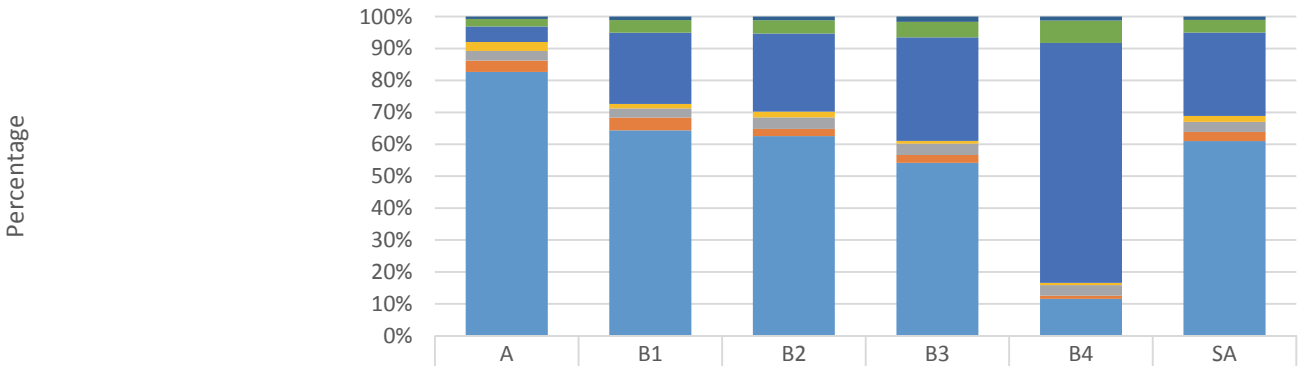


	WC	EC	NC	FS	KZN	NW	GP	MP	LP	SA
Other	0,6	1,5	1,7	0,7	1,3	1,5	0,7	1,5	1,1	1,0
No rubbish disposal	0,9	6,0	5,0	4,0	4,1	3,9	3,1	6,5	5,7	4,0
Own refuse dump	2,2	44,3	24,1	17,5	38,8	32,4	4,3	44,0	66,1	26,1
Communal container/central collection point	4,5	1,2	1,0	0,8	2,1	1,2	1,9	1,1	0,7	1,9
Communal refuse dump	1,9	3,5	3,6	3,6	2,8	3,2	3,4	4,3	3,2	3,2
Removed less regularly than once per week	3,0	2,2	2,8	3,8	3,2	3,1	3,1	3,3	1,4	2,9
Removed at least once per week	86,9	41,3	61,8	69,7	47,7	54,8	83,6	39,4	21,9	61,0

Figure 7.1 shows that, nationally, household waste was removed once per week or less regularly for 63,9% of all households. Refuse collection was most common in Western Cape (89,9%) and Gauteng (86,7%), and least common in Limpopo (23,3%), Mpumalanga (42,7%) and Eastern Cape (43,5%).

Almost one-third (30,1%) of households lacked any kind of refuse facilities, nationally. The use of own refuse dumps, or not having any refuse disposal facilities was highest in Limpopo (71,8%), Mpumalanga (50,5%), Eastern Cape (50.3%) and KwaZulu-Natal (42,9%). The use of communal containers or central collection points was highest in Western Cape (4,5%). This form of disposal system is mostly used in informal areas as a substitute for kerbside removal.

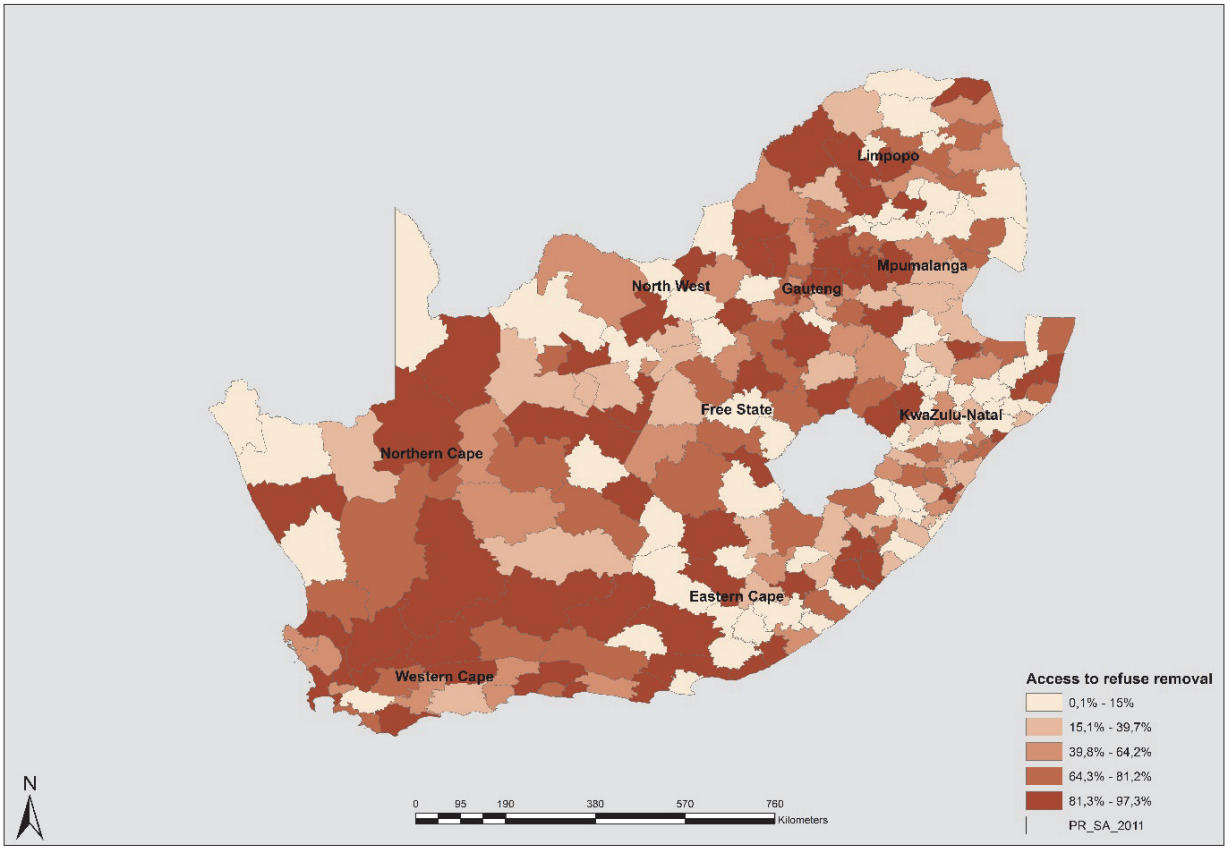
Figure 7.2: Percentage of households by refuse disposal and municipal category, 2016



	A	B1	B2	B3	B4	SA
Other	0,8	1,1	1,2	1,6	1,3	1,0
No refuse disposal	2,4	4,0	4,1	4,9	7,0	4,0
Own refuse dump	4,9	22,3	24,5	32,4	75,2	26,1
Communal container/collection point	2,8	1,4	1,8	0,9	0,7	1,9
Communal refuse dump	3,0	2,9	3,6	3,6	3,3	3,2
Removed at least once per week	3,6	4,0	2,3	2,5	1,0	2,9
Removed less often than once per week	82,7	64,4	62,5	54,2	11,6	61,0

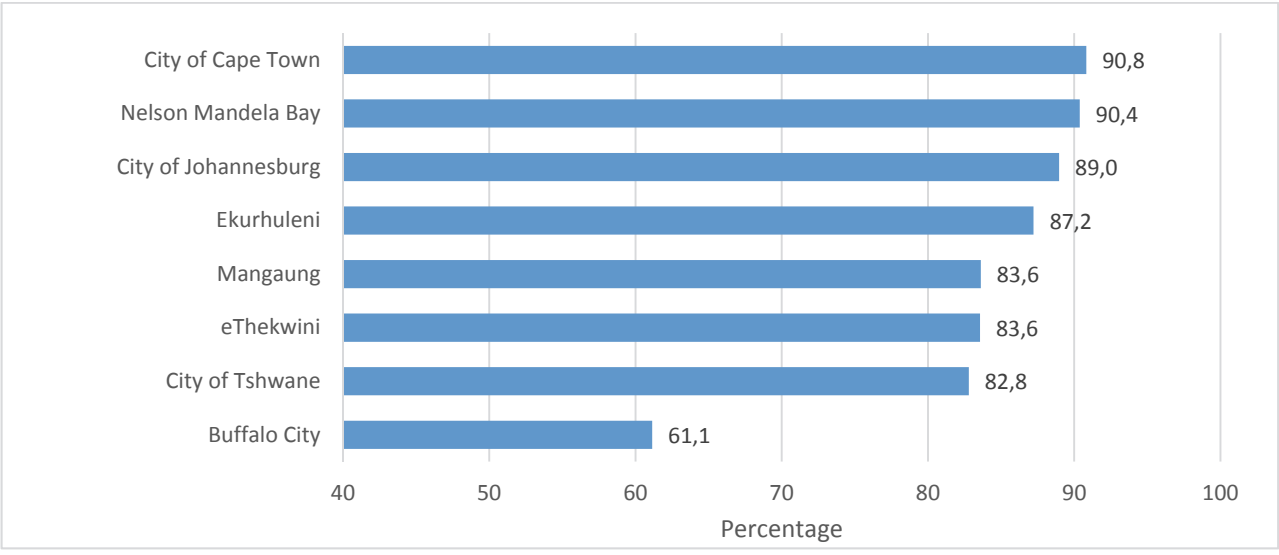
Figure 7.2 shows that refuse removal services are most common in the large, metropolitan municipalities (86,3%) and that it declines consistently as municipalities become more rural in nature. Only 12,6% of households in rural (B4) municipalities, for instance, received refuse removal services. Inversely, the percentage of households that used their own refuse dumps increased as municipalities become more rural, growing from 4,9% for metropolitan municipalities to 75,2% for the most rural municipalities. Households that reportedly had no refuse disposal also increased as municipalities became more rural in nature.

Map 7.1: Percentage of households whose refuse were removed by local municipalities, 2016



The broad municipal categories hide large variations between different municipalities. This is presented in Map 7.1 and Addendum 1. While refuse removal was almost universal in municipalities such as George (97,3%), Knysna (96,0%), Prince Albert (95,8%), Richtersveld (95,3%) and Camdeboo (94,9%), less than one percent of households received these services in municipalities such as Kagisano/Molopo, Ratlou, Umzumbe, Aganang, Maphumulo, Msinga, and Port St Johns. The maps shows that refuse removal services were most common in municipalities in Western and Northern Cape, Free State and Gauteng, as well as in the metropolitan areas while virtually no refuse removal services exist across most of the rural municipalities in Eastern Cape, KwaZulu-Natal, Limpopo and North West.

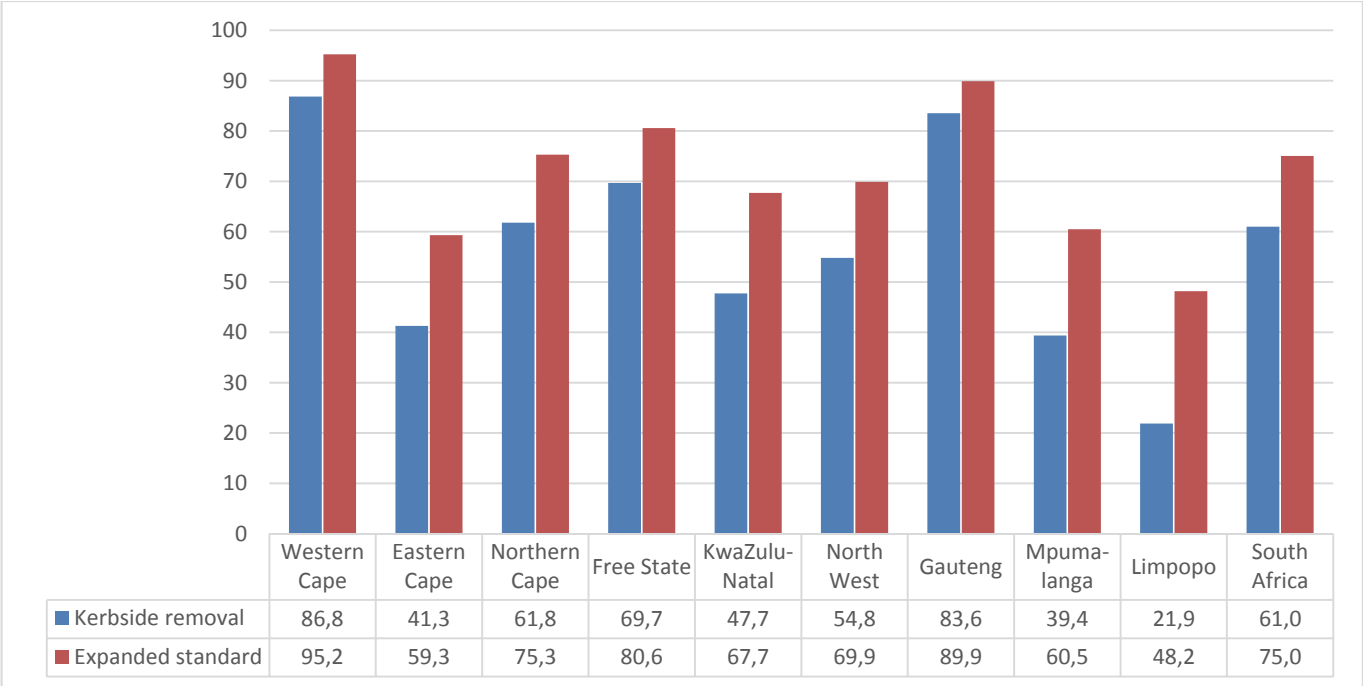
Figure 7.3: Percentage of households that use refuse removal services by individual metro, 2016



A comparison of refuse removal services in the eight metropolitan municipalities (Figure 7.3) show that, together, the metros regularly removed the refuse for 6,5 million households of the 10,8 million households that receive the service nationally. Although refuse removal services were generally more common in metros, variations exist between metros. Refuse removal was most common in the City of Cape Town (90,8%), Nelson Mandela Bay (90,4%) and the City of Johannesburg (89,0%) while only 61,1% of households in Buffalo City received the service.

The backlog of refuse removal services identify the municipalities in which the largest need for refuse removal services exists. In these areas large distances and low population densities make the provision of these services impractical and expensive. In order to fulfil its mandate to ensure that all households have access to some basic refuse disposal, the Department of Environmental Affairs (DEA, 2010) defines basic refuse disposal as the most appropriate level of waste removal services given local conditions. While kerbside removal and/or organised transit to central collection points could be used in high density settlements, central collection points might be more applicable in medium density settlements such as in informal areas. In low density settlements, including farms and traditional areas, the DEA recommends regularly supervised, on-site disposal. The implication is that many of the observed backlogs would be addressed instantaneously as on-site disposal is accepted as a form of refuse disposal.

Figure 7.4: Households with an appropriate level of access to solid waste disposal services by province using DEA definition, 2016

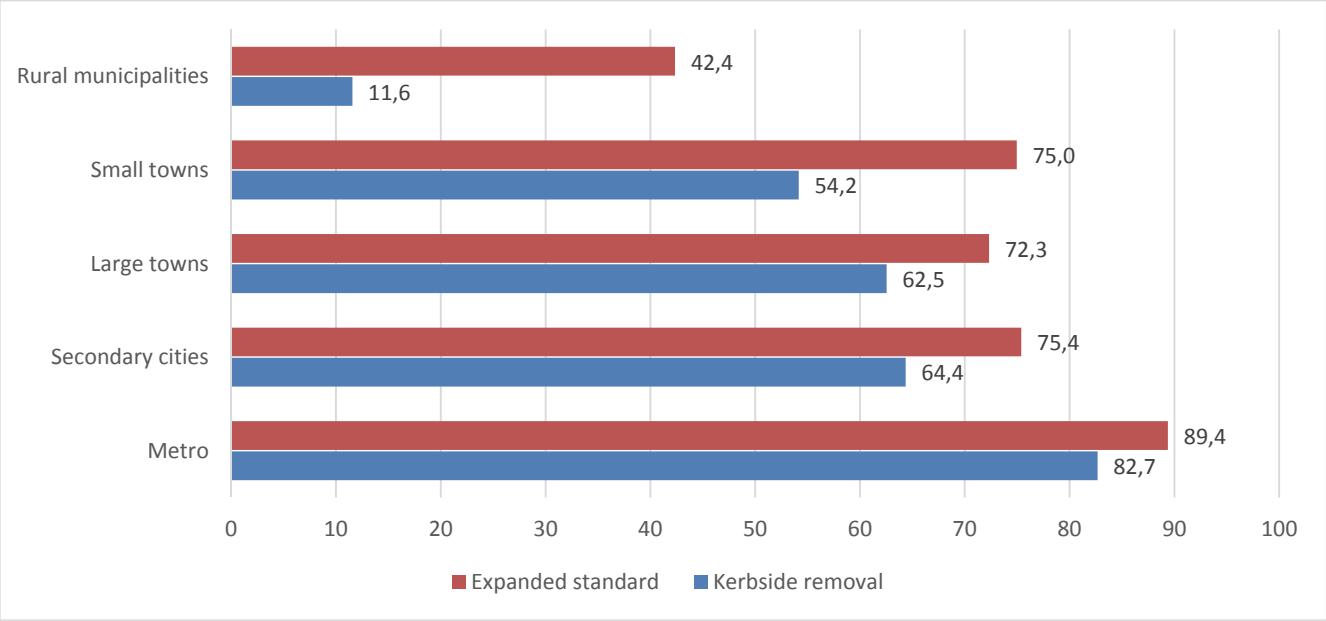


	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpuma-langa	Limpopo	South Africa
Kerbside removal	86,8	41,3	61,8	69,7	47,7	54,8	83,6	39,4	21,9	61,0
Expanded standard	95,2	59,3	75,3	80,6	67,7	69,9	89,9	60,5	48,2	75,0

Figure 7.4 compares the percentage of households that is considered to have access to an adequate level of solid waste management using two standards, namely kerbside refuse removal, and the DEA's expanded standard that takes into account the appropriate access given local conditions. The figure shows that a higher percentage of households is consistently considered to have adequate access to solid waste management services if the expanded standard is used. This is particularly true in largely rural provinces such as Limpopo and Eastern Cape where large percentages of rural households are classified as having access to appropriate services if on-site disposal is used. This is particularly notable in Limpopo where the percentage of households that is considered to have appropriate access to solid

waste services increased from 21,9% to 48,2% if the expanded standards are used. Whereas 61,0% of households had access to kerbside removal, nationally, 75% of households have appropriate access if the expanded standards area used. Increases in metros area mostly due to the introduction of central collection points in informal settlements.

Figure 7.5: Households with an appropriate level of access to solid waste disposal services by municipal categories using DEA definition, 2016



Although using the expanded definition leads to an increase in the percentage of households that area considered to have appropriate access to solid waste services across all types of municipalities, the largest improvements are noted in rural municipalities and small towns where local disposal are considered appropriate. Figure 7.5 shows that the increase in metros and secondary cities are much smaller. While the adjusted standard of what is considered appropriate leads to a smaller backlog, poor supervision of on-site disposal facilities in low density settlements such as farms and rural areas could actually contribute to environmental pollution.

7.3 Free basic refuse removal

The National Policy for the Provision of Basic Refuse Removal Services to Indigent Households (DEA, 2010) aims to facilitate the provision of at least basic refuse removal services to poor households. The specific basic refuse removal services in question are discussed in more detail under municipal services, above. The policy acknowledges the different capacities of municipalities to implement the services, but attempts to create some uniformity in the range of services that can be provided across municipalities. The policy is aligned to the Waste Act (Act No. 59 of 2008) and links to existing municipal policies on indigent households.

Table 7.1: Number of households that received free basic solid waste removal services by province, 2011–2015

	Basic solid waste disposal services				
Province	**2011**	**2012**	**2013**	**2014**	**2015**
Western Cape	1,257,378	1,176,365	1,172,648	1,173,602	1,205,458
Eastern Cape	752,350	766,347	766,131	783,518	793,872
Northern Cape	209,947	215,811	221,478	229,610	237,440
Free State	526,830	563,273	628,430	648,177	663,798
KwaZulu-Natal	1,429,068	1,442,130	1,423,290	1,450,055	1,512,930
North West	465,048	464,993	491,175	519,646	550,051
Gauteng	2,513,354	2,574,182	2,763,184	2,813,594	2,986,330
Mpumalanga	405,734	420,509	513,075	540,668	624,148
Limpopo	363,391	384,973	412,282	416,232	453,545
South Africa	**7,923,100**	**8,008,583**	**8,391,693**	**8,575,102**	**9,027,572**
	Free Basic solid waste disposal				
Province	**2011**	**2012**	**2013**	**2014**	**2015**
Western Cape	610,199	609,706	553,379	625,246	561,755
Eastern Cape	260,773	230,890	224,769	223,579	223,940
Northern Cape	76,803	66,983	59,073	56,000	64,327
Free State	114,046	146,937	146,547	125,460	133,947
KwaZulu-Natal	535,828	802,172	698,875	691,111	683,842
North West	81,701	98,812	97,866	103,291	89,716
Gauteng	318,790	331,127	482,053	343,713	360,154
Mpumalanga	103,890	134,989	88,370	95,002	92,161
Limpopo	69,864	132,443	77,457	95,963	96,194
South Africa	**2,171,894**	**2,554,059**	**2,428,389**	**2,359,365**	**2,306,036**
Percent FB service	**27,4**	**31,9**	**28,9**	**27,5**	**25,5**

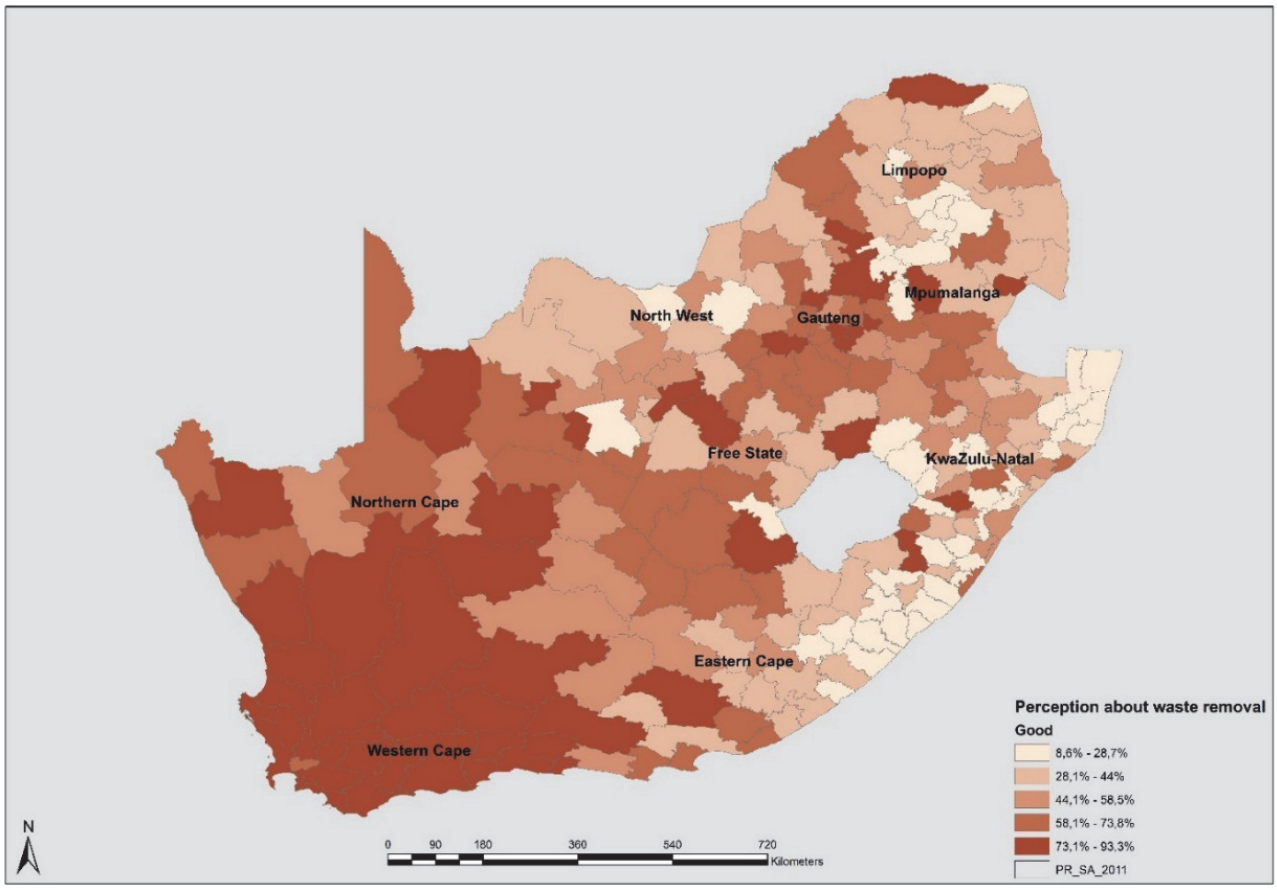
Source: Non-Financial Census of Municipalities for financial year that ended 30 June 2015.

