

# Technical Report: Annual Submission on the Division of Revenue 2009/10



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# Financial and Fiscal Commission



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COMMISSION

For an Equitable Sharing of National Revenue

# Technical Report: Annual Submission on the Division of Revenue 2009/10

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Editors: Tania Ajam, Bongani Khumalo, Ramos Mabugu and Bethuel Setai

For an Equitable Sharing of National Revenue

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## Editorial

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**The Financial and Fiscal Commission** provides independent and impartial advice and recommendations on intergovernmental fiscal relations including the technical evaluation and design of provincial and local fiscal and economic policy. Established by the Constitution of South Africa in 1994, the Commission helps provide information to all organs of state so that they can make informed decisions about complex fiscal issues.

One of the main objectives of the Commission in this respect is to help inform the following year's budget by making recommendations on the division of revenue among the three spheres of government. The Commission does this by submitting annually an advisory document to parliament summarising the recommendations for the relevant following year that should be taken into account when the executive crafts the next budget. This submission for the Division of Revenue is made in terms of Section 214 (2) and Section 229 (5) of the Constitution, and Section 9 of the Intergovernmental Fiscal Relations Act of 1999. The Commission has submitted this document every year without fail since 2000.

In May 2008 the Commission launched to Parliament its latest Submission Document for the Division of Revenue 2009/10. This volume of technical research reports is published as a companion document to that Submission Document for the Division of Revenue 2009/10. It collects together the technical papers supporting the major findings and recommendations of the 2009/10 Annual Submission Document. This is the second comprehensive collection of technical reports supporting the Commission's Annual Submission following the first one published in 2006. In future, the Commission is pleased to announce that the publication of technical reports will be done simultaneously with the Annual Submission publication for all years.

This technical work is a culmination of rigorous consultations with the Commission's primary stakeholders from the provincial and national legislatures expressed through the finance committees, to government, primarily via the Budget Council and Budget Forum and local government via the South African Local Government Association (SALGA). Many of the technical reports are methodologically advanced. The researchers have, however, managed to achieve a good balance between quality and relevance of research and increased its impact through wide dissemination of the outputs. It is our hope that the simultaneous publication of the technical reports and the narrative annual submission document will help widen and stimulate debate on these important fiscal policy matters.

There are 14 technical reports in this volume that address issues arising from the Commission's submissions of 2005, 2006 and 2007, and raise new concerns regarding local government data collection and electricity supply and pricing. There are also broader matters addressed that relate to the current reform process in the local government sphere. Local government revenue and the restructuring of the electricity distribution industry are also dealt with in the technical reports collected.

In the first article on financing of 2010 FIFA World Cup, **Ramos Mabugu and Margaret Chitiga** use a hybrid input output and extended social accounting matrix multiplier methodology to quantify the upper bound impacts expected from a unit increase in exogenous transport commodity demand. Their results demonstrate a compelling link between transport and economic growth and productivity, and supports a strong case for continued investment in transport. However, they also find that this investment is not without opportunity costs that policy makers need to be aware of. The authors point out that their analysis shows the upper limits of the possible benefits from the intervention. The actual positive effect will be less but the hybrid methodology provides a first approximation of the distribution of gains, and an upper estimate of their aggregate value.

**Vuyo Mbunge** examines in her article the performance of programmes, economic classification and delivery within the provincial departments of transport, roads and public works. Her work shows that the expanded public works programme has been prioritised across all nine provinces, while public transport received less prominence during the period under review. She laments the fact that important delivery data relating to the targeted groups of these initiatives are not made publicly available.

**Sabelo Mtantato** investigates in his article issues in classification and reclassification of road infrastructure and the shifting of earmarked provincial roads into the national road network. The article reports on findings on the number of provincial roads that have been earmarked, those that have been incorporated, problems encountered in the process, the condition of these roads and the financial implications thereof.

The article authored by **Ramos Mabugu, Ismael Fofana and Margaret Chitiga** is methodologically ambitious and uses computable general equilibrium modelling techniques coupled with input-output models to investigate the impacts of reforms in electricity pricing and infrastructure expansion. Simulation results suggest that electricity infrastructure expansion has positive impacts on the economy while electricity pricing reforms have very small negative macroeconomic effects quite progressive income distributional effects.



**Nomonde Madubula's** article on financing of basic education focuses on two key areas, namely the funding nature of the re-ranking of schools and adequate funding for the no-fee schools policy within the context of the school funding norms. The article investigates the appropriateness of the provision of minimum allocations with regard to learner support material and explores the budget implications faced by the provinces in the re-ranking of schools as well as the adequate funding for the no-fee schools policy.

Focusing on housing, **Sabelo Mtantato** argues in his article that although the delivery of housing has come a long way since 1994, it remains a growing challenge. He documents the many institutional bottlenecks affecting the speed and efficiency of the delivery of houses that policymakers need to be aware of when they attempt to unlock the housing problem. The progress made in the accreditation of municipalities is also discussed and seen as a major impediment to effective housing delivery.

**Nomonde Madubula** argues in her article on learner transport that the lack of transportation for learners in rural areas in particular is a barrier to accessing schools. She dissects this issue and assesses the status quo of the provision of learner transport in South African schools. While she finds that broad policies in support of learner transport are in place, these have not been fully implemented because a specific national learner transport policy has been lacking. The legislative framework for the provision of transport exists in different formats in different departments. She argues the need to improve the integration and co-ordination of the legislative framework.

**Denver Kallis and Ramos Mabugu** explore international best practice in the measurement of output of the government sector. Based on results from a survey they carried out, they conclude that South Africa has not made significant progress in computing and subsequently using direct volume measures of government output and incorporating them into its respective national accounts as suggested by the 1993 System of National Accounts.

**Marlé van Niekerk and Servaas van der Berg** use probit and multinomial logit (logistic) regression models to estimate the impact of distance from public health facilities on the likelihood that people who had been ill or injured sought treatment (or in the case of the multinomial logits, that they did not seek treatment), while statistically holding constant other possible explanatory variables such as income or membership of a medical aid fund. The application of the methodology is to the South African General Household Survey of 2006. Results show no evidence that distance from public clinics acts as a major constraint on the treatment of ailments. Health outcomes are thus not influenced by the availability of public clinics. Far more important is the quality of health services provided, which depends on the quality, maintenance, staffing and equipping of clinics, and how well staff do their job.

**Sasha Poggenpoel's** article presents an analysis of provincial health budgets and the analysis shows that on average, provincial health budgets are projecting sound, yet slower growth over the 2006 Medium Term Expenditure Framework period, relative to performance over the 2003 Medium Term Expenditure Framework period. She expresses concern with the persistent overspending in the majority of provinces with respect to both the central and provincial hospital services programmes and argues that this may be a sign of inadequate funding. Concerns around the lack of disaggregated data regarding service delivery to vulnerable groups, such as women, children, people living with disabilities and the elderly, are raised.

In a follow up article, **Sasha Poggenpoel** presents a budget analysis of provincial housing departments for the period 2003 up to 2009. She finds that on average, growth within the core, provincial housing service delivery programmes is projected to grow faster in real terms over the 2006 medium term expenditure framework period compared with the growth experienced over the period from 2003 to 2006. She is concerned about the poor spending performance that is prevalent across the majority of housing programmes and argues that the accreditation of municipalities to manage the housing function could potentially reduce spending inefficiencies. She calls for the disaggregation of current indicators used to gauge delivery to ensure their usefulness.

**Krish Chetty's** chapter raises the issue that the uncoordinated approach to data collection from local governments has resulted in a large problem related to the quality of the data returned. Local government data are incomparable, unreliable; often inaccurate