While the non-financial census of municipalities found that the number of consumer units that received basic refuse disposal services increased annually between 2011 and 2015, the number of consumer units that received the services for free actually declined since 2012. According to the Treasury (2011), this should be attributed to better control over the classification of indigent households. Increased income from the service would also assist to make refuse disposal services, which are commonly cross-subsidised by more lucrative municipal services, to become more financially self-sufficient.

7.4 Perception of refuse removal services

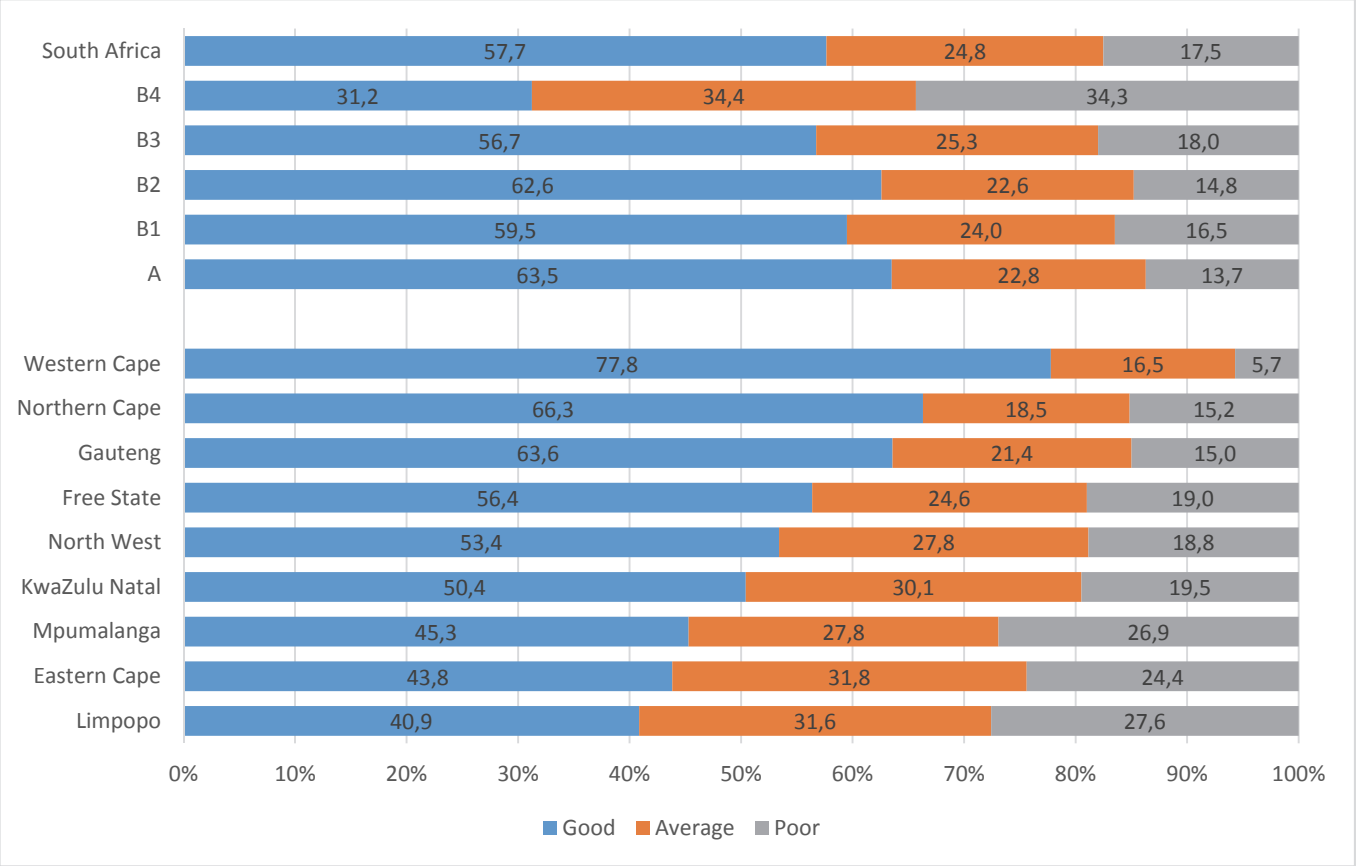
In order to establish residents' satisfaction with solid waste removal services, households were requested to rate the quality of the services they received as 'good', 'average' or 'poor'. An analysis of the responses of households whose refuse was removed at least once per week and who rated the service as 'good' is presented in Map 7.3.

Map 7.2: Household perception of refuse removal services by local municipality, 2016



Map 7.3 shows that households in Western Cape municipalities were generally most satisfied, while those in Eastern Cape, KwaZulu-Natal and a few North West municipalities were most dissatisfied. The highest level of satisfaction was reported for Swartland (93,3%), Laingsburg (92,9%), Karoo Hoogland (92,7%) and Kareeberg (92,2%). At the other end of the scale, only 8,6% of households in Ngquza Hill and 9,6% of households in Port St Johns rated the service they received as 'good'. Almost two-thirds(64,2%) of households in Ngquza Hill rated the service as 'poor', followed by Dikgatlong (61,8%), Thembisile (61,1%), Port St Johns (59,1%), Mtubatuba (55,3%), Makhuduthamaga (54,5%), Umhlabuyalingana (51,4%) and Nongomo (50,9%).

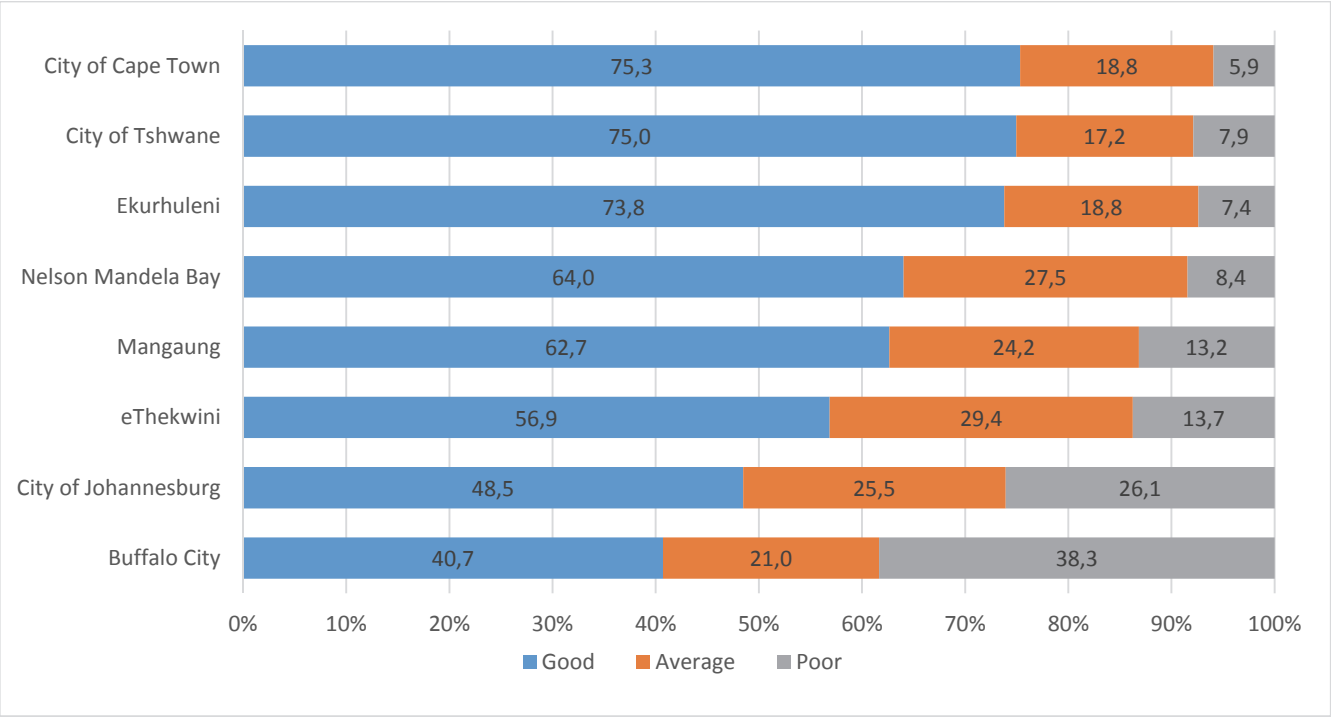
Figure 7.6: Household perception of the quality of solid waste services by province and municipal category, 2016



Household responses in different provinces and municipal categories are presented in Figure 7.4. The figure shows that 57,7% of South African households rated the service they received as ‘good’. Households in metropolitan areas were generally most satisfied (63,5% rated the service as good), while those in B4 municipalities were least satisfied. Less than one-third (31,2%) of households in the rural (B4) municipalities rated the service they received as ‘good’. It is noticeable that a higher percentage of households in rural municipalities rated the services they received as ‘poor’ than ‘good’ (34,3% compared to 31,2%).

Households in Western Cape were generally most satisfied with their service, while less than one-half of users in Limpopo (40,9%), Eastern Cape (43,8%) and Mpumalanga (45,3%) considered the service they received to be ‘good’. Households in these provinces also provided the highest percentages of ‘poor’ ratings.

Figure 7.7: Household perception of solid waste services in metropolitan municipalities, 2016

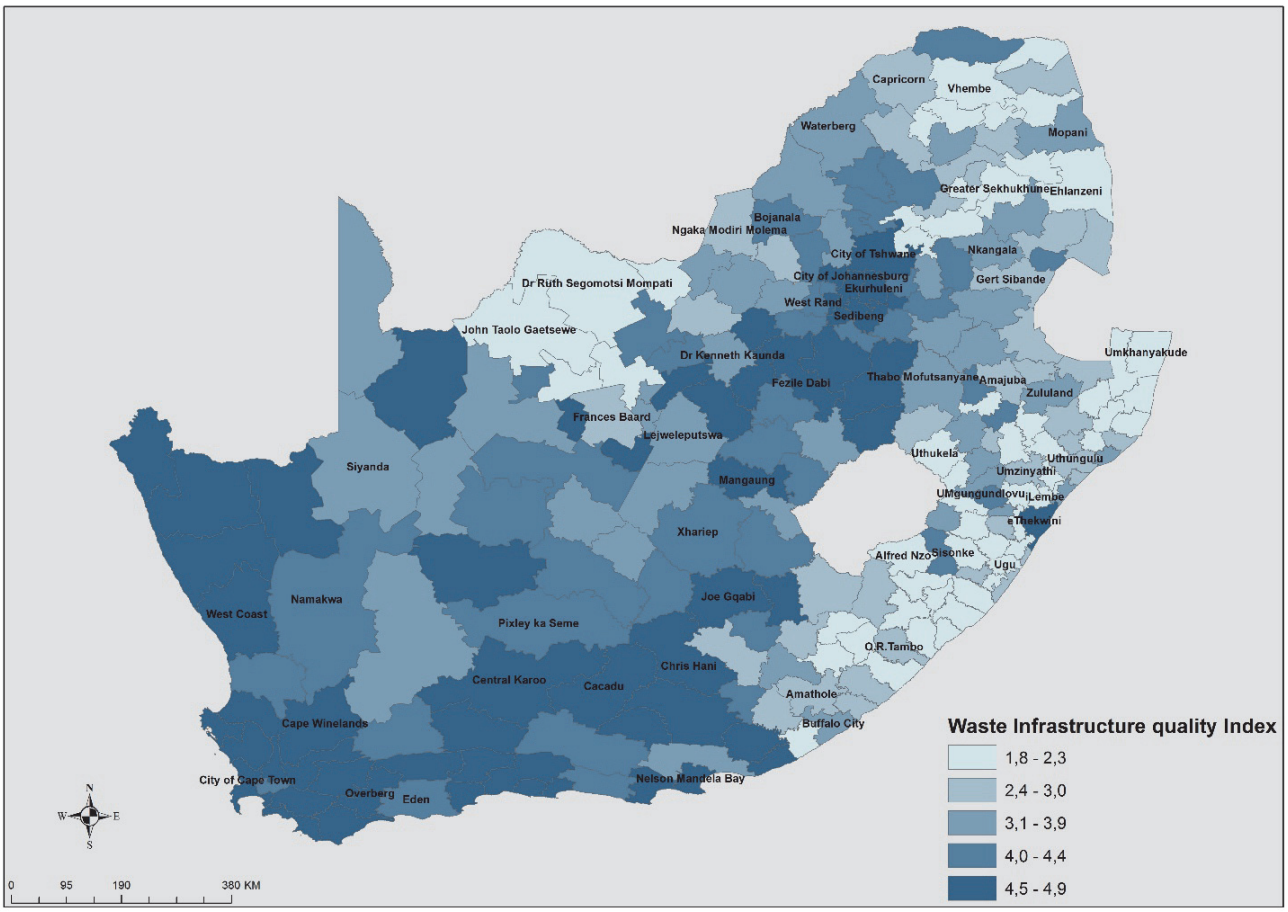


Although households in metropolitan municipalities were generally more satisfied with the waste removal services they received, Figure 7.5 shows that household perceptions varied between the different metros. While households in Cape Town (75,3%), Tshwane (75,0%), and Ekurhuleni (73,8%) were generally satisfied, only 40,7% of households in Buffalo City and 48,5% of households in Johannesburg approved of the services. Approximately one-quarter of households in Johannesburg (26,1%) and 38,3% of households in Buffalo City rated the service as 'poor'.

7.5 Solid waste disposal services indicator

The solid waste quality infrastructure index describes the service that households have access to and which municipalities have to provide. Whereas a presentation on figures about the percentage of households with access to a particular level of services would provide a one-dimensional picture of service delivery in a particular jurisdiction, this method allows for a much more varied, and accurate description and measurement of engineering services. As mentioned in the methodology section (see section 4.2.1), the infrastructure quality was calculated by categorizing the quality of infrastructure/service according to five levels, namely no service, minimum, basic, intermediate and full. Numerical values between 1 and 5 are allocated to each level of service, one being the lowest (no service) and five the highest (weekly refuse removal), and the level of service provided is calculated as the average of the percentage of the population receiving a particular service. The index provides an indication of the quality of service provided and is expressed as a number between one and five.

Map 7.3: Local Municipality infrastructure quality index for waste removal by local municipality, 2016



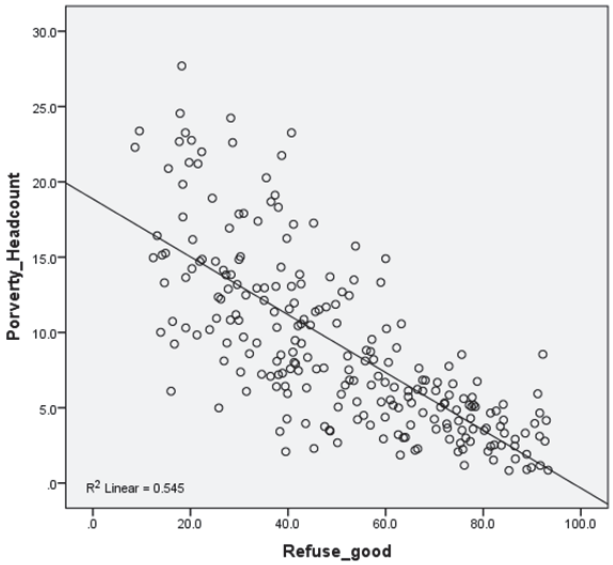
The results of the analysis to calculate a solid waste disposal quality index is presented in Map 7.4. The map shows that the highest index scores were recorded for George (4,87), Prince Albert (4,86), Knysna (4,84) and Camdeboo (4,84) while the poorest scores were calculated for Ntabankulu (1,77), Maphumulo (1,80), Port St Johns (1,80) and Nongoma (1,87). Of the 20 municipalities with the highest index scores, 12 were from Western Cape, while the rest were from Eastern and Northern Cape, as well as Gauteng and North West. All but two of the municipalities with the worst index scores were located in either Eastern Cape or KwaZulu-Natal.

Table 7.2 shows that approximately 10,3 million households, mostly in metros, received kerbside refuse removal services once per week. Refuse for another 488 193 households was removed less regularly. More than five million households, however, either did not have access to any solid waste service, or alternatively used on-site disposal. Most of the households that used on-site refuse disposal resided in either small town (B3), or rural (B4) municipalities.

Table 7.2: Solid waste service infrastructure quality index by province and municipal category, 2016

	Number of households by service level						Index score
	None	Minimal	Basic	Inter-mediate	Full	Total	
Municipal category							
Metro (A)	233,508	594,617	211,769	267,988	6,238,413	**7 546 295**	4.5
Secondary city (B1)	130,219	649,741	36,806	103,414	1,661,175	**2 581 355**	4.0
Large town (B2)	72,401	385,715	24,541	31,595	858,354	**1 372 606**	3.9
Small town (B3)	143,506	792,093	18,896	53,965	1,191,643	**2 200 104**	3.6
Rural municipality(B4)	266,238	2,529,913	22,895	31,230	372,672	**3 222 948**	2.3
Province							
Western Cape	29,692	78,284	87,764	58,618	1,679,519	**1,933,877**	4.7
Eastern Cape	132,492	848,341	21,347	38,840	732,375	**1,773,395**	3.2
Northern Cape	23,630	98,019	3,488	10,006	218,567	**353,710**	3.9
Free State	44,348	199,552	7,242	36,019	659,477	**946,638**	4.1
Kwa-Zulu Natal	154,600	1,195,733	60,799	92,244	1,372,467	**2,875,843**	3.5
North West	67,073	443,771	14,460	39,058	684,405	**1,248,767**	3.7
Gauteng	186,478	380,798	96,254	150,787	4,136,820	**4,951,137**	4.5
Mpumalanga	99,304	598,120	13,193	40,295	487,949	**1,238,861**	3.2
Limpopo	108,256	1,109,461	10,361	22,326	350,678	**1,601,082**	2.6
South Africa	**845,873**	**4,952,079**	**314,907**	**488,193**	**10,322,257**	**16,923,309**	**3.9**

Figure 7.8: Correlation between the refuse removal Infrastructure Quality Index and household perceptions of refuse removal services as 'good' by local municipality, 2016



The results of a correlation between the municipal poverty head count and the percentage of households that rated the refuse removal services they received as 'good' is presented in Figure 7.8. The figure shows a strong negative correlation (r = -0,738), meaning households in municipalities with a lower poverty headcount would be more likely to rate the service as 'good' than those in poorer municipalities. If a linear regression line is fitted it yields a R square of 0,546, showing that poverty headcount can predict approximately 54,5% of changes in the ratings of refuse removal services as 'good'.

7.6 Summary and conclusions

Local governments are tasked with the sustainable delivery of solid waste disposal services, subject to the national and provincial regulations and standards

Although household waste was nationally removed once per week or less regularly for 63,9% of all households, 30,1% of households lacked any kind of refuse facilities. Removal services were also spread very unevenly across municipalities. While 86,3% of households in metros used this service, it was only available to 12,6% of households in rural B4 municipalities. More than three-quarters of households in the most rural municipalities used their own refuse dumps.

Not surprisingly the backlog, if calculated in terms of access to kerbside removal, was highest in rural municipalities in Eastern Cape, KwaZulu-Natal, North West and Limpopo. However, if the definition of appropriate services given local conditions are implemented, the backlog changes dramatically. While kerbside removal and/or organised transit to central collection points could be used in high density settlements, central collection points might be more applicable in medium density settlements. In low density settlements, including farms, regularly supervised on-site disposal is recommended (DEA, 2010).

While 57,7% of households rated the refuse disposal service they received as good, it is noticeable that households in urban municipalities were much more likely to rate the service as good than those in rural areas.

The solid waste removal index aims to move beyond merely providing a single figure to measure access to refuse removal, by providing a more representative picture of the whole range of solid waste removal services and infrastructure that are provided by municipalities. The index finds that the available infrastructure and accompanying service levels are worst for households in the poorer, mostly rural municipalities. This is particularly true for Limpopo where many households have to rely on household dumping. The index also shows large variations across provinces influenced by the rural composition of its population.

8 Electricity services

8.1 Background

Although ESKOM is responsible for the generation and bulk transmission of electricity, Schedule 4B of the constitution (1996) allocates the authority to distribute electricity to municipalities in their areas of jurisdiction subject to legislation and regulation by national and provincial government. The Municipal Systems Act (Act No.32 of 2000) establishes municipalities as service authorities and introduces a distinction between authority and provider. While the authority function includes the development of policies, drafting by-laws, setting tariffs, and regulating the provision of services in terms of the by-laws and other mechanisms, the service provider undertakes the actual service provision function.

The Electricity Regulation Act (Act No. 4 of 2006, as amended) states that persons operating an electricity 'distribution facility' must have a licence to do so. NERSA has licensed a total of 188 distributors, including 6 metropolitan municipalities, 2 metropolitan electricity service providers (City Power and Centlec), 164 local municipalities, 1 district (uMkhanyakude District Municipality), 13 private distributors and Eskom. Although all municipalities with a NERSA distribution licence are electricity service authorities, this licence does not confer service authority status as this can only be done by the minister responsible for local government. According to the Municipal Structures Act (Act No. 117 of 1998, as amended) the responsibility to distribute electricity is allocated to a district municipality unless a local municipality is authorised to do so by the national minister responsible for local government.

SALGA (2014) points out that ESKOM is involved in the distribution of electricity in 140 municipalities, but that these municipalities do not have service delivery agreements in place. Many municipalities consequently fail to make payments for ESKOM for the electricity delivered to households in its jurisdiction, leading to an accumulation of debt and threats by ESKOM to start cutting off electricity to municipalities. This would have far-reaching consequences for residential and commercial entities. Electricity distribution is a major source of revenue for municipalities as the Municipal Fiscal Powers and Functions Act allows municipalities to levy a surcharge on electricity tariffs, even if it is provided by Eskom. Not providing electricity to residents can therefore have serious financial implications for municipalities (Treasury, 2011; Presidency, 2015).

Allocations from the Integrated National Electrification Programme (INEP) grants are intended to fund the capital costs of providing electrical connections to poor households and providing the bulk infrastructure needed to ensure a stable supply of electricity. Alternative sources of energy should be considered when it is not practical or cost-effective to connect all households to the national grid, such as in rural areas where solar panels could be more cost-effective (Treasury, 2011).

INEP allocations can, however, not be used to fund development in commercial development of wealthy suburbs. Given the focus on extending access, a concern raised by SALGA (2013) about the poor and decreasing reliability of the electricity distribution network and its impact on households and businesses alike should come as no surprise.

8.1.1 National Development Plan (NDP)

The NDP 2030 vision is for investment in a strong network of economic infrastructure designed to support the country's medium- and long-term economic and social objectives. This economic infrastructure is a precondition for providing basic services such as electricity, water, sanitation, telecommunications and public transport, and it needs to be robust and extensive enough to meet industrial, commercial and household needs.

The National Development Plan (NPC, 2011) envisions greater social equity with regard to access to energy services by 2030. According to the plan this would be achieved by expanding access to energy (to 90% by 2030), maintaining affordable tariffs, and maintaining targeted and sustainable subsidies for poor households. Non-grid options should be available for households without access to electricity. Key policy issues and policy priorities identified by the NDP include the need to improve the municipal distribution services, and addressing the pricing of, and access to electricity in order to accommodate the needs of the poor.

8.1.2 MTSF 2014–2019

Following the NDP's proposal to increase the proportion of people to the electricity grid to 90% by 2030, and to provide non-grid options to the remaining households, the MTSF aims to connect 1,4 million additional households to the grid between 2014 and 2019, and 105 000 additional non-grid connections.

8.1.3 SDGs

SDG goal 7 aims to ensure universal access to affordable, reliable, sustainable and modern energy. In addition to ensuring universal access to modern energy services, the SDGs also target an increase in the share of renewable energy sources used, as well as doubling energy efficiency by 2030.

South Africa has already experienced a huge increase in the percentage of households with access to electricity. Between 2002 and 2013, the percentage of households with access to electricity increased from 77,1% to 85,4% (Stats SA, 2015). Despite these improvements, electrification of households in rural areas are hampered by concerns of practicality and cost-effectiveness. For instance, where informal areas have not been proclaimed electricity cannot be installed due to the threat of relocation. Similarly, the electrification programme in rural areas is troubled by the topography, a lack of infrastructure, and low population/household density.

8.2 Access to electricity

The provision of electricity can contribute significantly to the improvement of human quality of life. In addition to providing a host of social benefits, access to electricity could also stimulate local economic development. Local governments play an important role in the distribution of electricity, and electricity is an important source of local government funding, particularly for larger urban municipalities. Although significant progress has been made since 1994 with the provision of electricity, significant challenges remain. Government is committed to not only expand the electricity infrastructure, but to also provide free basic electricity services to poor households.

Figure 8.1: Percentage of households with access to electricity by province, 2016

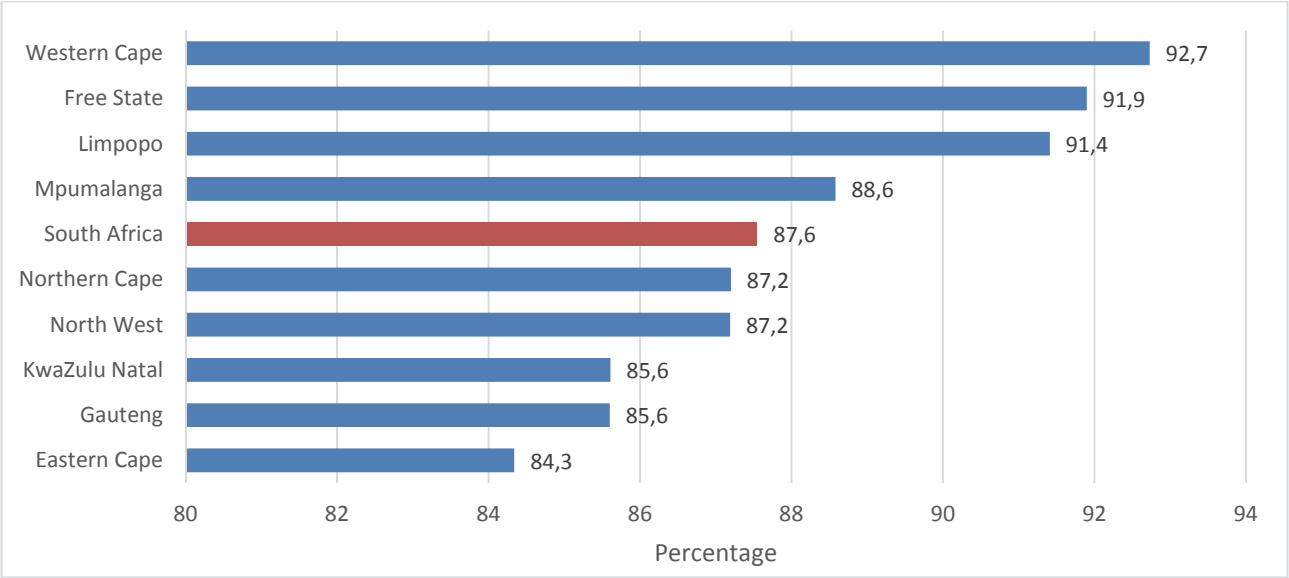


Figure 8.1 shows that electricity has become almost ubiquitous in South Africa. Although 87,6% of households reportedly had access to electricity in 2016, access varied across municipalities. The highest level of access was measured in Western Cape (92,7%), Free State (91,9%) and Limpopo (91,4%), while Eastern Cape (84,3%), Gauteng (85,6%) and KwaZulu-Natal (85,6%) lagged behind.

Figure 8.2: Percentage of households with access to electricity by municipal category, 2016

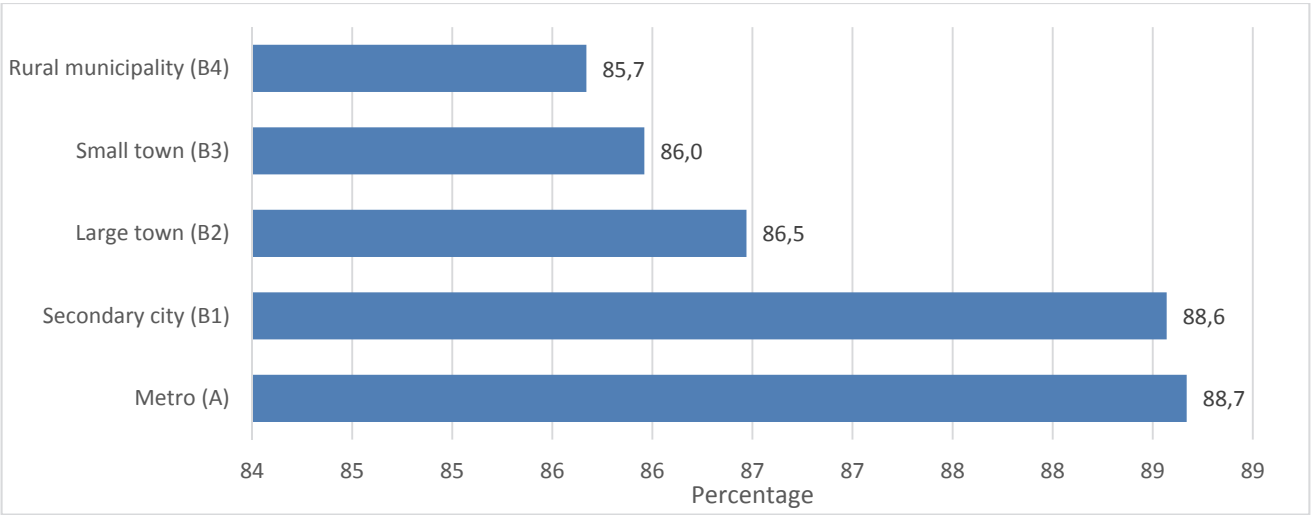
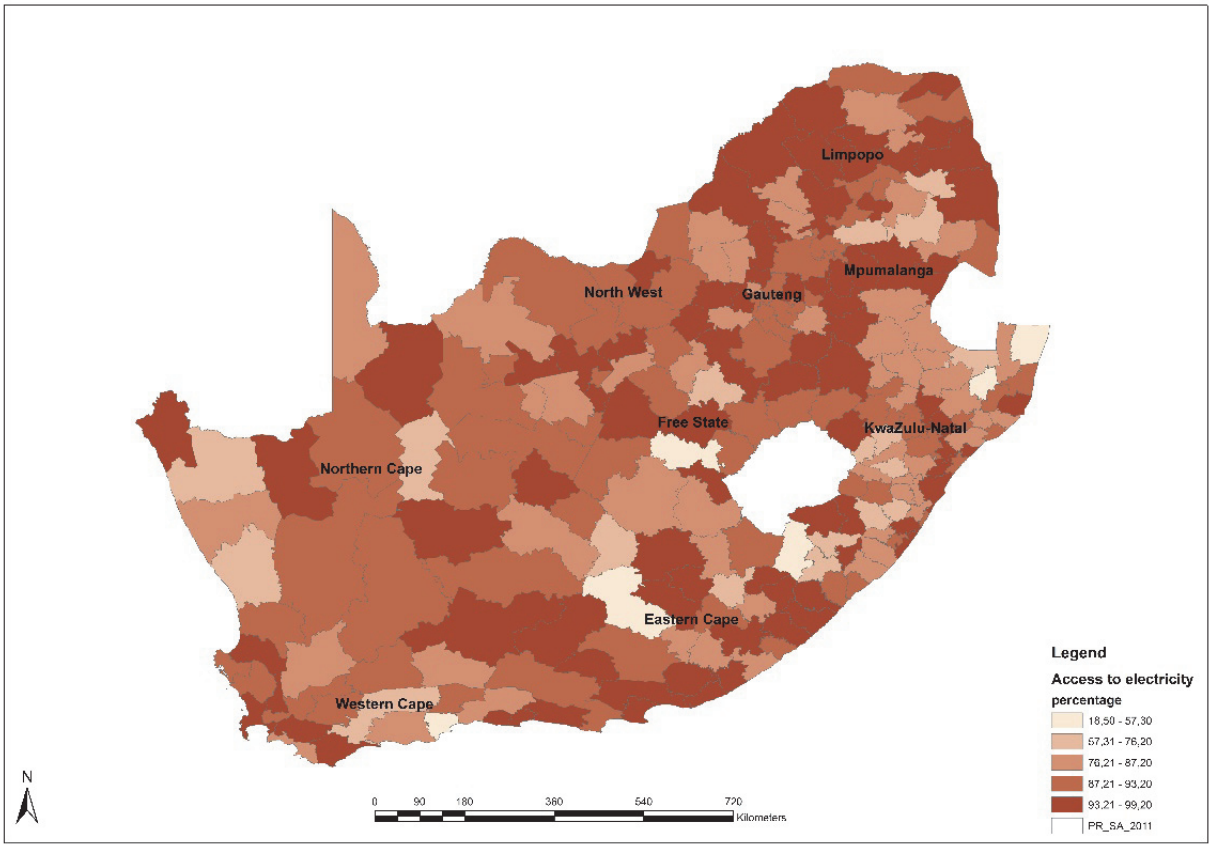


Figure 8.2 shows that access to electricity is higher in more urban municipalities than in rural municipalities. While 88,7% and 88,6% of households used electricity in metros and secondary cities (category A and B1 municipalities) respectively, access was only a few percentage points lower in rural (B4) municipalities.

Map 8.1: Percentage of households connected to electricity by local municipality, 2016



Household access to electricity across municipalities varied widely. The community survey found that only 18,5% of households in Umhlabuyalingana municipality had access to electricity. The lowest access figures were recorded in Jozini (41,6%), Ntabankulu (52,8%), Maphumulo (57,0%), Emadlangeni (57,2%) and Msinga (57,3%). By contrast, almost all households in Aganang (98,9%), Ba-Phalaborwa (98,6%), Camdeboo, Dr JS Maroka, and Swartland (all 98,4%) had access to electricity. Unlike services such as water, sanitation and solid waste disposal that followed a similar national geographic distribution, electricity is far more equitably distributed across South Africa. This is present in Map 8.1 and Adddendum 1. Municipalities with very large backlogs are predominantly located in rural areas and include Umhlabuyalingana where 81,5% of households reported not having access to electricity, as well as Jozini (58,4%), Ntabankulu (47,2%), Maphumulo (43,0%), Emadlangeni (42,8%) and Msinga (42,7%).

Table 8.1: Municipalities with the largest electricity backlogs, 2016

	Number of households			Percentage
Local Municipality	Access	No Access	Total	Backlog
Umhlabuyalingana	7 329	32 285	39 614	81,5
Jozini	18 560	26 024	44 584	58,4
Ntabankulu	13 857	12 398	26 255	47,2
Maphumulo	11 709	8 816	20 524	43,0
Emadlangeni	3 816	2 852	6 667	42,8
Msinga	23 186	17 305	40 491	42,7
Matatiele	33 980	22 892	56 872	40,3
Vulamehlo	8 503	5 348	13 851	38,6
The Big 5 False Bay	7 102	4 234	11 336	37,4
Westonaria	29 419	17 301	46 720	37,0
Umzimvubu	34 170	17 299	51 470	33,6
Karoo Hoogland	3 093	1 561	4 654	33,5
Elundini	23 957	12 035	35 992	33,4
Ndwedwe	23 257	10 626	33 882	31,4
Mbhashe	39 573	17 426	56 999	30,6
Indaka	13 983	6 057	20 040	30,2
Mier	1 406	606	2 013	30,1
Umzumbe	21 109	8 293	29 402	28,2
Thabazimbi	25 882	9 581	35 463	27,0
Mbizana	45 322	16 061	61 383	26,2
!Kheis	3 214	1 130	4 344	26,0
Emalahleni	131 855	45 279	177 135	25,6
Ubuhlebezwe	17 727	5 807	23 533	24,7
Umvoti	24 179	7 646	31 825	24,0
eDumbe	13 261	4 154	17 415	23,9
Nqutu	25 594	7 028	32 622	21,5
Mkhondo	36 163	9 431	45 595	20,7
Phumelela	11 636	2 950	14 586	20,2
Great Kei	8 525	2 139	10 664	20,1

Table 8.1 lists the 29 municipalities with the highest electricity backlogs. Backlog represents households that have not received access to electricity yet. Although the country has successfully increased the provision of electricity, further improvement is impeded by a range of factors such as the cost of extending electricity networks to rural areas due the long distances (Treasury, 2011). Due to the limited ability to generate revenue from poor areas, municipalities are slow to extend electricity services to these areas.

8.3 Free Basic Electricity

According to the DME (2002) the provision of electricity is particularly important to alleviate poverty. Municipalities are responsible to provide free basic energy within the parameters of the Electricity Basic Services Support Tariff (EBSST) Policy which entitles indigent or poor households to 50 kWh of free basic electricity per month, although municipalities might choose to provide more at their own cost. FBE is funded through the equitable share allocation (National Energy Regulator of South Africa,

2012). In municipalities where ESKOM provides electricity on behalf of municipalities, government grants have to be transferred to ESKOM to cover the cost of providing free basic electricity to targeted households. ESKOM had approved approximately 1,3 million customers in 2012, and had signed agreements with 243 municipalities (Presidency, 2015).

Table 8.2: Number of households that received free basic electricity services, 2011–2015

	Basic Electricity services				
Province	**2011**	**2012**	**2013**	**2014**	**2015**
Western Cape	1,215,410	1,236,228	1,241,350	1,253,953	1,309,171
Eastern Cape	997,571	1,116,022	1,144,731	1,201,152	1,239,611
Northern Cape	248,465	263,969	267,951	272,534	282,298
Free State	656,332	667,310	697,926	710,420	729,206
KwaZulu-Natal	1,526,952	1,539,986	1,609,718	1,660,276	1,722,779
North West	775,743	834,074	876,531	903,494	929,815
Gauteng	1,925,463	2,137,638	2,182,341	2,392,766	2,519,827
Mpumalanga	670,271	784,485	788,862	818,561	905,790
Limpopo	1,103,549	1,169,008	1,188,629	1,227,732	1,247,023
South Africa	**9,119,756**	**9,748,720**	**9,998,039**	**10,440,888**	**10,885,520**
	Free Basic Electricity				
Province	**2011**	**2012**	**2013**	**2014**	**2015**
Western Cape	538,083	542,230	560,877	565,442	549,590
Eastern Cape	355,200	308,780	313,343	300,888	329,928
Northern Cape	97,397	96,914	68,292	64,961	68,528
Free State	305,454	210,373	171,847	169,170	144,663
KwaZulu-Natal	193,048	215,287	180,181	238,732	282,547
North West	144,645	162,724	152,030	171,714	156,862
Gauteng	344,709	548,372	677,341	784,362	888,748
Mpumalanga	271,474	276,172	262,848	176,270	166,430
Limpopo	226,922	199,398	141,913	151,804	160,194
South Africa	**2,476,932**	**2,560,250**	**2,528,672**	**2,623,343**	**2,747,490**
Percentage of BE	**27,2%**	**26,3%**	**25,3%**	**25,1%**	**25,2%**

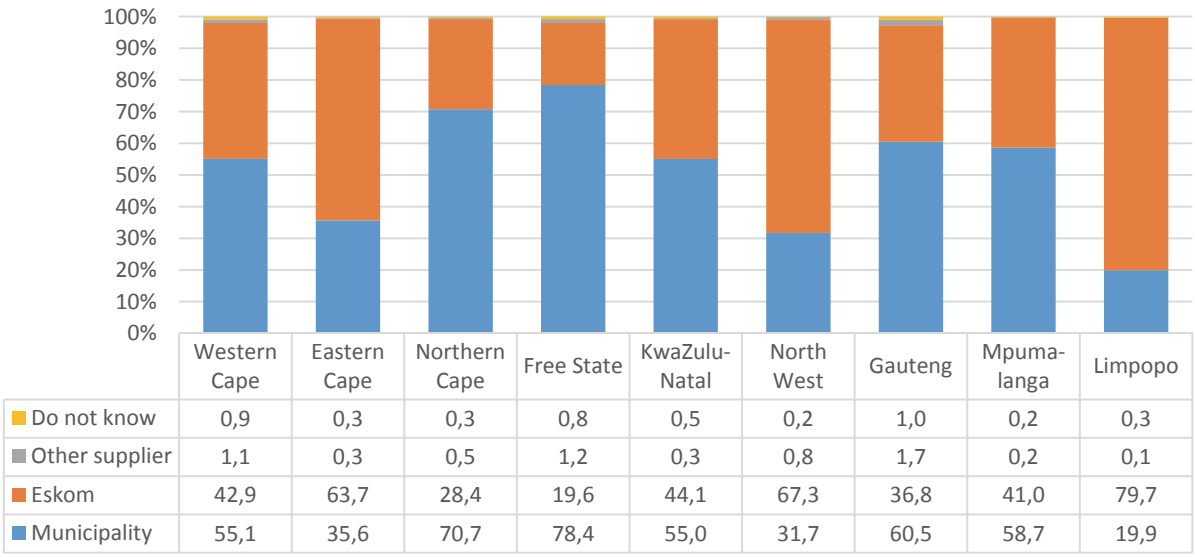
Source: Non-Financial Census of Municipalities for the financial year ending 30 June 2015.

Table 8.2 shows that the number of consumer units that received electricity from South African municipalities increased by 1,8 million or 19,4% since 2011. The number of consumer units that received free basic electricity from municipalities, however, only increased by 10,9% to 2,7 million units during this time. Consumer units that received Free Basic Electricity, as a percentage of all consumer units that received a basic service, decreased from 27,2% in 2011 to 25,2% in 2015. This is much lower than the equivalent figure of 46,5% reported in 2006 (Treasury, 2011: 120). The decline could be attributed to improved targeting of indigent households.

8.4 Main supplier of electricity services

The responsibility to distribute electricity to consumers is shared between municipalities and Eskom. This creates a situation where different areas in the same municipality could receive services from different service providers. Electricity is an important source of revenue for municipalities and revenue lost to Eskom reduces the available funds to cross-subsidise other services with. The use of different service providers that are often using different tariff structures in the same municipality, can create confusion among consumers.

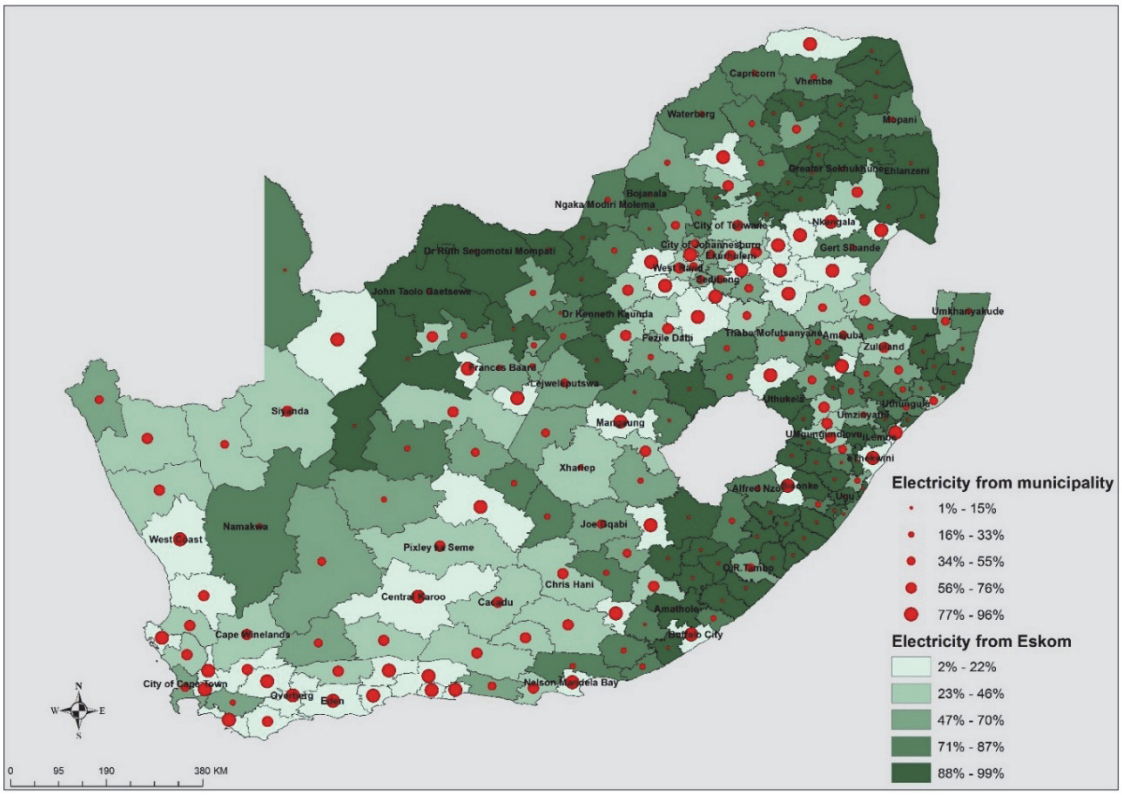
Figure 8.3: Main supplier of electricity by province, 2016



	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpuma-langa	Limpopo
Do not know	0,9	0,3	0,3	0,8	0,5	0,2	1,0	0,2	0,3
Other supplier	1,1	0,3	0,5	1,2	0,3	0,8	1,7	0,2	0,1
Eskom	42,9	63,7	28,4	19,6	44,1	67,3	36,8	41,0	79,7
Municipality	55,1	35,6	70,7	78,4	55,0	31,7	60,5	58,7	19,9

Figure 8.3 shows large variation across provinces with regards to the provision of electrical services by municipalities or Eskom. Municipalities provided services to the majority of households in Free State (78,4%), Northern Cape (70,7%), Gauteng (60,5%) and Mpumalanga (58,7%), while Eskom was particularly active in rural provinces such as Limpopo (79,7%), North West (67,3%) and Eastern Cape (63,7%). This is geographically represented in Map 8.2.

Map 8.2: Percentage of households that received electricity from Eskom or municipalities, 2016



Map 8.2 shows that Eskom predominantly supplies electricity to households in the rural municipalities of Eastern Cape, KwaZulu-Natal, North West, Limpopo and Mpumalanga, while municipalities are generally the largest suppliers in stronger municipalities that contain larger towns.

Figure 8.4: Main supplier of electricity by local municipality, 2016

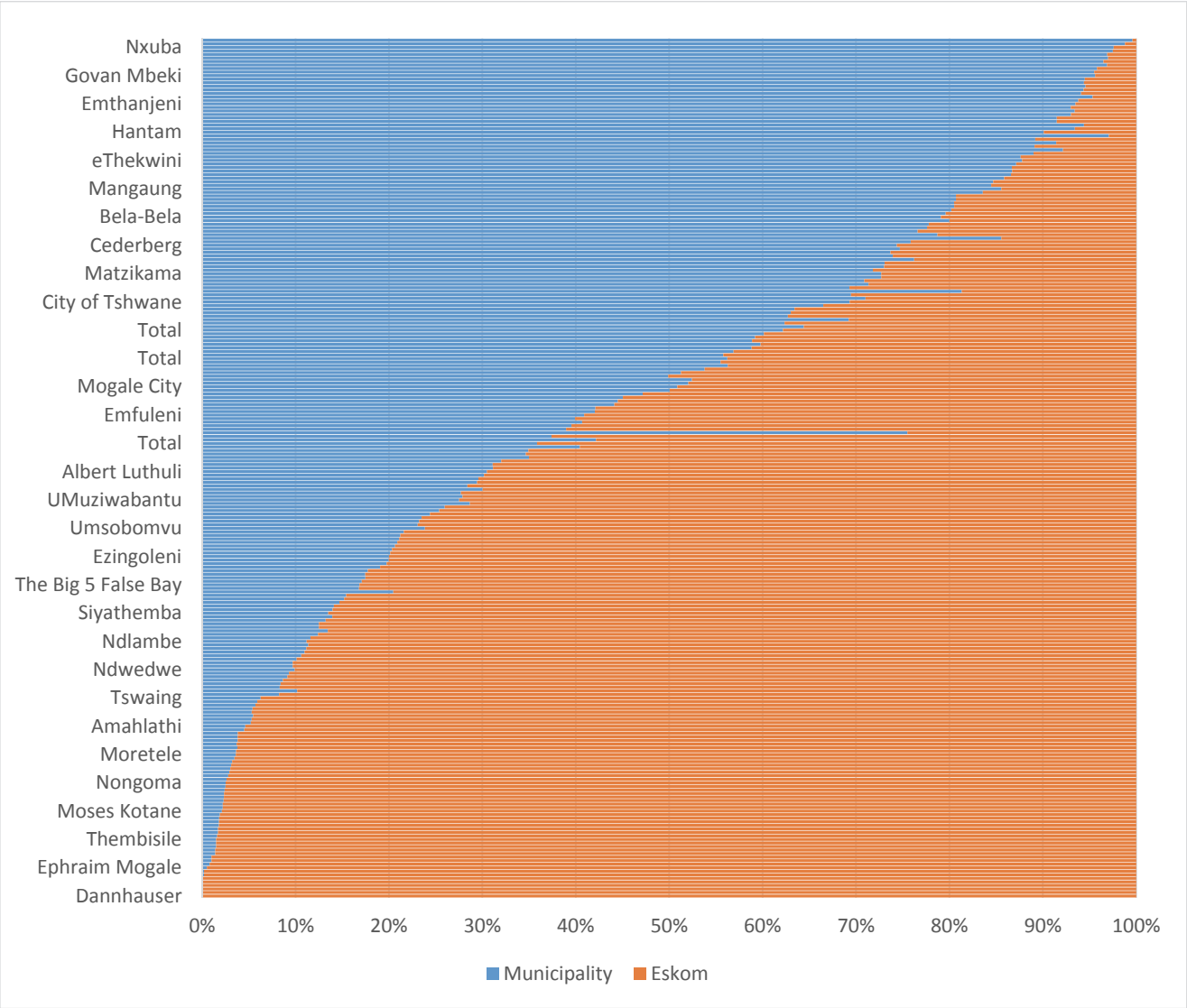
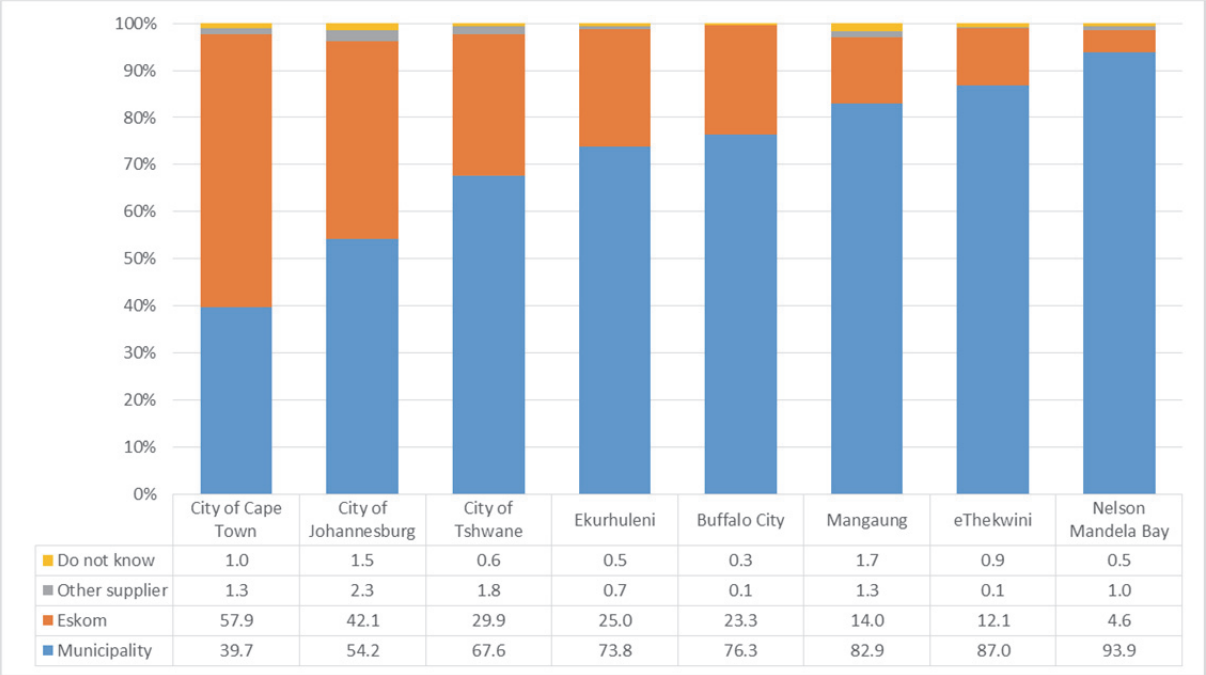


Figure 8.4 shows that a much higher percentage of households received their electricity directly from Eskom in rural municipalities such as Dannhauser and Mier (100%), and Fetakgomo (98,7%). By contast, municipalities were almost exclusively responsible to provide electricity to households in municipalities such as Ngwathe (99,5%), Nxuba (97.6%), Oudtshoorn (97,5%) and Modimolle (96,9%).

Figure 8.5 shows that the City of Cape Town is the only metro in which the municipality provided electricity to the minority of households. By contrast, the metros provided electricity to 93,9% of households in Nelson Mandela Bay, 87% in eThekwini, and 82,9% in Mangaung.

Figure 8.5: Main supplier of electricity in the eight metropolitan municipalities, 2016

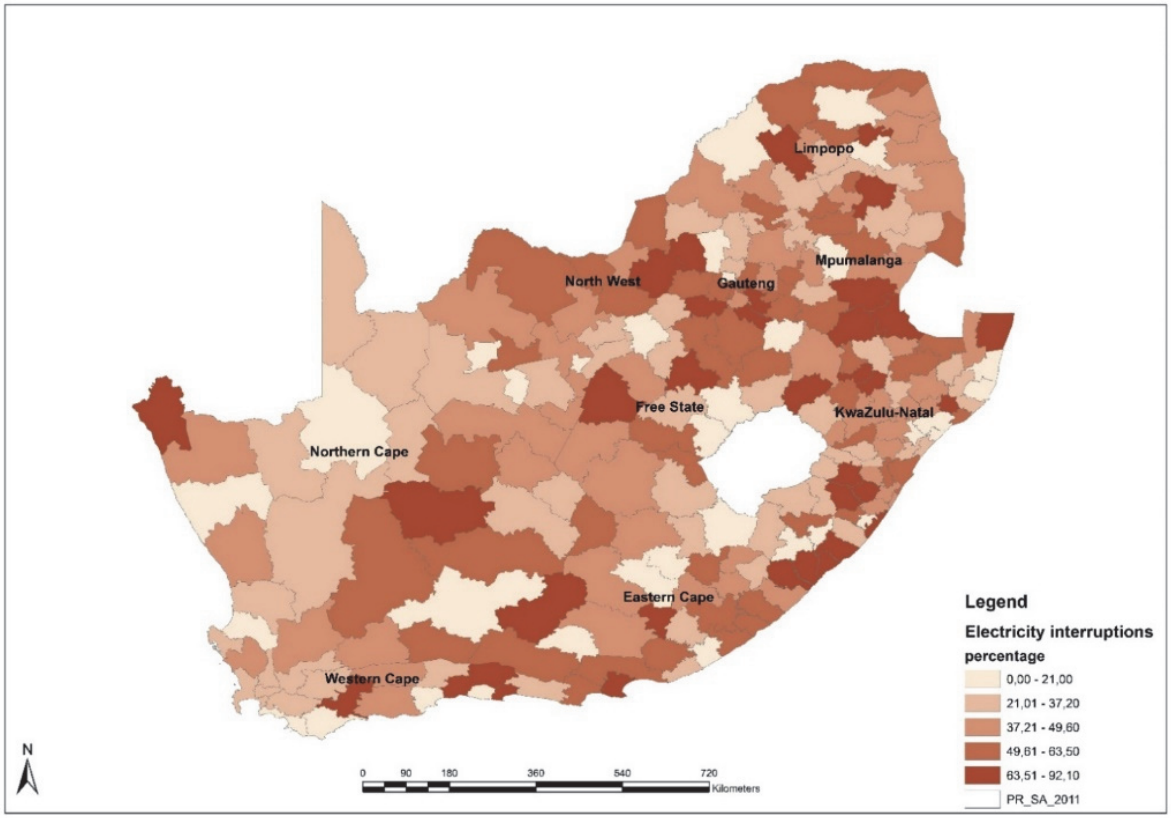


	City of Cape Town	City of Johannesburg	City of Tshwane	Ekurhuleni	Buffalo City	Mangaung	eThekwini	Nelson Mandela Bay
Do not know	1.0	1.5	0.6	0.5	0.3	1.7	0.9	0.5
Other supplier	1.3	2.3	1.8	0.7	0.1	1.3	0.1	1.0
Eskom	57.9	42.1	29.9	25.0	23.3	14.0	12.1	4.6
Municipality	39.7	54.2	67.6	73.8	76.3	82.9	87.0	93.9

8.5 Reliability of electricity services

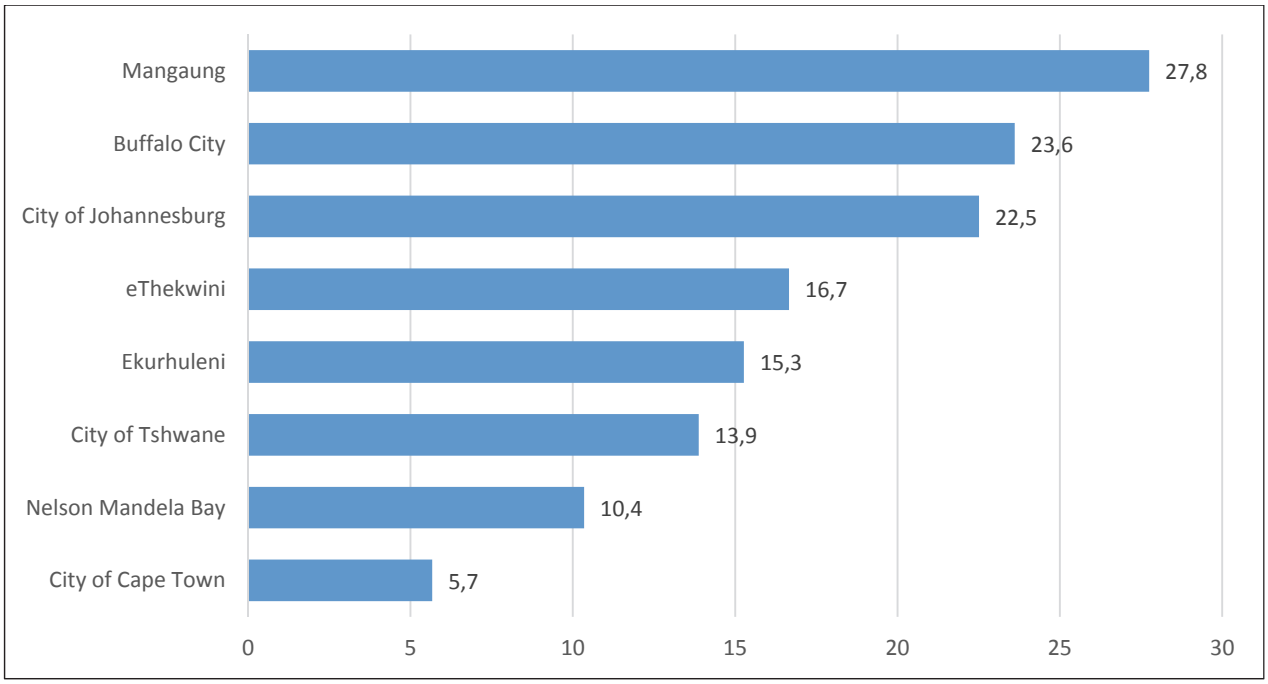
Despite being an important source of revenue for local municipalities, many municipal distributors have in the past neglected to do the required maintenance and investment (Treasury, 2011), thus raising the risk of power outages caused by ageing infrastructure.

Map 8.3: Electrical interruptions by Local Municipality, 2016



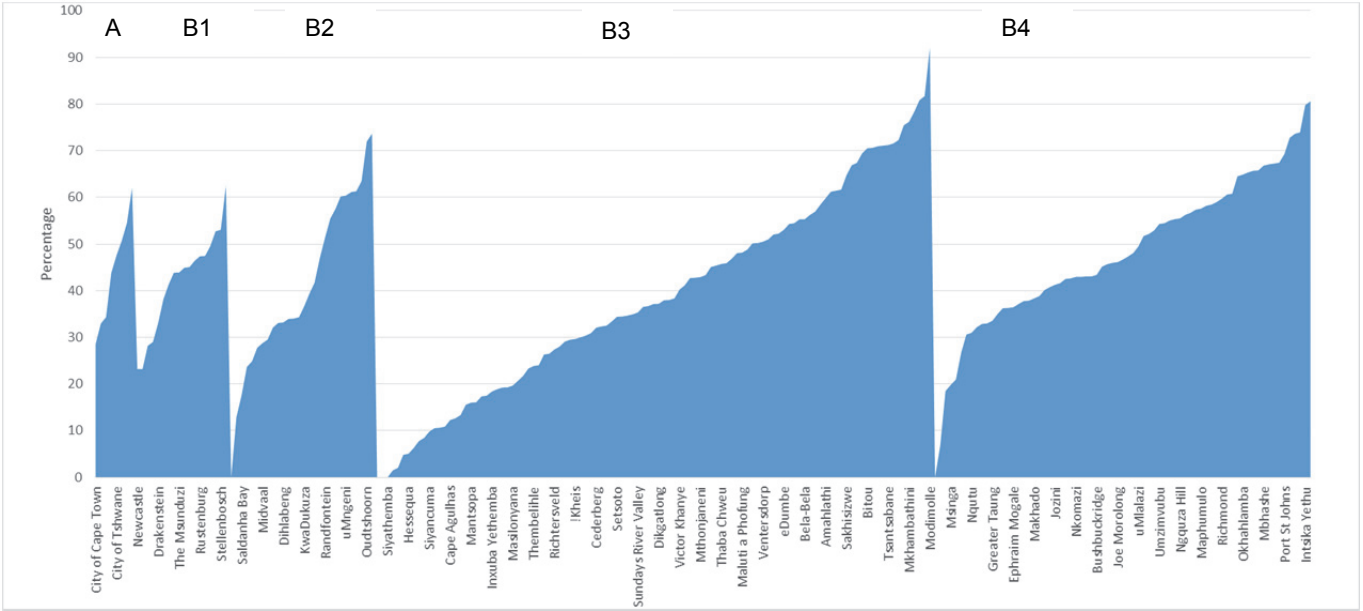
Nationally, 16,9% of households reported that they had experienced an electricity interruption during the three months before the survey. Map 8.3 and Addendum 1 shows that electricity interruptions were least common in Hantam (0,8%), Kareeberg (1,3%), Siyathemba (1,4%), Mier (1,6%) and Tshwelopele and Molemole (both 2,5%). Two-thirds of households in Modimolle (66,6%) reported interruptions. Interruptions were also very common in The Big Five False Bay (59,5%), Ventersdorp (50,6%), Great Kei (49,7%) and Inkwanca (46,8%), to name a few.

Figure 8.6: Electrical interruptions by metropolitan municipality, 2016



The prevalence of electrical interruptions in metros is presented in Figure 8.6. Electricity interruptions were least commonly reported in Cape Town (5,7%) and Nelson Mandela Bay (10,4%). Conversely, electrical interruptions were much more common in Mangaung (27,8%), Buffalo City (23,6%) and Johannesburg (22,5%).

Figure 8.7: Percentage of households that experienced interruptions whose interruptions lasted longer than 12 hours, by municipality and municipal category, 2016



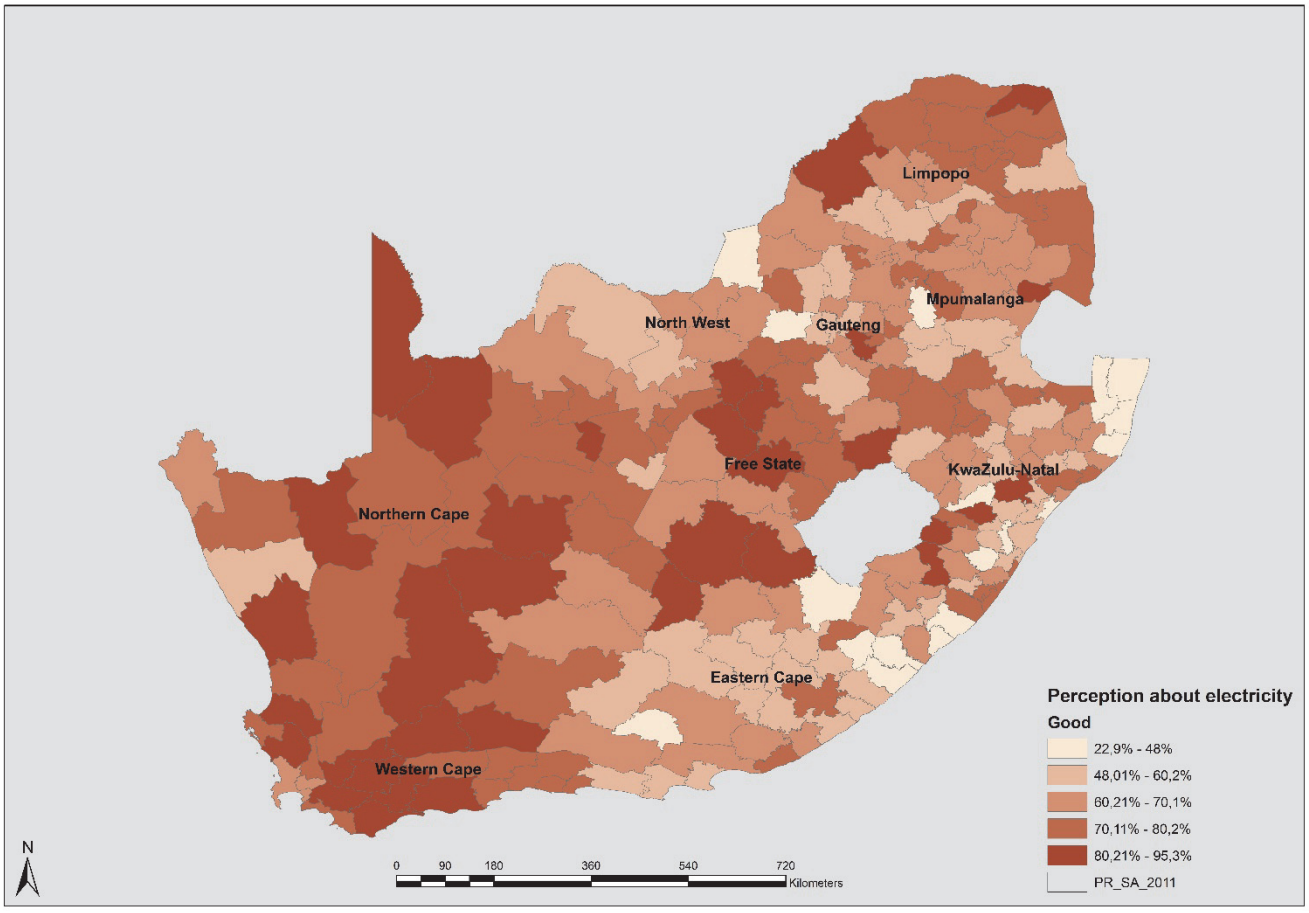
Of the households that experienced electricity interruptions, 48,4% reported that it lasted longer than 12 hours. Large variations are, once again, noticeable between municipalities. While no households in municipalities like Kareeberg, Mier and Siyathemba (all in Northern Cape) reported such long interruptions, interruptions that lasted more than 12 hours were most commonly reported by households that experienced interruptions in Modimolle (92,1%), Tsolwana (81,7%), Mtubatuba (80,8%), Vulamehlo (80,6%).

Figure 8.7 shows that municipalities with the largest percentage of 12 hour interruptions were located in B3 and B4 municipalities, followed by B2 municipalities. Large variation is noticeable within each municipal category.

8.6 Perception of electricity services

In order to establish residents' satisfaction with their electricity services, households were requested to rate the quality of the services they received as 'good', 'average' or 'poor'. An analysis of the responses of households who had access to electricity and who rated the service as 'good' is presented in Map 8.4.

Map 8.4: Percentage of households that rated electricity services as 'good' by local municipality, 2016



The map shows that households in two Northern Cape municipalities, Siyathemba (95,3%) and Umsobomvu (92,3%) were most satisfied with their electricity services. More than 80% of households rated their services as 'good' in 36 municipalities. Of these, 12 were in Western Cape, 8 in Northern Cape, and six in Free State.

The lowest positive ratings were given in Umhlabuyalingana (22,9%), Emalahleni in Mpumalanga (35,9%), Ventersdorp and King Sabata Dalindyebo (both 37,6%). Of the twenty municipalities in which less than one-half of households rated the electricity services as 'good', nine were in KwaZulu-Natal and eight in Eastern Cape. A higher percentage of households rated services as 'good' rather than 'poor' in all municipalities but Umhlabuyalingana where 48% of households rated the service as 'poor' compared to 22,9% that rated it as 'good'.

Figure 8.8: Household perception of electricity distribution services by province and municipal category, 2016

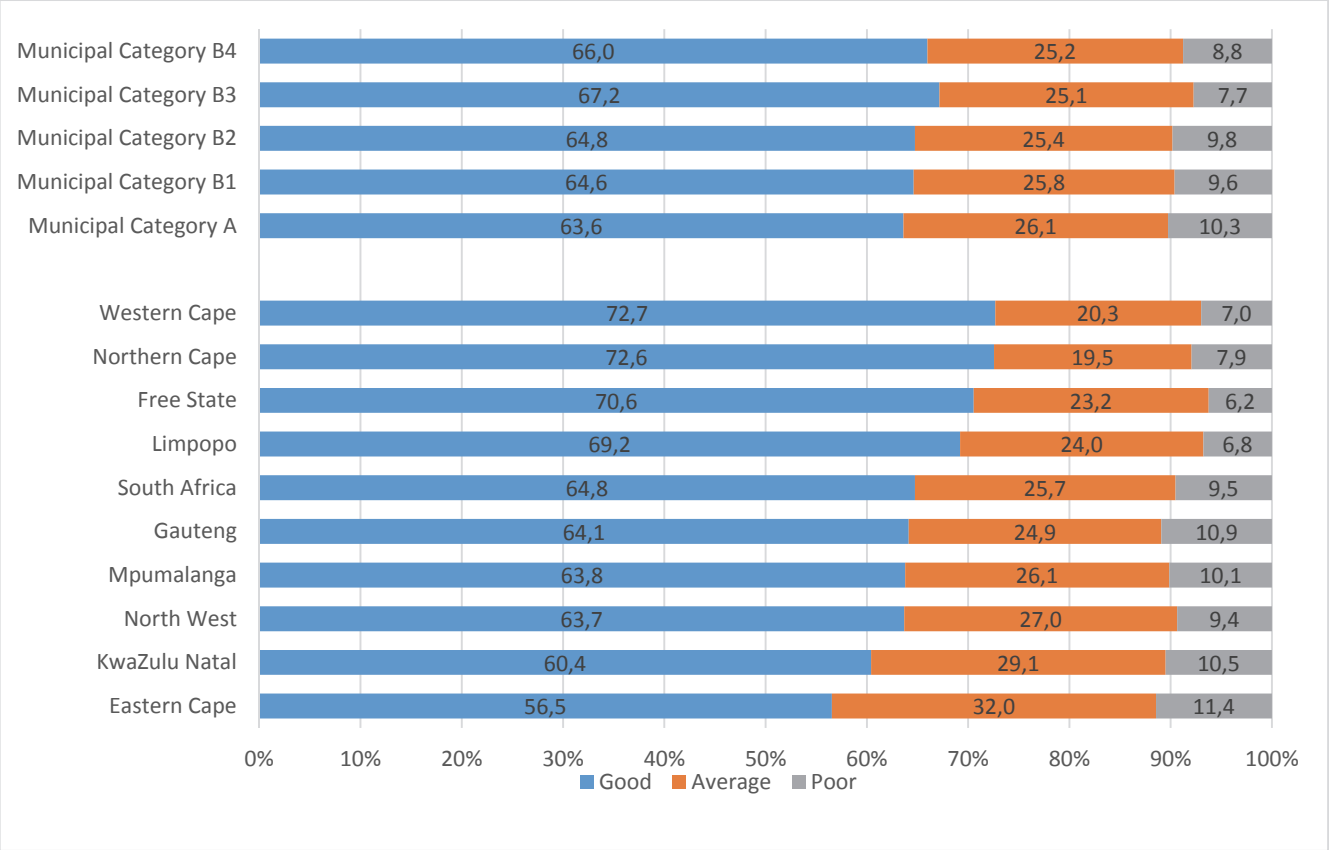
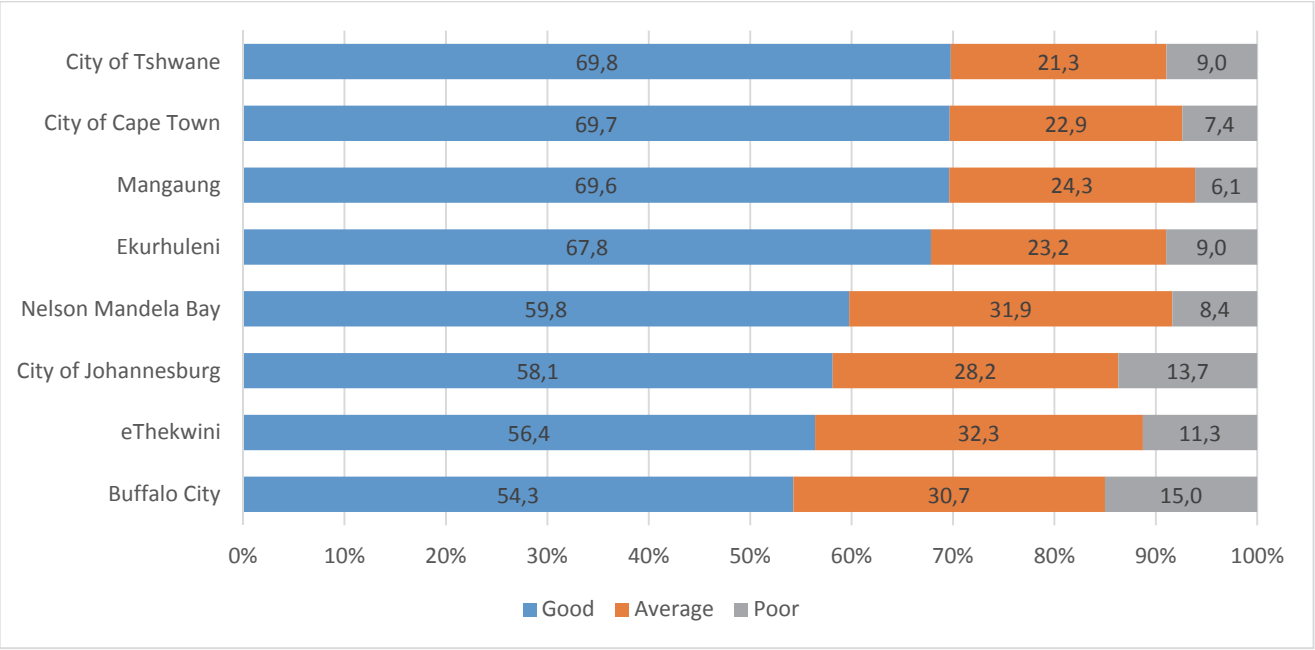


Figure 8.8 shows that approximately two-thirds (64,8%) of South African households were satisfied with the electricity they received. Households in Western Cape (72,7%) and Northern Cape (72,6%) were generally most satisfied with the electricity, while those in the more rural provinces of Eastern Cape (56,5%) and KwaZulu-Natal (60,4%) were least satisfied.

Household ratings varied little by municipal category. A slightly higher percentage of households in rural municipalities (66,0%) and small towns (67,2%) actually rated the electrical service as 'good' compared to households in metropolitan municipalities (63,6%).

In metropolitan municipalities, households in the Tshwane (69,8%), Cape Town (69,7%) and Mangaung (69,6%) were generally most satisfied with their electricity service, while a much smaller percentage rate the services as 'good' in Buffalo City (54,3%) and eThekwini (56,4%). This is presented in Figure 8.9.

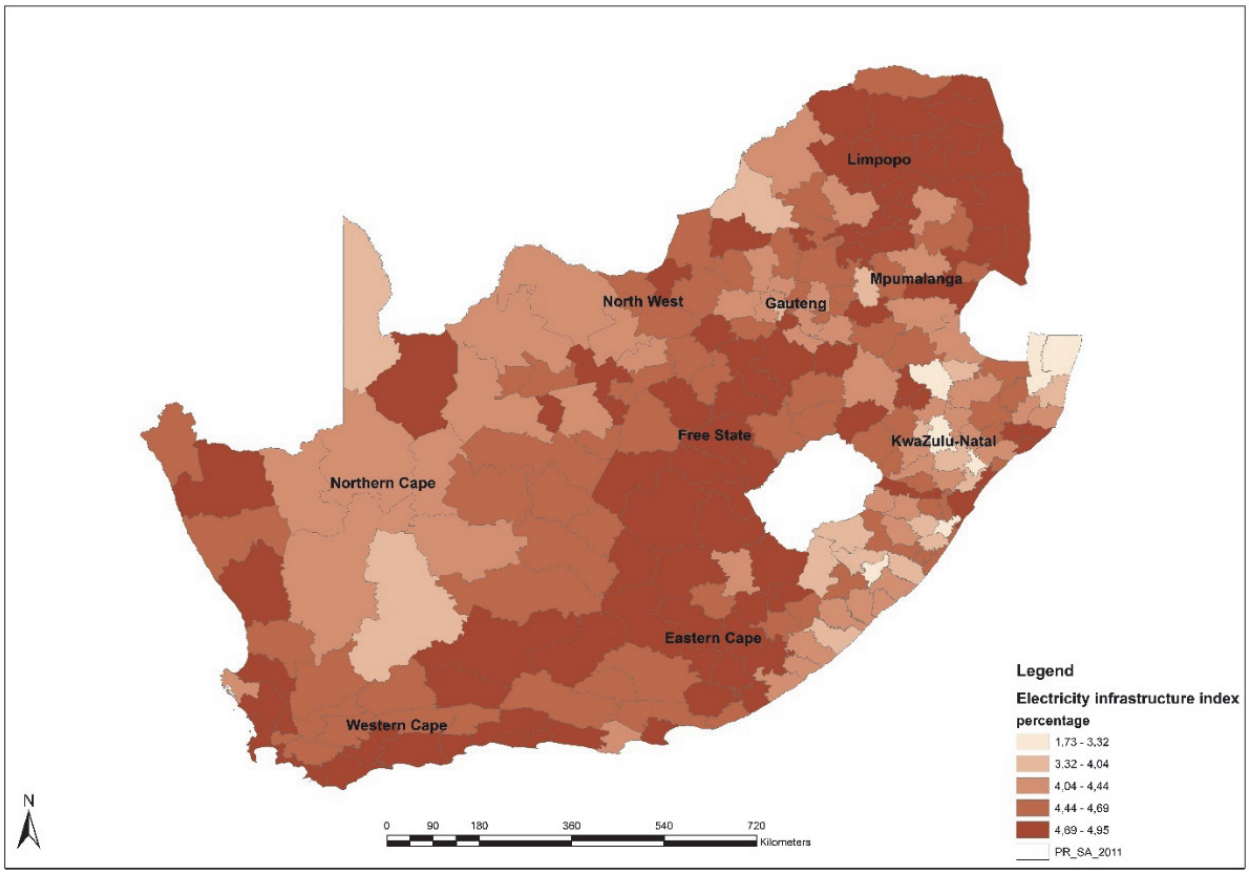
Figure 8.9: Household perception of electricity distribution services across metropolitan municipalities, 2016



8.7 Electricity services index

The electricity supply services infrastructure index describes the service that households have access to and which municipalities have to provide. Whereas a presentation on figures about the percentage of households with access to a particular level of figures would provide a one-dimensional picture of service delivery in a particular jurisdiction, this method allows for a much more varied, and accurate description and measurement of engineering services. As mentioned in the methodology section (see section 4.2.1), the infrastructure quality was calculated by categorising the quality of infrastructure/service according to five levels, namely no service, minimum, basic, intermediate and full. Numerical values between 1 and 5 are allocated to each level of service, one being the lowest (no service) and five the highest (electricity in the home), and the level of service provided is calculated as the average of the percentage of the population receiving a particular service. The index provides an indication of the quality of service that households have access to and is expressed as a number between one and five.

Map 8.5: Local Municipality infrastructure quality index for electricity by local municipality, 2016



The results of the analysis to calculate an electricity supply services quality index is presented in Map 8.5. The map shows that the highest index scores were calculated for Aganang (5,0) followed by 22 municipalities with index scores of 4,9, including Ba-Phalaborwa, Bitou, Moretele, uMhlathuze, Camdeboo, and Fetakgomo. Although the municipalities with high index scores were distributed across the country, many were concentrated in Limpopo, Free State, the Western part of Eastern Cape, some coastal municipalities in Western Cape and Northern Cape. It is important to note that a high index score does not imply that all households in a particular municipality have access to electricity in their homes, but rather that a substantial proportion of households do.

Table 8.3: Electricity supply service infrastructure quality index by province and municipal category, 2016

	Number of households by service level						Index
	None	Minimal	Basic	Inter-mediate	Full	Total	score
							Municipal category
Metro (A)	580 250	13 991	77 713	183 251	6 691 090	**7 546 295**	4,6
Secondary city (B1)	216 540	4 312	18 398	55 698	2 286 407	**2 581 355**	4,6
Large town (B2)	142 492	3 745	10 539	28 992	1 186 838	**1 372 606**	4,5
Small town (B3)	227 785	17 149	16 390	47 478	1 891 302	**2 200 104**	4,5
Rural municipality (B4)	377 667	24 008	27 735	32 317	2 761 221	**3 222 948**	4,5
Province							
Western Cape	65 109	2 236	10 643	62 678	1 793 211	**1 933 877**	4,8
Eastern Cape	217 455	20 109	21 505	18 703	1 495 622	**1 773 394**	4,4
Northern Cape	32 858	5 973	1 656	4 793	308 428	**353 708**	4,6
Free State	55 314	1 200	2 466	17 676	869 982	**946 638**	4,7
Kwa-Zulu Natal	311 533	12 626	44 654	45 025	2 462 004	**2 875 842**	4,5
North West	127 449	2 297	4 870	25 347	1 088 804	**1 248 767**	4,6
Gauteng	523 022	13 853	41 604	134 727	4 237 931	**4 951 137**	4,5
Mpumalanga	113 272	2 551	9 346	16 334	1 097 357	**1 238 860**	4,6
Limpopo	98 722	2 358	14 032	22 454	1 463 519	**1 601 085**	4,7
South Africa	**1 544 734**	**63 204**	**150 775**	**347 737**	**14 816 858**	**16 923 308**	**4,6**

Table 8.3 bears testament to the immense progress that the country has made in rolling out electricity supply infrastructure across the country. Although a hand full of municipalities scored very low in the index, indicating a lack of infrastructure and services, and many municipalities still contain large numbers of households that do not have access to electricity, the index suggests that most households have access to either full, or intermediate electricity. Table 8.3 shows that the index scores for provinces and municipal categories were very similar, indicating a relatively even distribution of electricity infrastructure. The table also indicates that approximately 1,5 million households did not have access to any source of electricity in 2016, compared to 14,8 million that enjoyed full access. A large number of the households that did not have access lived in metros (580 250) while a further 377 667 lived in the most rural B4 municipalities.

8.8 Summary and conclusions

The National Development Plan aims to achieve greater equity with regards to access to energy by expanding access to energy to 90% by 2030 and by maintaining affordable tariffs as well as targeted and sustainable subsidies for poor households. Non-grid options should be made available to the remaining households.

The success of the electrification programme is clear. Access to electricity is almost ubiquitous and 87,6% of households had access to electricity in 2016. Access, however, varies over space. Access to electricity is higher in more urban municipalities than in rural municipalities. While provincial figures are quite comparable in terms of access, municipal figures vary widely. The community survey found that only 18,5% of households in Umhlabuyalingana municipality had access to electricity compared to near universal access in municipalities like Aganang (98,9%), Ba-Phalaborwa (98,6%), and Camdeboo. Electricity is far more equitably distributed across South Africa than the other basic services.

Although the country has successfully increased the provision of electricity, further improvement is impeded by a range of factors such as the cost of extending electricity networks to rural areas due the long distances (Treasury, 2011). Due to the limited ability to generate revenue from poor areas, municipalities are slow to extend electricity services to these areas. Although electricity is potentially a very important source of revenue for municipalities, many municipal distributors have in the past neglected to do the required maintenance and investment, thus raising the risk of power outages caused by ageing infrastructure. Nationally, 16,9% of households reported that they had experienced an

electricity interruption during the three months before the survey. The experience of interruptions differ widely, ranging from 0,8% in Hantam to 66,6% in Modimolle. Almost one-half of all households that experienced interruptions reported that it lasted longer than 12 hours. Large variations were evident between municipalities, ranging from 0% to 92,1% in Modimolle.

Despite interruptions, 64,8% of South African households were satisfied with the electricity they received. Household rating varied little by municipal category.

Although a hand full of municipalities scored very low on the electricity supply index, indicating a lack of infrastructure and services, and although many households still contain large numbers of households that do not have access to electricity supplies, the index suggests that most households have access to either full, or intermediate electricity. Approximately 1,5 million households did not have access to any source of electricity in 2016, compared to 14,8 million that enjoyed full access. Most of the households that did not have access lived in metros (580 250) while a further 377 667 lived in the most rural B4 municipalities.

9 Composite service Delivery Index

The Infrastructure Quality index combines the individual index scores that were calculated for sanitation, water, refuse disposal and electricity in order to create an overall measure of service delivery across municipalities. This is done by creating a weighted average of the individual index scores.

Table 9.1: Composite service delivery index scores by municipal category and province, 2016

	Index				
Municipal category	**Sanitation**	**Water**	**Refuse removal**	**Electricity**	**Service delivery Index**
Metro (A)	4,7	4,5	4,5	4,6	4,6
Secondary City (B1)	4,4	4,3	4,0	4,6	4,3
Large town (B2)	4,3	4,0	3,9	4,5	4,2
Small town (B3)	4,3	4,0	3,6	4,5	4,1
Rural municipality (B4)	3,5	2,8	2,3	4,5	3,3
Province					
Western Cape	4,8	4,6	4,7	4,8	4,7
Eastern Cape	4,1	3,3	3,2	4,4	3,8
Northern Cape	4,3	4,1	3,9	4,6	4,2
Free State	4,4	4,3	4,1	4,7	4,4
Kwa-Zulu Natal	4,1	3,8	3,5	4,5	4,0
North West	4	3,8	3,7	4,6	4,0
Gauteng	4,7	4,5	4,5	4,5	4,6
Mpumalanga	4	3,9	3,2	4,6	3,9
Limpopo	3,6	3,3	2,6	4,7	3,6
South Africa	**4,3**	**4,1**	**3,9**	**4,6**	**4,2**

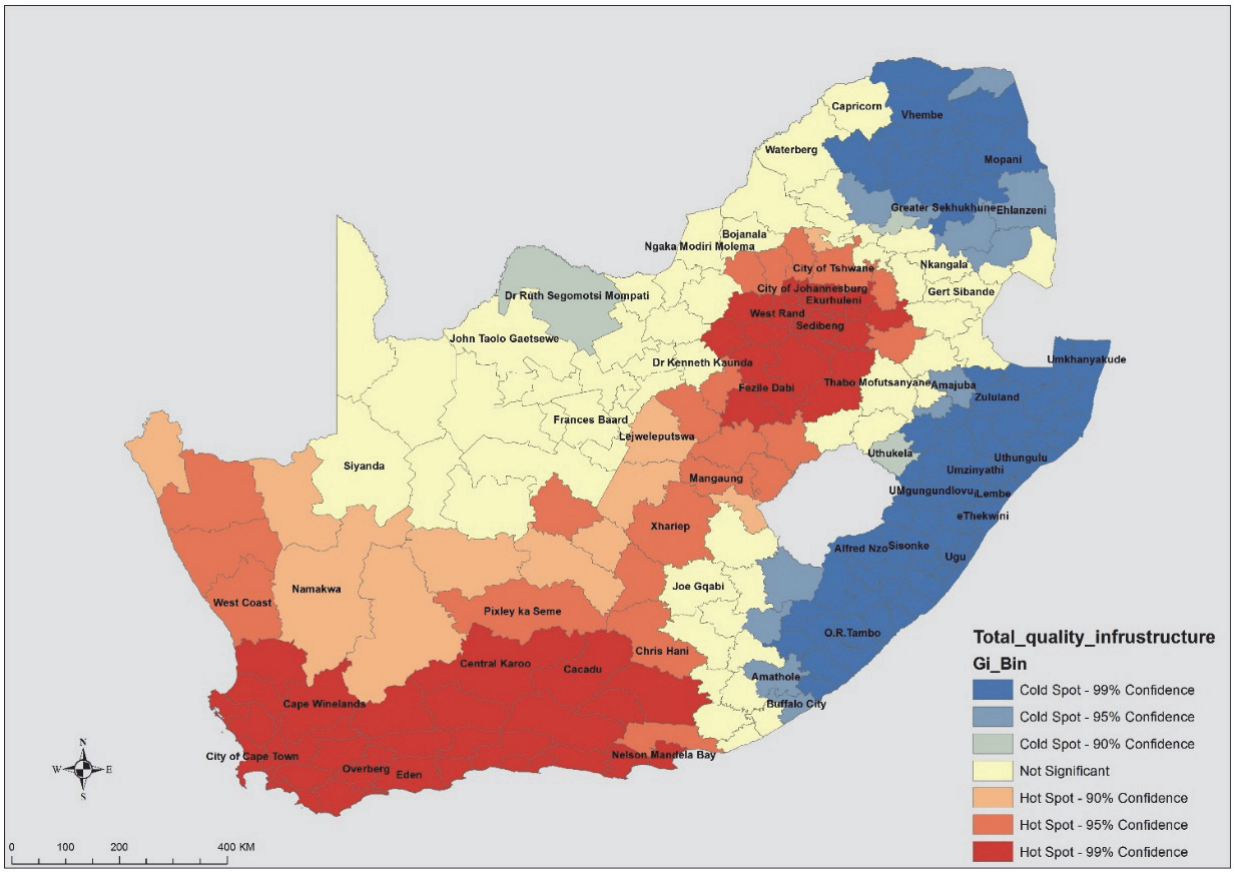
Table 9.1 shows that overall services were best in the metropolitan municipalities, followed by services in B1 municipalities. Services in the most rural B4 municipalities, as indicated through combined index scores, were the worst.

A provincial view shows that the service delivery index is highest in Western Cape (4,7) and Gauteng (4,6), and lowest in Limpopo (3,6), Eastern Cape (3,8) and Mpumalanga (3,9).

A hot spot analysis of the distribution of municipalities with particular service delivery index scores is presented in Figure 9.1 The figure shows that municipalities with the best service delivery scores were highly concentrated in the Western Cape province, Gauteng and Northern Free State. The lowest service delivery scores were located in Limpopo and in municipalities located in Eastern Cape and KwaZulu-Natal.

Map 9.1 presents the results of a hot spot analysis of the composite services index as measured through the index score awarded by province. Looking at the geographic interdependence between regions, the analysis identifies statistically significant hot or cold areas. Hot spots represent significant clusters of low values (high index scores), while cold spots represent significant clusters of high values (low index scores). Hot spot municipalities were largely concentrated in Western Cape, and the western part of Eastern Cape province, Gauteng, and Northern Free State. Two prominent hot spots were connected by a less prominent spine extending through the Northern Cape and Free State into Gauteng. Cold spot municipalities were mostly clustered across Eastern Cape and KwaZulu-Natal as well as central Limpopo

Figure 9.1: Hot spot analysis of composite service delivery index by local municipality, 2016



10 Customer satisfaction

Citizen satisfaction is the fundamental goal of a democratic system (IDASA, 2010). Municipalities face enormous challenges to fulfil the developmental mandate, and customer satisfaction provides a measure of how well local municipalities are doing (Chakrapani, 1998). Improving quality of service delivery requires continuous planning and monitoring, including a review of customers' perception of services on their experiences thereof. Perceptions and expectations are reversely proportional, while customer satisfaction is positively proportional with actual perception (Liu & Fang, 2009). Satisfaction is achieved when a person experience an outcome that fulfils his/her expectations (Munusamy and Fong, 2009). The perceptions of service delivery were measured in the Community Survey 2016 using simple questions aimed at establishing overall satisfaction with the overall quality of basic services using three response categories, good, average or poor. The main problems or difficulties facing municipalities from a household point of view are presented in Table 10.1.

Table 10.1: Problems or difficulties experienced by households by municipality category, CS 2016

Problems/Difficulties in the Municipality	Metros (A)	Secondary cities (B1)	Large towns (B2)	Small towns (B3)	Rural municipalities (B4)
Lack of safe and reliable water supply	5,6	15,5	18,8	23,9	43,2
Cost of water	5,8	6,6	5,4	4,9	4,8
Lack of reliable electricity supply	6,1	5,8	6,1	5,2	5,9
Cost of electricity	15,7	10,7	9,2	6,9	3,0
Inadequate sanitation/sewerage/toilet services	4,5	4,9	3,5	4,6	2,9
Inadequate refuse/waste removal	2,7	2,3	1,3	1,9	0,6
Inadequate housing	8,6	6,5	10,0	8,7	7,2
Inadequate roads	5,4	10,1	9,2	9,3	11,3
Inadequate street lights	1,3	2,2	1,6	1,5	1,2
Lack of/inadequate employment opportunities	11,4	12,4	12,4	11,4	11,2
Lack of/inadequate educational facilities	0,6	0,7	0,6	0,6	0,7
Violence and crime	10,2	5,5	4,7	2,2	1,7
Drug abuse	4,1	2,2	1,7	1,4	0,4
Alcohol abuse	1,0	0,7	0,7	0,7	0,4
Gangsterism	1,5	1,0	0,5	0,3	0,1
Lack of/inadequate parks and recreational facilities	0,6	0,5	0,4	0,4	0,2
Lack of/inadequate healthcare services	0,7	0,8	0,6	0,8	1,1
Lack of/inadequate public transport	0,5	0,4	0,4	0,4	0,4
Corruption	2,9	2,4	2,0	2,0	0,8
Other	1,7	1,3	1,8	1,9	0,7
None	8,9	7,6	9,4	11,2	2,1
Total	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**

Table 10.1 shows that, thinking of the services discussed in this report (water, sanitation, electricity and refuse removal), households in metropolitan municipalities were most concerned about the cost of electricity (15,7%) and least concerned about inadequate waste or refuse removal (2,7%). Households in metros rated the cost of electricity as more important than inadequate employment opportunities (11,4%) or violence and crime (10,2%).

The perceived lack of safe and reliable water is the single most important problem identified by households in secondary cities, large towns, small towns and rural municipalities, and its importance grows as households become more rural in nature, growing from 15,5% for households in B1 to 23,9% in B3. More than four-tenths (43,2%) of households in rural (B4) municipalities were concerned with a perceived lack of safe and reliable water, while only 0,6% of households in these areas were concerned about inadequate refuse removal services.

The perceived importance of problems that were identified by households varied significantly among municipalities (Addendum 1). While a large majority of households in Moretele (75,6%), The Big Five False Bay (71,4%), Modimolle (69,6%), Ephraim Mogale (64,0%) and Mtubatuba (62,7%) flagged the lack of safe and reliable water supply as the most important challenge, less than one percent of households in Baviaans (0%), Siyathemba (0,7%) and Laingsburg (0,9%) mentioned access to water. Inadequate refuse/waste removal was mentioned most commonly in Dikgatlong (13,3%), Tokologo (12,2%), Matjhabeng (11,1%) and Maquassi Hills (10,8%) but receive less than 1% of mentions in 128 municipalities. Inadequate sanitation or sewerage was noted as one of the most important challenges in

Tokologo (16,5%), Kai!Garib (16,2%), Mangaung (15,1%), and Mier (14%). The perceived lack of a reliable electricity supply was mentioned by 28,8% of households in Umhlabuyalingar, 25,6% in Ntabankulu, 21,9% in Unzimbvubu, and 20,4% in Vulamehlo, all four in either KwaZulu-Natal or Eastern Cape.

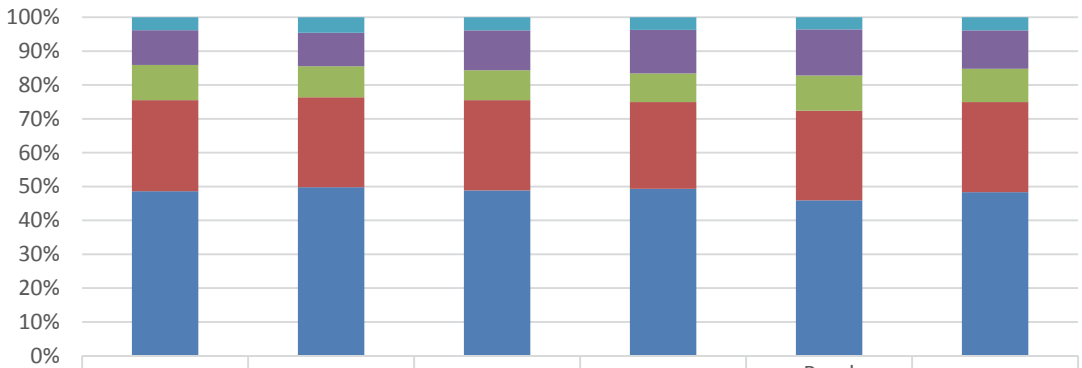
Table 10.2: Problems or difficulties experienced by households by individual metropolitan municipalities, CS 2016

Problems/Difficulties in the Municipality	Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	EThekwini	Ekurhuleni	Johannes-burg	Tshwane
Lack of safe and reliable water supply	3,0	35,8	4,9	9,3	9,7	4,9	4,0	7,1
Cost of water	5,8	1,8	10,6	5,3	4,7	6,8	3,2	8,8
Lack of reliable electricity supply	2,8	25,6	2,7	3,3	4,8	7,6	8,9	6,2
Cost of electricity	16,6	1,8	18,1	9,5	19,3	16,1	12,1	16,9
Inadequate sanitation/sewerage/toilet services	4,7	1,2	3,8	15,1	3,5	4,1	4,7	3,5
Inadequate refuse/waste removal	0,9	0,3	1,5	3,1	1,3	1,0	6,8	0,9
Inadequate housing	8,1	14,7	11,9	5,8	11,3	8,1	8,2	6,0
Inadequate roads	1,0	7,8	4,0	10,0	3,6	6,8	5,8	8,0
Inadequate street lights	1,0	0,1	1,2	1,2	1,0	1,6	1,4	1,9
Lack of/inadequate employment opportunities	8,4	7,7	13,0	10,1	13,3	12,2	13,7	8,2
Lack of/inadequate educational facilities	0,4	0,2	0,7	0,4	0,8	0,7	0,7	0,6
Violence and crime	18,6	0,1	8,2	4,1	10,3	7,9	10,4	6,0
Drug abuse	6,8	0,2	1,6	0,9	3,9	3,7	4,5	3,4
Alcohol abuse	1,5	0,5	0,6	1,2	1,1	1,2	1,0	0,7
Gangsterism	5,2	0,0	2,7	2,3	0,6	0,7	0,8	0,4
Lack of/inadequate parks and recreational facilities	0,5	0,4	0,2	0,2	0,8	0,6	0,7	0,6
Lack of/inadequate healthcare services	0,4	0,4	0,8	0,5	0,9	0,7	0,9	0,7
Lack of/inadequate public transport	0,5	0,4	0,1	0,2	0,8	0,4	0,5	0,5
Corruption	2,2	0,2	4,6	2,7	2,4	3,0	3,1	3,6
Other	1,7	0,5	2,3	2,8	1,1	1,7	1,8	2,2
None	9,7	0,4	6,6	12,2	4,8	10,3	7,1	14,1
Total	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**Total**	**100,0**	**100,0**

Table 10.2 shows that the importance of problems identified by households further differ substantially by individual metropolitan municipality. Although 16,6% of households in Cape Town were concerned with the cost of electricity, this is still less than the 18,6% that were concerned about crime and violence, the highest percentage among the eight metros. Households in Buffalo City rated a lack of safe and reliable water (35,8%) and a lack of reliable electricity (25,6%) as the most important concerns in their metro, giving it far more importance than in any other metro. Inadequate sanitation (15,5%) was the most important concern in Mangaung, while the cost of electricity was rated as the single most important concern in eThekwini (19,3%),Tshwane (16,9%), and Ekurhuleni (16,1%). Households in Johannesburg rated the cost of electricity (12,1%) just behind the lack of employment opportunities (13,7%).

Inadequate refuse or waste removal was flagged by 6,8% of households in Johannesburg, making it the seventh most important priority in Johannesburg, and much higher rated than in any of the other metros.

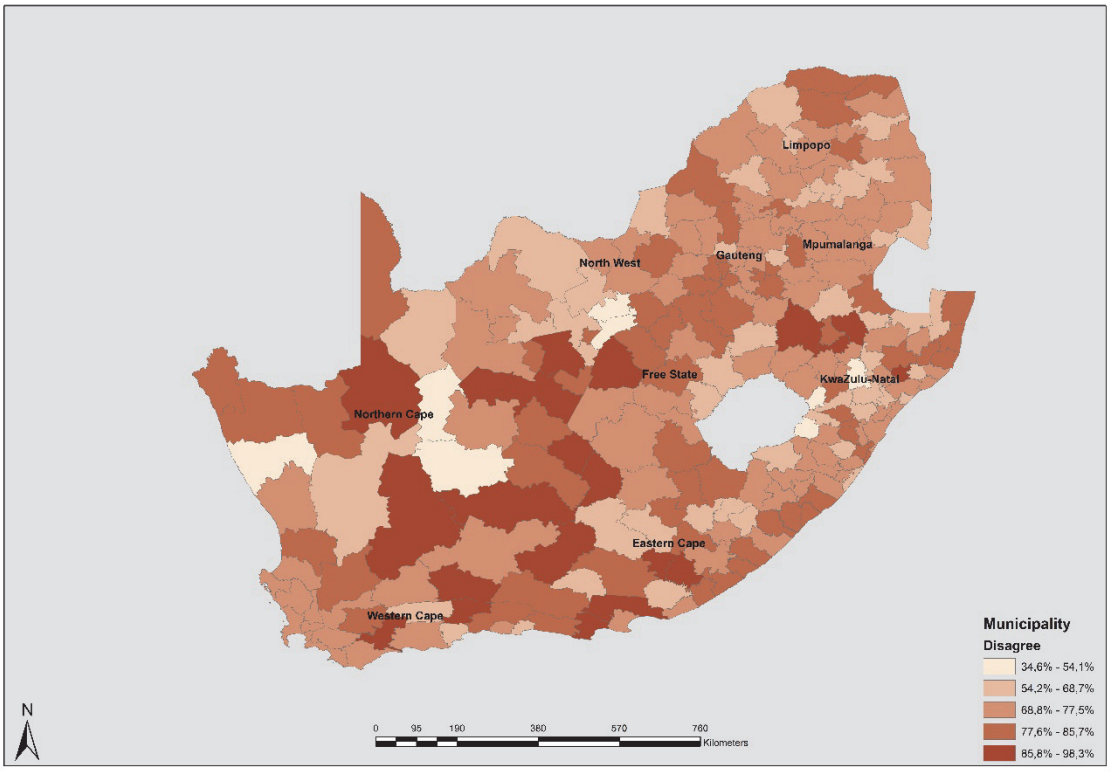
Figure 10.1: Percentage of households that believe that municipalities are attempting to solve the problems they have identified by municipal category, 2016.



	Metros (A)	Secondary Cities (B1)	Large towns (B2)	Small towns (B3)	Rural municipalities (B4)	South Africa
Strongly agree	3,8	4,6	3,8	3,7	3,6	3,9
Agree	10,3	9,9	11,8	12,9	13,6	11,3
Neither agree or disagree	10,4	9,2	8,8	8,5	10,4	9,9
Disagree	26,9	26,6	26,7	25,6	26,5	26,6
Strongly disagree	48,6	49,8	48,8	49,3	45,9	48,4

It is troubling to note that three-quarters (75%) of households nationally did not believe that municipalities were trying to solve the problems/difficulties they have identified. The figure is relatively consistent across all municipal categories. The highest distrust is observed in secondary cities (76,4%) and the lowest in rural municipalities (72,4%). These categories, however, hide significant variation, as can be seen in Map 10.1.

Map 10.1: Percentage of households that disagree with the statement that municipalities are attempting to solve the problems they have identified by local municipality, 2016.



An analysis of household responses to the question as to whether they agree with the statement that municipalities are trying to solve the difficulties they have identified in the CS questionnaire, identifies a large variation between municipalities. The strongest disagreement is noted for households in Nxuba (98,3%), Dikgatlong (96,3%), Camdeboo (95,5%), Swellendam and Mthonjaneni (both 92,9%). A much smaller percentage of households in Kwa Sani (34,6%), Kareeberg (41,9%), Kamiesberg (42,6%), !Kheis (46,2%), however, disagree. A large percentage of households in Kwa Sani (58,5%), Kareeberg (51,3%), Kamiesberg (49,6%) and !Kheis (48,6%) believed that municipalities are attempting to address the problems they have highlighted, compared to only 1,1% in Nxuba.

11 Summary and conclusion

The use of the individual water, sanitation, refuse removal and electricity indexes together with the composite index provide an important opportunity to track the improvement of basic service delivery across space and time by looking beyond the delivery of full services which are often unattainable or not cost effective. The index finds that the available infrastructure and accompanying service levels are worst for households in the poorer, mostly rural municipalities particularly Limpopo where many households have to rely on household dumping. The index also show large variations across provinces influenced by the rural composition of its population.

Households' satisfaction with the services they receive is influenced by the perceived importance of services and the level of service they receive from municipalities. While households in rural areas were more concerned with a lack of safe and reliable water, those in metros and larger municipalities placed more onus on the cost of electricity and the absence of employment opportunities. In metros, households in Buffalo City were most concerned with accessing water and electricity, while those in Mangaung complained about inadequate sanitation/sewerage/toilet services. Despite their different priorities, households across South Africa felt that municipalities were not doing enough to address those concerns.

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13 Addendum

13.1 Addendum 1: Household access to basic services

		Water			Sanitation			Solid waste	Electricity
Municipal Category	**Municipality name**	**Access to improved water**	**Access to piped water**	**Water interruptions longer than 2 days**	**Access to improved sanitation**	**Sharing toilet**	**Access to refuse removal**	**Access to electricity**	**Experienced interruptions**
	Western Cape								
B3	Beaufort West	96,7	95,6	20,7	97,5	18,3	92,3	96,6	6,3
B3	Bergrivier	98,6	97,5	25,2	98,0	17,0	84,2	97,7	15,6
B3	Bitou	96,4	94,5	27,2	94,9	44,8	89,9	98,2	70,5
B2	Breede Valley	98,0	96,9	15,8	91,5	30,3	84,5	90,1	33,9
B3	Cape Agulhas	93,2	93,2	31,6	92,0	16,3	91,4	97,6	12,3
B3	Cederberg	95,1	94,9	36,0	88,5	22,7	76,7	92,3	32,1
A	City of Cape Town	99,9	99,8	31,7	92,8	29,7	90,8	97,7	28,6
B1	Drakenstein	99,8	99,5	25,0	97,8	17,8	93,6	94,5	33,1
B1	George	98,9	98,7	25,4	95,1	27,0	97,3	97,8	38,1
B3	Hessequa	92,0	90,6	11,7	98,7	7,9	75,6	97,3	5,1
B3	Kannaland	94,5	93,6	16,0	90,5	6,8	81,9	93,0	2,1
B2	Knysna	97,3	96,6	32,4	92,9	23,2	96,0	94,6	27,8
B3	Laingsburg	98,9	88,1	41,5	97,9	17,6	80,6	87,5	21,7
B3	Langeberg	98,3	98,3	32,6	94,5	20,5	82,7	92,6	32,5
B3	Matzikama	98,8	98,8	18,0	95,3	14,3	89,6	97,2	30,4
B2	Mossel Bay	98,2	98,0	32,8	96,1	18,0	89,9	95,6	24,9
B2	Oudtshoorn	98,5	98,5	61,7	90,5	30,2	88,6	92,0	72,0
B2	Overstrand	99,3	99,1	36,0	99,2	34,4	94,7	96,9	34,0
B3	Prince Albert	98,9	97,9	11,1	96,1	12,4	95,8	96,8	26,5
B2	Saldanha Bay	99,5	99,5	47,6	85,8	32,9	87,1	86,5	17,6
B1	Stellenbosch	99,2	98,5	25,4	98,0	47,8	78,7	90,9	53,1
B3	Swartland	98,8	92,8	15,1	96,2	23,0	84,7	98,4	7,8
B3	Swellendam	97,3	97,2	27,1	96,9	22,4	88,6	97,6	58,4
B3	Theewaterskloof	98,8	98,4	15,5	92,1	20,2	81,9	90,1	4,8
B3	Witzenberg	99,3	99,3	32,5	96,6	25,4	88,6	94,6	38,0
	Eastern Cape								
B3	Amahlathi	83,3	82,1	60,8	40,0	15,1	12,3	94,8	59,8
B3	Baviaans	88,2	81,2	0,0	90,6	4,3	76,1	89,5	51,0
B3	Blue Crane Route	93,6	91,2	23,1	91,0	5,6	86,5	92,2	38,0

		Water			Sanitation			Solid waste	Electricity
Municipal Category	Municipality name	Access to improved water	Access to piped water	Water interruptions longer than 2 days	Access to improved sanitation	Sharing toilet	Access to refuse removal	Access to electricity	Experienced interruptions
A	Buffalo City	97,9	97,7	57,0	86,8	33,0	61,1	86,2	50,7
B3	Camdeboo	99,1	98,5	5,2	98,0	50,7	94,9	98,4	69,4
B4	Elundini	63,3	61,7	67,9	57,3	11,1	22,6	66,6	57,4
B4	Emalahleni	95,7	91,1	73,2	57,3	7,8	19,2	95,6	60,4
B4	Engcobo	48,8	47,8	88,9	40,8	17,6	3,2	86,9	72,8
B3	Gariep	99,8	93,0	28,2	95,9	14,0	86,8	93,1	17,5
B3	Great Kei	84,0	81,2	73,3	65,0	8,3	22,9	79,9	71,0
B3	Ikwezi	79,4	74,8	68,0	94,6	6,4	82,4	93,7	78,3
B3	Inkwanca	99,1	97,6	62,3	92,6	12,5	77,2	89,0	48,0
B4	Intsika Yethu	74,4	73,8	89,4	43,0	17,6	0,9	89,0	79,8
B3	Inxuba Yethemba	98,6	96,7	57,8	92,3	14,5	84,3	96,8	18,4
B2	King Sabata Dalindyebo	57,7	57,4	74,1	65,2	27,2	22,0	86,3	73,7
B3	Kouga	98,7	98,6	32,5	78,5	26,1	84,7	85,9	45,9
B3	Kou-Kamma	93,7	90,6	65,6	91,9	7,6	80,6	95,3	10,5
B2	Lukanji	96,5	95,0	66,1	80,5	27,9	52,5	92,9	57,5
B2	Makana	94,8	94,4	31,6	88,2	38,0	91,0	97,3	12,9
B3	Maletswai	98,8	97,1	63,0	82,3	45,8	87,2	85,6	19,3
B3	Matatiele	71,5	68,8	83,7	57,4	15,8	12,7	59,7	29,1
B4	Mbhashe	45,1	44,7	74,8	59,1	14,3	11,9	69,4	66,8
B4	Mbizana	23,3	22,2	79,9	79,5	16,2	1,5	73,8	43,1
B4	Mhlontlo	48,7	48,2	82,3	60,1	13,7	2,1	88,3	73,6
B4	Mnquma	64,5	64,3	69,6	62,3	11,5	17,7	81,7	51,7
B3	Ndlambe	90,8	89,9	45,7	81,9	41,2	89,7	90,9	41,2
A	Nelson Mandela Bay	99,1	98,7	37,3	93,3	21,2	90,4	96,0	34,3
B4	Ngqushwa	94,2	94,1	80,3	62,2	16,3	8,3	97,2	65,3
B4	Ngquza Hill	19,4	18,3	67,5	70,9	11,6	4,4	87,0	55,5
B3	Nkonkobe	95,2	95,0	80,4	58,3	15,7	23,6	97,4	61,2
B4	Ntabankulu	37,2	36,8	82,5	75,4	9,6	1,4	52,8	36,3
B3	Nxuba	96,9	95,7	59,6	89,0	9,9	72,8	96,9	12,6
B4	Nyandeni	30,1	29,2	79,1	64,3	10,8	1,7	86,4	73,9
B4	Port St Johns	20,3	18,7	84,8	26,7	8,4	0,6	84,2	69,3
B3	Sakhisizwe	93,1	92,2	72,0	53,1	6,6	7,2	95,3	64,7
B4	Senqu	76,0	72,2	86,8	53,9	16,7	14,0	94,7	46,0
B3	Sundays River Valley	86,0	83,4	81,8	67,9	31,6	63,8	90,1	35,3

		Water			Sanitation			Solid waste	Electricity
Municipal Category	Municipality name	Access to improved water	Access to piped water	Water interruptions longer than 2 days	Access to improved sanitation	Sharing toilet	Access to refuse removal	Access to electricity	Experienced interruptions
B3	Tsolwana	99,0	98,1	65,1	74,9	5,2	27,9	96,8	81,7
B4	Umzimvubu	53,4	53,3	81,8	77,7	19,1	5,4	66,4	54,3
	Northern Cape								
B3	!Kheis	93,2	88,4	71,7	72,9	11,9	62,4	74,0	29,7
B2	//Khara Hais	96,8	96,4	35,2	75,5	12,9	89,1	94,0	33,1
B3	Dikgatlong	98,2	94,1	67,8	80,0	44,2	36,0	84,3	37,2
B3	Emthanjeni	99,6	97,9	41,3	95,8	28,0	82,2	91,9	55,3
B4	Gamagara	98,4	96,1	52,9	86,1	47,4	81,2	88,7	58,5
B3	Ga-Segonyana	94,3	91,6	53,8	41,6	28,5	12,5	88,3	19,2
B3	Hantam	98,4	92,0	53,1	92,4	14,1	78,6	82,8	75,5
B4	Joe Morolong	96,5	87,6	80,6	60,3	21,2	4,2	86,0	46,1
B3	Kai !Garib	87,7	86,7	52,5	76,1	31,9	57,6	81,7	42,8
B3	Kamiesberg	96,0	92,2	76,3	74,4	19,2	82,1	90,9	61,7
B3	Kareeberg	98,3	86,2	55,2	89,7	8,1	86,7	84,5	0,0
B3	Karoo Hoogland	99,4	95,1	100,0	78,4	9,0	58,3	66,5	42,7
B3	Kgatelopele	99,4	98,8	31,7	96,7	16,4	94,2	96,0	71,5
B3	Khâi-Ma	97,4	95,4	37,1	87,6	6,0	88,3	85,1	1,5
B3	Magareng	97,8	96,3	90,7	90,0	13,3	63,1	95,0	48,8
B3	Mier	90,3	79,7	54,0	73,4	8,1	28,4	69,9	0,0
B3	Nama Khoi	98,8	97,9	58,2	91,6	7,6	93,0	96,2	52,0
B3	Phokwane	99,0	93,9	60,0	76,1	18,4	64,2	91,5	33,4
B3	Renosterberg	99,2	97,0	26,6	87,7	6,5	54,9	86,6	16,1
B3	Richtersveld	97,7	94,1	57,8	91,4	5,7	95,3	92,3	27,4
B3	Siyancuma	91,9	87,8	53,4	71,9	29,1	72,3	89,3	9,8
B3	Siyathemba	99,1	97,5	3,7	83,0	7,0	80,9	89,1	0,0
B1	Sol Plaatjie	99,5	99,3	41,1	89,8	29,8	84,8	91,8	49,6
B3	Thembelihle	98,3	87,9	14,3	77,0	22,8	61,9	86,5	23,9
B3	Tsantsabane	96,8	89,6	58,5	82,3	15,3	56,7	84,7	71,2
B3	Ubuntu	99,8	97,0	17,5	84,7	3,8	75,5	89,8	54,5
B3	Umsobomvu	99,3	98,7	47,2	84,8	31,8	77,0	95,2	43,4
	Free State								
B2	Dihlabeng	98,3	96,8	77,5	86,3	43,6	83,6	90,4	33,2
B3	Kopanong	98,8	93,8	62,4	90,2	38,5	77,5	94,5	66,9
B3	Letsemeng	99,1	94,4	18,3	85,4	34,3	58,7	96,3	10,6
B3	Mafube	98,7	98,1	34,5	80,3	30,5	88,6	95,7	23,3

		Water			Sanitation			Solid waste	Electricity
Municipal Category	Municipality name	Access to improved water	Access to piped water	Water interruptions longer than 2 days	Access to improved sanitation	Sharing toilet	Access to refuse removal	Access to electricity	Experienced interruptions
B3	Maluti a Phofung	89,7	89,0	82,8	52,8	24,8	22,1	94,8	48,2
A	Mangaung	99,7	98,8	60,3	78,9	28,0	83,6	95,9	32,9
B3	Mantsopa	99,0	93,4	74,6	90,0	27,1	68,7	95,0	16,0
B3	Masilonyana	95,9	93,7	82,8	86,1	44,9	78,0	93,2	19,7
B1	Matjhabeng	99,0	98,2	22,3	85,2	28,1	80,8	95,8	29,0
B2	Metsimaholo	99,7	99,2	65,6	74,8	35,4	78,6	85,5	23,7
B3	Mohokare	99,5	96,1	74,3	91,7	35,5	76,8	94,1	71,1
B2	Moqhaka	99,3	96,1	65,7	94,2	37,6	88,8	96,6	55,4
B3	Nala	99,3	95,6	49,9	86,8	21,9	85,9	89,4	56,2
B3	Naledi	94,6	93,1	69,7	88,5	61,2	41,7	97,6	50,8
B3	Ngwathe	99,0	96,6	58,6	86,1	29,5	87,9	95,0	20,7
B3	Nketoana	99,8	98,9	61,8	81,8	11,9	83,5	91,1	56,9
B3	Phumelela	95,6	94,3	72,4	73,7	36,6	67,9	79,8	18,9
B3	Setsoto	98,9	92,8	77,8	70,4	19,7	60,7	92,8	34,4
B3	Tokologo	99,5	89,6	93,1	78,5	45,9	49,0	93,1	45,4
B3	Tswelopele	96,7	92,8	53,3	82,7	16,5	85,1	95,2	17,3
	KwaZulu-Natal								
B3	Abaqulusi	84,7	81,3	81,3	56,8	41,5	42,8	83,0	54,3
B4	Dannhauser	93,3	90,7	44,2	70,7	36,0	9,7	92,4	67,4
B3	eDumbe	77,2	64,9	72,1	26,5	13,8	25,0	76,1	53,0
B3	Emadlangeni	71,1	64,1	58,7	69,2	24,7	30,4	57,2	30,9
B2	Emnambithi/Ladysmith	96,2	85,4	76,4	70,0	39,6	56,3	91,4	47,0
B3	Endumeni	91,3	88,3	45,9	79,8	33,2	75,6	86,4	34,5
A	eThekwini	98,9	98,4	56,4	77,3	33,0	83,6	95,7	62,0
B4	Ezingoleni	92,2	91,2	79,0	67,5	10,6	1,4	92,5	55,3
B2	Greater Kokstad	97,7	96,6	67,8	83,0	37,0	78,2	89,9	60,2
B2	Hibiscus Coast	97,0	96,4	63,6	67,4	30,8	31,2	88,6	34,3
B4	Hlabisa	46,6	35,7	89,5	29,4	45,8	1,0	86,8	46,7
B4	Imbabazane	77,0	64,0	58,9	47,5	46,8	0,7	92,2	32,9
B4	Impendle	86,3	76,8	77,4	78,6	19,9	1,1	96,3	6,8
B4	Indaka	77,3	67,4	84,2	74,7	41,0	20,0	69,8	47,3
B4	Ingwe	61,3	59,3	72,7	48,7	15,0	5,3	81,6	33,0
B4	Jozini	57,2	52,3	71,9	39,1	35,0	6,5	41,6	41,3
B4	Kwa Sani	88,4	85,3	51,6	58,6	56,2	61,5	89,0	52,1
B2	KwaDukuza	95,1	94,3	55,3	46,7	27,3	59,5	95,5	36,7

		Water			Sanitation			Solid waste	Electricity
Municipal Category	Municipality name	Access to improved water	Access to piped water	Water interruptions longer than 2 days	Access to improved sanitation	Sharing toilet	Access to refuse removal	Access to electricity	Experienced interruptions
B4	Mandeni	77,1	75,8	76,4	54,3	57,3	24,9	90,6	65,7
B4	Maphumulo	47,8	46,9	70,0	16,1	24,1	0,3	57,0	57,6
B4	Mfolozi	80,8	74,8	76,3	21,7	32,4	12,9	97,4	58,2
B3	Mkhambathini	84,7	82,5	87,0	45,7	15,4	9,9	91,6	76,2
B3	Mpofana	76,9	76,5	75,5	84,7	41,9	58,1	80,6	36,7
B4	Msinga	56,2	38,8	83,4	80,8	35,8	0,4	57,3	19,8
B3	Mthonjaneni	91,9	89,1	81,4	53,6	47,3	29,1	87,8	42,9
B3	Mtubatuba	68,0	55,7	81,9	47,6	37,3	8,7	85,7	80,8
B4	Ndwedwe	45,5	43,1	54,6	46,0	18,7	1,1	68,6	40,8
B1	Newcastle	98,9	98,6	34,9	72,9	18,0	67,8	94,8	23,2
B4	Nkandla	73,9	70,4	77,5	70,7	25,1	5,0	80,9	65,8
B4	Nongoma	30,4	24,3	88,0	23,5	40,3	1,3	88,0	55,0
B4	Nqutu	88,7	78,6	69,0	44,6	31,5	7,1	78,5	31,0
B4	Ntambanana	50,3	47,4	77,3	36,7	45,9	0,8	93,5	32,2
B4	Okhahlamba	74,8	65,9	77,6	37,1	17,2	9,7	87,2	64,9
B4	Richmond	93,2	88,2	57,1	79,3	29,8	15,0	90,6	59,7
B3	The Big 5 False Bay	43,2	30,7	90,0	72,4	32,5	4,6	62,6	37,1
B1	The Msunduzi	99,0	98,8	48,0	67,6	32,0	51,6	96,3	43,9
B4	Ubuhlebezwe	65,4	54,3	73,1	48,7	21,7	10,4	75,3	67,2
B4	Ulundi	70,7	67,0	84,0	67,0	44,7	16,6	87,0	41,6
B2	Umdoni	99,3	99,0	83,5	46,7	35,1	29,8	91,3	39,4
B4	Umhlabuyalingana	82,3	52,0	74,6	54,2	21,7	0,7	18,5	64,5
B1	uMhlathuze	98,8	98,6	54,0	70,2	39,2	47,5	99,2	62,5
B4	uMlalazi	76,4	73,1	83,9	50,0	31,0	18,5	84,5	49,5
B2	uMngeni	89,8	88,0	50,4	76,9	13,0	71,9	88,6	60,4
B4	uMshwathi	67,7	65,5	58,2	42,8	26,7	11,4	80,5	45,1
B3	Umtshezi	81,3	79,1	51,5	55,8	19,7	46,4	83,4	13,3
B3	UMuziwabantu	83,7	80,7	83,7	63,0	9,7	14,7	89,6	50,2
B3	Umvoti	70,3	61,7	86,4	54,4	24,8	22,3	76,0	34,9
B4	Umzimkhulu	65,4	61,2	87,9	29,8	13,6	8,5	82,4	42,5
B4	Umzumbe	71,0	68,0	78,1	49,3	16,8	0,1	71,8	43,0
B4	UPhongolo	81,3	78,6	86,1	54,5	40,5	26,9	89,5	42,6
B4	Vulamehlo	67,7	64,5	88,2	53,3	20,1	0,7	61,4	80,6
	North West								
B1	City of Matlosana	99,5	98,5	57,1	95,7	23,8	93,3	95,0	28,2

		Water			Sanitation			Solid waste	Electricity
Municipal Category	Municipality name	Access to improved water	Access to piped water	Water interruptions longer than 2 days	Access to improved sanitation	Sharing toilet	Access to refuse removal	Access to electricity	Experienced interruptions
B3	Ditsobotla	89,3	79,7	72,6	63,9	20,7	41,2	89,0	70,6
B4	Greater Taung	98,5	94,5	73,1	76,5	35,4	5,8	93,9	33,6
B4	Kagisano/Molopo	96,7	79,0	68,6	72,2	23,9	0,1	86,1	48,1
B3	Kgetlengrivier	96,3	78,6	75,2	73,4	18,9	28,9	90,6	50,2
B3	Lekwa-Teemane	99,4	97,2	30,3	93,3	18,2	88,3	90,7	26,3
B1	Madibeng	89,5	77,8	73,0	42,3	39,1	39,7	88,6	47,5
B2	Mafikeng	93,4	82,6	71,4	57,5	28,9	60,2	93,2	41,7
B3	Mamusa	63,8	58,6	83,0	80,7	27,4	76,0	83,8	24,0
B3	Maquassi Hills	99,0	96,0	60,7	88,6	23,3	45,7	92,4	10,9
B4	Moretele	78,3	61,3	82,2	45,5	34,5	73,5	98,0	30,6
B4	Moses Kotane	92,5	83,2	86,8	48,3	20,3	80,8	94,5	56,7
B3	Naledi	97,2	92,6	44,8	82,0	28,5	70,5	80,5	22,6
B3	Ramotshere Moiloa	94,4	88,9	80,8	39,7	17,1	21,8	89,4	72,3
B4	Ratlou	85,6	74,9	76,6	43,2	37,0	0,1	88,2	56,3
B1	Rustenburg	95,3	93,7	67,3	69,7	48,4	72,2	83,7	47,4
B1	Tlokwe City Council	97,3	93,1	13,4	87,0	30,3	80,4	90,3	23,2
B3	Tswaing	84,8	78,5	83,8	50,6	28,7	29,4	89,1	34,7
B3	Ventersdorp	97,3	89,0	78,7	77,1	15,0	44,9	84,6	50,5
	Gauteng								
A	City of Johannesburg	99,6	99,1	44,8	93,6	49,3	89,0	90,4	54,5
A	City of Tshwane	96,3	94,4	53,0	81,3	32,1	82,8	92,0	47,6
A	Ekurhuleni	99,2	98,9	40,8	86,7	46,2	87,2	85,5	43,8
B1	Emfuleni	99,9	98,8	33,8	93,6	37,3	90,4	95,0	46,4
B3	Lesedi	99,1	93,1	25,0	91,7	34,9	84,1	91,7	36,5
B2	Merafong City	99,0	97,1	68,0	90,6	39,3	76,7	85,9	32,1
B2	Midvaal	97,5	88,3	36,1	82,2	44,1	84,3	82,1	28,8
B1	Mogale City	98,1	93,4	42,0	87,5	46,7	83,7	86,8	45,1
B2	Randfontein	98,0	88,8	74,8	88,7	30,3	78,0	85,0	51,3
B2	Westonaria	99,2	98,2	22,5	82,7	39,5	87,7	63,0	63,5
	Mpumalanga								
B4	Albert Luthuli	84,8	81,6	72,9	70,3	21,4	16,0	96,1	45,7
B4	Bushbuckridge	91,8	88,9	79,9	24,3	26,0	5,1	97,4	43,4
B3	Dipaleseng	98,4	90,6	59,7	75,8	33,4	74,9	81,5	61,4
B4	Dr JS Moroka	91,5	77,9	71,1	45,5	27,8	10,9	98,4	26,7

		Water			Sanitation			Solid waste	Electricity
Municipal Category	Municipality name	Access to improved water	Access to piped water	Water interruptions longer than 2 days	Access to improved sanitation	Sharing toilet	Access to refuse removal	Access to electricity	Experienced interruptions
B2	Emakhazeni	93,6	88,5	65,2	81,7	21,6	60,7	84,0	29,5
B1	Emalahleni	92,2	90,8	68,3	73,9	42,2	67,3	70,7	60,6
B1	Govan Mbeki	99,2	98,4	63,3	96,0	33,1	83,9	94,4	52,7
B3	Lekwa	98,2	93,7	70,0	91,5	18,8	66,5	91,0	45,1
B1	Mbombela	82,9	77,4	78,8	46,9	25,9	25,9	96,5	43,9
B3	Mkhondo	90,5	85,1	53,9	50,5	44,3	38,9	79,3	28,0
B2	Msukaligwa	94,9	91,7	65,8	79,1	36,8	63,9	82,6	61,3
B4	Nkomazi	89,1	85,3	82,5	40,4	19,2	18,6	95,9	43,0
B3	Pixley Ka Seme	93,9	90,2	26,3	82,8	20,2	59,2	87,9	8,4
B1	Steve Tshwete	97,8	95,3	52,1	88,2	34,4	82,0	90,1	44,9
B3	Thaba Chweu	95,2	89,0	71,0	80,4	28,4	62,3	89,8	45,7
B4	Thembisile	95,8	94,2	77,3	29,1	29,2	10,7	97,7	37,1
B3	Umjindi	93,4	89,2	63,6	65,7	23,2	71,4	89,0	52,2
B3	Victor Khanye	93,8	86,9	53,6	85,8	35,8	75,6	92,0	40,3
	Limpopo								
B4	Aganang	96,4	88,9	84,1	34,0	22,2	0,2	98,9	37,8
B3	Ba-Phalaborwa	98,2	96,7	74,7	74,4	33,9	43,2	98,6	38,3
B3	Bela-Bela	96,9	85,1	46,7	86,0	40,2	66,8	87,2	55,3
B4	Blouberg	95,5	81,3	76,6	42,2	20,4	19,0	96,5	59,0
B4	Elias Motsoaledi	79,4	63,5	88,3	25,2	21,4	13,2	94,1	38,8
B4	Ephraim Mogale	72,3	66,9	86,1	42,0	16,4	18,4	97,3	36,5
B4	Fetakgomo	81,1	74,8	87,2	42,5	27,4	16,4	97,8	60,8
B4	Greater Giyani	91,6	76,3	72,9	64,8	12,2	11,8	94,6	36,3
B4	Greater Letaba	90,9	85,2	78,6	53,4	30,6	9,3	96,6	40,2
B4	Greater Tubatse	78,6	68,8	85,5	33,7	21,0	9,0	83,2	67,1
B4	Greater Tzaneen	87,1	66,5	76,7	56,2	25,8	14,0	94,5	43,1
B4	Lepele-Nkumpi	93,9	77,8	80,8	39,6	26,6	22,5	98,0	52,9
B3	Lephalale	95,5	81,5	63,4	75,4	43,7	46,6	81,4	32,3
B4	Makhado	93,6	79,4	81,4	47,5	22,7	8,9	95,6	38,3
B4	Makhuduthamaga	77,0	69,8	80,1	20,8	23,5	1,5	96,0	54,5
B4	Maruleng	81,3	74,3	56,7	58,1	25,3	5,4	96,3	21,0
B3	Modimolle	96,8	92,7	87,0	76,8	31,4	67,4	87,1	92,1
B2	Mogalakwena	95,7	83,3	74,9	48,3	37,0	35,6	94,6	61,1
B4	Molemole	94,4	77,7	56,8	51,1	34,5	5,3	97,8	35,0
B3	Mookgopong	94,0	79,5	75,5	69,4	46,3	70,8	85,2	30,0

		Water			Sanitation			Solid waste	Electricity
Municipal Category	**Municipality name**	**Access to improved water**	**Access to piped water**	**Water interruptions longer than 2 days**	**Access to improved sanitation**	**Sharing toilet**	**Access to refuse removal**	**Access to electricity**	**Experienced interruptions**
B3	Musina	94,0	79,2	20,6	84,0	61,3	75,2	89,3	46,9
B4	Mutale	85,2	81,0	89,3	84,9	11,7	3,3	96,3	18,5
B1	Polokwane	96,8	91,7	76,0	62,1	36,8	47,7	94,8	41,3
B3	Thabazimbi	83,1	72,2	42,4	66,3	35,0	43,7	73,0	67,4
B4	Thulamela	92,0	87,8	90,6	43,0	25,0	15,0	96,0	37,9

13.2 Addendum 2: Household perceptions of basic services

Municipality name	Households rating of services as "Good'			
	Water	Sanitation	Solid waste	Electricity
Western Cape				
Beaufort West	58,5	63,3	76,4	71,0
Bergrivier	81,9	87,8	86,6	86,0
Bitou	88,6	80,4	84,2	79,4
Breede Valley	75,7	80,4	81,5	82,6
Cape Agulhas	84,3	86,5	88,9	82,2
Cederberg	72,4	75,5	80,6	74,1
City of Cape Town	75,1	72,8	75,3	69,7
Drakenstein	83,6	82,9	86,5	80,2
George	80,3	76,7	82,1	76,7
Hessequa	78,7	91,9	91,7	84,0
Kannaland	69,6	77,7	76,1	78,4
Knysna	64,3	70,3	84,3	73,3
Laingsburg	80,6	89,8	92,9	84,9
Langeberg	79,5	87,3	89,9	85,0
Matzikama	78,9	86,7	85,3	85,5
Mossel Bay	76,2	77,9	81,0	74,2
Oudtshoorn	75,9	76,7	75,8	71,0
Overstrand	81,0	79,4	88,6	76,2
Prince Albert	77,6	83,3	86,5	85,3
Saldanha Bay	67,0	72,8	78,8	76,5
Stellenbosch	69,6	64,5	64,6	65,3
Swartland	89,2	90,5	93,3	85,8
Swellendam	80,8	88,1	88,9	86,3
Theewaterskloof	70,4	74,8	77,3	82,7
Witzenberg	71,9	82,2	82,3	79,5
Eastern Cape				
Amahlathi	62,3	37,6	41,1	72,3
Baviaans	85,5	75,8	80,2	61,6
Blue Crane Route	65,9	55,3	77,7	65,3
Buffalo City	62,0	57,2	38,9	55,1
Camdeboo	39,9	49,6	50,1	49,1
Elundini	33,7	49,7	37,3	61,5
Emalahleni	46,2	41,0	43,3	55,7
Engcobo	26,4	45,9	19,0	41,7
Gariep	65,7	76,4	71,3	66,6
Great Kei	46,5	35,3	26,2	58,6
Ikwezi	30,6	42,9	39,5	45,3
Inkwanca	50,7	62,9	52,5	55,0
Intsika Yethu	41,8	44,1	18,2	58,1
Inxuba Yethemba	42,7	52,6	48,6	50,4
King Sabata Dalindyebo	27,8	34,5	21,9	37,6
Kou-Kamma	24,1	47,2	45,3	52,0
Kouga	59,5	55,4	64,7	56,1

Municipality name	Households rating of services as "Good'			
	Water	Sanitation	Solid waste	Electricity
Lukanji	52,2	60,8	55,8	52,8
Makana	43,9	62,3	66,0	69,0
Maletswai	64,0	61,1	61,5	64,5
Matatiele	31,8	47,7	36,5	65,9
Mbhashe	32,4	42,3	22,3	48,0
Mbizana	19,7	53,4	20,2	70,5
Mhlontlo	29,2	44,5	21,5	52,7
Mnquma	44,5	50,7	35,6	56,4
Ndlambe	55,2	62,9	70,3	77,9
Nelson Mandela Bay	60,1	61,0	64,0	59,8
Ngqushwa	67,0	40,9	38,7	64,7
Ngquza Hill	9,9	31,9	8,6	47,3
Nkonkobe	44,4	37,7	30,3	53,8
Ntabankulu	32,7	46,4	40,7	54,3
Nxuba	52,3	53,4	38,3	55,6
Nyandeni	24,1	52,4	15,5	65,0
Port St Johns	13,8	25,8	9,5	46,5
Sakhisizwe	47,9	50,1	33,6	70,8
Senqu	32,1	39,4	29,6	43,7
Sundays River Valley	39,4	35,5	43,8	60,4
Tsolwana	47,6	52,0	42,7	57,5
Umzimvubu	38,8	55,8	28,3	68,2
Northern Cape				
!Kheis	52,0	52,5	53,5	73,7
//Khara Hais	81,9	76,6	90,6	83,4
Dikgatlong	63,9	50,8	21,3	73,8
Emthanjeni	62,3	60,0	54,2	61,1
Ga-Segonyana	48,3	42,8	46,3	74,6
Gamagara	65,4	85,1	81,5	79,8
Hantam	48,1	75,7	74,8	75,5
Joe Morolong	45,1	46,6	38,0	66,9
Kai !Garib	55,6	61,3	65,3	73,6
Kamiesberg	54,7	41,7	63,6	58,1
Kareeberg	85,0	78,7	92,2	90,4
Karoo Hoogland	86,7	75,3	92,6	85,1
Kgatelopele	89,6	89,8	91,6	88,8
Khâi-Ma	57,4	70,8	50,9	87,7
Magareng	21,6	29,9	37,7	72,7
Mier	66,9	67,9	72,1	91,2
Nama Khoi	66,6	74,7	83,7	74,2
Phokwane	39,6	54,6	40,5	70,7
Renosterberg	64,8	71,1	59,5	76,9
Richtersveld	44,9	51,8	63,0	66,2
Siyancuma	76,6	62,9	67,6	79,5
Siyathemba	84,1	81,5	91,2	95,3
Sol Plaatjie	59,7	68,2	70,3	59,6

Municipality name	Households rating of services as "Good'			
	Water	Sanitation	Solid waste	Electricity
Thembelihle	64,1	60,0	53,5	71,2
Tsantsabane	64,1	77,2	70,6	78,2
Ubuntu	44,3	53,2	51,7	64,1
Umsobomvu	67,1	66,4	73,0	92,2
Free State				
Dihlabeng	86,3	80,6	84,1	92,0
Kopanong	72,4	76,8	66,5	85,2
Letsemeng	53,7	62,3	59,9	68,7
Mafube	57,7	78,0	68,1	78,9
Maluti a Phofung	43,3	35,8	26,9	50,8
Mangaung	67,2	58,9	62,6	69,6
Mantsopa	39,6	59,2	43,6	78,3
Masilonyana	49,7	64,9	57,1	80,6
Matjhabeng	65,2	68,1	39,8	75,3
Metsimaholo	77,1	68,1	73,0	64,9
Mohokare	58,8	72,2	78,0	82,8
Moqhaka	21,4	69,3	73,1	72,7
Nala	78,7	77,1	72,1	85,9
Naledi	43,2	53,3	25,8	70,1
Ngwathe	38,7	66,1	59,1	52,2
Nketoana	48,0	51,5	41,3	66,6
Phumelela	62,4	58,3	56,9	74,3
Setsoto	41,7	52,7	39,4	78,3
Tokologo	42,6	29,6	30,3	60,8
Tswelopele	86,7	77,9	91,6	89,9
KwaZulu-Natal				
Abaqulusi	25,6	48,2	45,6	50,7
Dannhauser	62,6	47,1	42,1	76,9
Emadlangeni	41,5	51,5	52,6	64,6
Emnambithi/Ladysmith	52,3	56,0	58,5	66,4
Endumeni	40,8	55,7	55,5	49,5
Ezingoleni	44,1	44,1	26,8	74,0
Greater Kokstad	73,7	69,3	74,5	83,4
Hibiscus Coast	63,4	61,6	66,8	75,2
Hlabisa	23,6	43,3	19,0	69,8
Imbabazane	26,5	44,6	22,4	61,9
Impendle	57,9	64,3	14,7	78,5
Indaka	27,0	40,1	25,7	62,5
Ingwe	32,4	60,6	29,9	69,4
Jozini	17,4	46,5	13,2	39,4
Kwa Sani	64,8	52,3	63,2	83,2
KwaDukuza	34,8	31,2	41,5	42,1
Mandeni	51,7	49,2	38,0	69,1
Maphumulo	19,6	42,3	18,4	50,3
Mfolozi	45,9	54,7	34,6	68,4
Mkhambathini	22,7	18,4	16,3	41,8

Municipality name	Households rating of services as "Good'			
	Water	Sanitation	Solid waste	Electricity
Mpofana	48,5	42,9	47,3	39,2
Msinga	27,2	47,1	17,9	57,3
Mthonjaneni	48,9	44,5	37,2	59,7
Mtubatuba	16,8	31,1	13,9	45,1
Ndwedwe	30,5	53,9	27,3	57,7
Newcastle	72,8	62,8	72,5	77,9
Nkandla	31,7	65,7	30,9	67,3
Nongoma	21,3	43,2	16,7	68,0
Nqutu	44,6	60,2	48,6	64,9
Ntambanana	30,2	22,9	12,4	57,9
Okhahlamba	27,4	32,7	27,8	62,8
Richmond	56,6	40,1	41,3	58,3
The Big 5 False Bay	23,3	38,0	20,5	45,7
The Msunduzi	66,9	53,1	47,5	57,8
UMuziwabantu	40,9	39,3	33,8	56,9
UPhongolo	46,9	46,4	42,7	75,0
Ubuhlebezwe	24,4	41,0	14,2	43,5
Ulundi	35,0	61,2	42,0	64,0
Umdoni	64,7	43,3	57,2	71,3
Umhlabuyalingana	22,2	31,7	17,7	22,9
Umtshezi	38,5	52,4	44,0	50,9
Umvoti	44,7	65,9	59,0	82,7
Umzimkhulu	23,4	33,7	18,5	62,0
Umzumbe	37,2	41,5	24,5	62,2
Vulamehlo	44,0	59,3	53,8	59,2
eDumbe	42,9	24,8	42,7	76,6
eThekwini	58,6	53,2	56,9	56,4
uMhlathuze	78,0	74,1	66,6	79,1
uMlalazi	40,1	63,6	51,1	74,2
uMngeni	72,6	71,0	77,1	82,6
uMshwathi	29,4	31,2	28,2	55,4
North West				
City of Matlosana	70,0	80,3	72,6	72,0
Ditsobotla	33,4	39,0	27,5	65,3
Greater Taung	51,7	52,3	45,2	63,9
Kagisano/Molopo	38,4	48,6	29,9	52,6
Kgetlengrivier	46,5	54,0	31,5	74,0
Lekwa-Teemane	55,2	75,6	77,9	75,6
Madibeng	35,1	36,3	38,5	58,1
Mafikeng	47,6	51,0	57,5	64,9
Mamusa	32,5	29,2	56,1	66,8
Maquassi Hills	59,1	70,9	37,6	90,3
Moretele	19,1	36,1	47,8	80,1
Moses Kotane	34,4	49,8	50,0	62,9
Naledi	36,0	48,7	44,6	50,8
Ramotshere Moiloa	33,7	32,6	35,2	45,1

Municipality name	Households rating of services as "Good'			
	Water	Sanitation	Solid waste	Electricity
Ratlou	39,8	36,6	28,0	66,2
Rustenburg	47,1	49,4	60,6	57,7
Tlokwe City Council	75,4	79,4	82,6	76,9
Tswaing	31,9	26,0	29,9	65,1
Ventersdorp	39,7	50,0	52,5	37,6
Gauteng				
City of Johannesburg	73,7	67,9	48,5	58,1
City of Tshwane	72,6	71,9	75,0	69,8
Ekurhuleni	74,1	71,8	73,8	67,8
Emfuleni	77,1	72,7	62,6	64,7
Lesedi	86,7	84,6	83,5	73,5
Merafong City	64,0	64,2	61,8	59,5
Midvaal	80,3	74,5	78,4	81,2
Mogale City	72,7	71,9	77,4	63,5
Randfontein	68,2	68,8	70,0	56,9
Westonaria	61,0	57,6	60,0	58,4
Mpumalanga				
Albert Luthuli	35,1	48,5	37,7	65,5
Bushbuckridge	45,8	37,1	30,9	74,9
Dipaleseng	52,7	78,1	52,2	63,6
Dr JS Moroka	43,2	36,9	23,9	66,4
Emakhazeni	48,5	72,1	41,0	66,2
Emalahleni	23,4	46,5	28,6	35,9
Govan Mbeki	75,0	66,8	65,1	58,0
Lekwa	50,6	60,8	50,3	52,6
Mbombela	35,0	38,4	39,9	64,1
Mkhondo	49,2	44,6	49,7	54,0
Msukaligwa	54,6	62,6	59,9	52,3
Nkomazi	41,1	49,8	33,6	75,3
Pixley Ka Seme	74,0	61,3	60,2	72,0
Steve Tshwete	60,9	73,2	77,6	74,3
Thaba Chweu	57,7	64,6	61,0	63,5
Thembisile	35,0	25,1	16,0	71,7
Umjindi	61,8	64,9	75,6	83,9
Victor Khanye	68,4	69,2	67,6	65,8
Limpopo				
Aganang	44,0	27,2	19,0	66,4
Ba-Phalaborwa	33,8	47,5	45,8	60,2
Bela-Bela	62,5	73,4	75,6	60,5
Blouberg	36,3	44,1	35,1	75,8
Elias Motsoaledi	38,2	27,9	25,4	64,5
Ephraim Mogale	21,2	37,2	37,5	72,5
Fetakgomo	21,9	37,7	25,1	74,2
Greater Giyani	41,9	63,0	39,7	79,4
Greater Letaba	42,0	56,9	38,6	74,8
Greater Tubatse	27,3	38,6	20,3	61,2

Municipality name	Households rating of services as "Good'			
	Water	Sanitation	Solid waste	Electricity
Greater Tzaneen	36,2	59,4	40,7	73,9
Lepele-Nkumpi	24,0	29,4	28,3	58,6
Lephalale	61,7	67,9	62,3	83,5
Makhado	36,8	52,1	40,3	71,1
Makhuduthamaga	23,8	28,5	14,9	63,9
Maruleng	34,4	55,8	31,3	73,0
Modimolle	41,8	67,6	67,6	53,1
Mogalakwena	36,9	37,7	29,3	63,8
Molemole	52,6	50,2	41,4	72,0
Mookgopong	35,7	51,3	36,4	50,8
Musina	72,5	82,4	76,0	76,8
Mutale	26,2	71,3	19,7	80,6
Polokwane	50,0	55,8	54,1	64,3
Thabazimbi	31,9	41,8	32,1	64,9
Thulamela	43,0	56,0	42,4	75,3

13.3 Addendum 3: Infrastructure Quality Index

Municipality name	Infrastructure Quality Index				
	Water	Sanitation	Electricity	Solid waste	Total
Western Cape					
Beaufort West	4,70	4,91	4,9	4,75	4,82
Bergrivier	4,82	4,93	4,9	4,51	4,79
Bitou	4,44	4,85	4,9	4,67	4,72
Breede Valley	4,52	4,78	4,5	4,45	4,56
Cape Agulhas	4,87	4,70	4,9	4,73	4,80
Cederberg	4,62	4,56	4,6	4,16	4,49
City of Cape Town	4,65	4,81	4,9	4,74	4,78
Drakenstein	4,77	4,94	4,7	4,77	4,80
George	4,68	4,86	4,2	4,87	4,65
Hessequa	4,80	4,95	4,3	4,25	4,58
Kannaland	4,82	4,69	3,9	4,41	4,46
Knysna	4,66	4,82	4,8	4,84	4,78
Laingsburg	4,43	4,92	4,6	4,40	4,59
Langeberg	4,76	4,82	4,6	4,43	4,65
Matzikama	4,78	4,85	4,0	4,66	4,57
Mossel Bay	4,74	4,85	3,3	4,61	4,38
Oudtshoorn	4,75	4,72	4,6	4,63	4,68
Overstrand	4,68	4,97	4,2	4,83	4,67
Prince Albert	4,70	4,86	4,4	4,86	4,71
Saldanha Bay	4,58	4,55	4,7	4,56	4,60
Stellenbosch	4,34	4,93	4,5	4,35	4,53
Swartland	4,77	4,88	4,5	4,53	4,67
Swellendam	4,84	4,89	3,9	4,64	4,57
Theewaterskloof	4,58	4,73	4,9	4,43	4,66
Witzenberg	4,71	4,89	4,2	4,64	4,61
Eastern Cape					
Amahlathi	3,22	3,56	4,8	2,40	3,50
Baviaans	4,77	4,67	4,5	4,25	4,55
Blue Crane Route	4,28	4,68	4,7	4,56	4,56
Buffalo City	4,17	4,56	4,4	3,76	4,22
Camdeboo	4,52	4,94	4,9	4,84	4,80
Elundini	2,69	3,71	3,3	2,55	3,06
Emalahleni	3,14	3,44	3,8	2,51	3,22
Engcobo	2,24	3,13	4,9	1,90	3,04
Gariep	4,38	4,85	4,9	4,57	4,68
Great Kei	3,13	3,56	4,6	2,55	3,46
Ikwezi	4,21	4,79	4,8	4,42	4,56
Inkwanca	4,24	4,78	4,8	4,26	4,52
Intsika Yethu	2,49	2,95	4,4	1,95	2,95
Inxuba Yethemba	4,54	4,72	2,7	4,42	4,10
King Sabata Dalindyebo	2,95	3,83	4,8	2,60	3,55
Kouga	4,32	4,32	4,4	4,48	4,38
Kou-Kamma	4,74	4,75	4,7	4,37	4,64

Municipality name	Infrastructure Quality Index				
	Water	Sanitation	Electricity	Solid waste	Total
Lukanji	4,11	4,40	4,7	3,55	4,19
Makana	4,33	4,65	4,7	4,73	4,60
Maletswai	4,26	4,49	4,3	4,53	4,40
Matatiele	2,81	3,57	4,8	2,26	3,36
Mbhashe	2,24	3,24	4,8	2,25	3,13
Mbizana	1,53	3,61	4,4	1,98	2,88
Mhlontlo	2,16	3,54	3,9	1,95	2,89
Mnquma	2,90	3,49	4,8	2,42	3,40
Ndlambe	4,25	4,33	4,8	4,66	4,51
Nelson Mandela Bay	4,70	4,79	4,9	4,64	4,76
Ngqushwa	3,17	3,69	4,8	2,21	3,47
Ngquza Hill	1,48	3,68	4,2	1,99	2,84
Nkonkobe	3,44	3,76	4,2	2,64	3,51
Ntabankulu	1,81	3,74	4,9	1,77	3,06
Nxuba	4,34	4,66	4,5	4,10	4,40
Nyandeni	1,80	3,73	4,7	1,95	3,05
Port St Johns	1,61	3,23	4,6	1,80	2,81
Sakhisizwe	3,41	3,65	4,8	1,93	3,45
Senqu	3,29	3,65	4,5	2,39	3,46
Sundays River Valley	4,05	4,16	4,9	3,81	4,23
Tsolwana	3,63	3,85	4,7	2,69	3,72
Umzimvubu	2,48	3,71	3,4	2,09	2,92
Northern Cape					
!Kheis	3,96	3,9	4,1	3,74	3,93
//Khara Hais	4,38	4,26	4,8	4,57	4,50
Dikgatlong	4	4,43	4,3	2,83	3,89
Emthanjeni	4,5	4,86	4,4	4,35	4,53
Gamagara	4,42	4,46	4,7	4,4	4,50
Ga-Segonyana	3,17	3,44	4,8	2,32	3,43
Hantam	4,53	4,71	4,5	4,32	4,52
Joe Morolong	2,82	3,45	4,4	2,08	3,19
Kai !Garib	4,21	4,1	4,7	3,6	4,15
Kamiesberg	4,36	4,27	4,4	4,45	4,37
Kareeberg	4,31	4,56	4,8	4,54	4,55
Karoo Hoogland	4,7	4,32	4,6	3,73	4,34
Kgatelopele	4,61	4,88	4,4	4,78	4,67
Khâi-Ma	4,59	4,48	4,7	4,58	4,59
Magareng	3,86	4,7	4,8	3,84	4,30
Mier	4,05	3,85	4,2	3,09	3,80
Nama Khoi	4,75	4,68	3,7	4,73	4,47
Phokwane	4,01	4,3	4,5	3,75	4,14
Renosterberg	4,36	4,54	4,7	3,52	4,28
Richtersveld	4,52	4,73	4,8	4,79	4,71
Siyancuma	3,98	4,09	4,7	4,11	4,22
Siyathemba	4,34	4,47	4,6	4,4	4,45
Sol Plaatjie	4,5	4,68	4,6	4,45	4,56

Municipality name	Infrastructure Quality Index				
	Water	Sanitation	Electricity	Solid waste	Total
Thembelihle	4,2	4,18	4,8	3,78	4,24
Tsantsabane	4,19	4,31	4,6	3,64	4,19
Ubuntu	4,41	4,46	4,6	4,2	4,42
Umsobomvu	4,35	4,55	3,7	4,27	4,22
Free State					
Dihlabeng	4,28	4,67	4,6	4,5	4,51
Kopanong	4,25	4,66	4,4	4,2	4,38
Letsemeng	4,39	4,61	4,5	3,71	4,30
Mafube	4,23	4,4	4,9	4,63	4,54
Maluti a Phofung	3,95	3,82	4,5	2,52	3,70
Mangaung	4,27	4,42	3,3	4,46	4,11
Mantsopa	4,2	4,66	4,7	4,02	4,40
Masilonyana	4,2	4,58	4,8	4,21	4,45
Matjhabeng	4,45	4,59	3,8	4,31	4,29
Metsimaholo	4,6	4,28	4,5	4,3	4,42
Mohokare	4,12	4,73	4,4	4,28	4,38
Moqhaka	4,43	4,82	4,8	4,6	4,66
Nala	4,19	4,66	4,2	4,52	4,39
Naledi	4,13	4,64	4,8	3,2	4,19
Ngwathe	4,19	4,54	4,6	4,57	4,48
Nketoana	4,09	4,59	4,9	4,46	4,51
Phumelela	4,07	4,35	4,8	3,84	4,27
Setsoto	4,02	4,13	4,5	3,74	4,10
Tokologo	3,88	3,96	4,9	3,34	4,02
Tswelopele	4,02	4,49	4,6	4,49	4,40
KwaZulu-Natal					
Abaqulusi	3,69	3,87	4,3	3,11	3,74
Dannhauser	3,81	4,01	4,7	2,22	3,69
eDumbe	3,44	3,67	4,4	2,65	3,54
Emadlangeni	3,09	4,06	4,3	2,89	3,59
Emnambithi/Ladysmith	3,89	4,32	4,7	3,56	4,12
Endumeni	4,2	4,63	4,5	4,17	4,38
eThekwini	4,42	4,54	4,9	4,46	4,58
Ezingoleni	2,67	3,78	4,5	2,03	3,25
Greater Kokstad	4,09	4,49	4,8	4,28	4,42
Hibiscus Coast	3,56	3,93	4,7	2,9	3,77
Hlabisa	2,31	3,76	4,6	1,93	3,15
Imbabazane	2,64	3,61	3,8	1,94	3,00
Impendle	3,09	3,67	4,3	2,03	3,27
Indaka	3,26	3,84	4,6	2,4	3,53
Ingwe	2,5	3,53	4,5	2,09	3,16
Jozini	2,5	3,35	4,2	2,01	3,02
Kwa Sani	3,85	3,6	4,6	3,83	3,97
KwaDukuza	3,58	3,9	4,6	3,77	3,96
Mandeni	3,32	3,95	4,7	2,77	3,69
Maphumulo	2,13	3,5	4,8	1,8	3,06

Municipality name	Infrastructure Quality Index				
	Water	Sanitation	Electricity	Solid waste	Total
Mfolozi	3,32	3,67	4,2	2,37	3,39
Mkhambathini	3,12	3,58	4,3	2,21	3,30
Mpofana	4	4,37	4,3	3,71	4,10
Msinga	2,18	3,79	4,5	1,98	3,11
Mthonjaneni	3,69	3,83	4,5	2,86	3,72
Mtubatuba	2,78	3,59	4,9	2,23	3,38
Ndwedwe	2,43	3,66	4,8	1,98	3,22
Newcastle	4,35	4,35	4,4	3,98	4,27
Nkandla	3,06	3,8	4,8	2,05	3,43
Nongoma	1,81	3,22	3,1	1,87	2,50
Nqutu	3,13	3,37	4,7	2,04	3,31
Ntambanana	2,5	3,67	4,4	1,96	3,13
Okhahlamba	2,93	3,28	4,8	2,22	3,31
Richmond	3,45	4,05	4,3	2,38	3,55
The Big 5 False Bay	2,69	3,9	4,5	1,99	3,27
The Msunduzi	4,3	4,2	4,4	3,45	4,09
Ubuhlebezwe	2,58	3,66	4,0	2,21	3,11
Ulundi	3,18	3,85	4,5	2,41	3,49
Umdoni	3,61	3,53	4,6	2,95	3,67
Umhlabuyalingana	2,91	3,37	1,7	1,89	2,47
uMhlathuze	4,4	4,45	4,5	3,47	4,21
uMlalazi	3,15	3,65	4,3	2,42	3,38
uMngeni	4,34	4,47	4	4,09	4,23
uMshwathi	3,18	3,47	4,3	2,26	3,30
Umtshezi	3,74	4,08	3,8	3,32	3,74
UMuziwabantu	2,72	3,62	4,4	2,38	3,28
Umvoti	3,08	3,99	4,6	2,53	3,55
Umzimkhulu	2,57	3,64	3,3	2,23	2,94
Umzumbe	2,47	3,44	4,6	1,92	3,11
UPhongolo	3,42	3,51	4,0	2,69	3,41
Vulamehlo	2,59	3,55	4,3	1,96	3,10
North West					
City of Matlosana	4,42	4,86	4,8	4,76	4,71
Ditsobotla	3,76	4,07	4,5	3,12	3,86
Greater Taung	2,91	3,72	4,7	2,12	3,36
Kagisano/Molopo	2,98	3,67	4,7	1,96	3,33
Kgetlengrivier	3,99	4,27	4,4	2,83	3,87
Lekwa-Teemane	4,23	4,77	4,2	4,62	4,46
Madibeng	3,61	3,64	4,8	3,1	3,79
Mafikeng	3,53	3,83	4,8	3,75	3,98
Mamusa	3,18	4,43	4,8	4,15	4,14
Maquassi Hills	4,19	4,58	4,7	3,38	4,21
Moretele	2,89	3,44	4,8	4,17	3,83
Moses Kotane	3,36	3,56	4,2	4,33	3,86
Naledi	4,03	4,4	4,6	4,02	4,26
Ramotshere Moiloa	3,55	3,65	4,5	2,61	3,58

Municipality name	Infrastructure Quality Index				
	Water	Sanitation	Electricity	Solid waste	Total
Ratlou	2,57	3,18	4,6	1,99	3,09
Rustenburg	4,04	4,19	4,4	4,07	4,18
Tlokwe City Council	4,36	4,59	4,4	4,31	4,42
Tswaing	3,25	3,74	4,6	2,83	3,61
Ventersdorp	3,68	4,01	4,8	3,29	3,95
Gauteng					
City of Johannesburg	4,52	4,81	4,6	4,63	4,64
City of Tshwane	4,47	4,58	4,6	4,43	4,52
Ekurhuleni	4,42	4,69	4,7	4,56	4,59
Emfuleni	4,69	4,84	4,7	4,67	4,73
Lesedi	4,44	4,8	4,7	4,44	4,60
Merafong City	4,49	4,76	4,9	4,16	4,58
Midvaal	4,36	4,57	4,6	4,5	4,51
Mogale City	4,32	4,7	4,9	4,45	4,59
Randfontein	4,43	4,73	4,5	4,3	4,49
Westonaria	4,05	4,34	4,5	4,58	4,37
Mpumalanga					
Albert Luthuli	3,67	3,73	4,8	2,34	3,64
Bushbuckridge	3,34	3,23	4,9	2,08	3,39
Dipaleseng	3,97	4,33	4,3	4,17	4,19
Dr JS Moroka	3,68	3,58	4,9	2,19	3,59
Emakhazeni	4,22	4,49	4,8	3,74	4,31
Emalahleni	4,26	4,38	4,8	3,87	4,33
Govan Mbeki	4,4	4,88	4,8	4,39	4,62
Lekwa	4,28	4,71	4,9	3,85	4,44
Mbombela	3,58	3,67	4,4	2,73	3,60
Mkhondo	3,68	3,69	4,5	3,02	3,72
Msukaligwa	4,28	4,43	4,4	3,79	4,23
Nkomazi	3,37	3,36	4,5	2,51	3,44
Pixley Ka Seme	4,05	4,33	4,3	3,63	4,08
Steve Tshwete	4,32	4,59	4,9	4,37	4,55
Thaba Chweu	3,97	4,5	3,5	3,77	3,94
Thembisile	3,93	3,26	4,6	2,23	3,51
Umjindi	3,98	4,21	4,7	4,00	4,22
Victor Khanye	4,3	4,58	4,9	4,09	4,47
Limpopo					
Aganang	3,67	3,22	5,0	1,93	3,46
Ba-Phalaborwa	3,91	4,04	4,9	3,23	4,02
Bela-Bela	3,98	4,71	4,5	3,94	4,28
Blouberg	3,12	3,32	4,9	2,55	3,47
Elias Motsoaledi	3,21	3,27	3,7	2,31	3,12
Ephraim Mogale	3,25	3,44	4,7	2,46	3,46
Fetakgomo	2,98	3,47	4,5	2,39	3,34
Greater Giyani	3,17	3,62	4,8	2,22	3,45
Greater Letaba	3,11	3,37	4,3	2,2	3,25
Greater Tubatse	2,81	3,28	4,4	2,15	3,16

Municipality name	Infrastructure Quality Index				
	Water	Sanitation	Electricity	Solid waste	Total
Greater Tzaneen	3,08	3,57	4,9	2,36	3,48
Lepele-Nkumpi	3,51	3,54	4,6	2,62	3,57
Lephalale	3,72	4,17	4,8	3,32	4,00
Makhado	3,05	3,5	4,4	2,23	3,30
Makhuduthamaga	2,9	3,15	4,8	2,0	3,21
Maruleng	3,08	3,61	3,5	2,11	3,08
Modimolle	4,08	4,38	4,4	4,0	4,22
Mogalakwena	3,54	3,72	4,7	3,0	3,74
Molemole	3,43	3,57	4,8	2,14	3,49
Mookgopong	3,9	4,26	4,9	4,07	4,28
Musina	3,7	4,45	4,5	4,23	4,22
Mutale	2,85	3,84	4,9	2,03	3,41
Polokwane	3,97	4,04	4,9	3,33	4,06
Thabazimbi	3,94	4,14	4,8	3,17	4,01
Thulamela	3,20	3,38	4,7	2,37	3,41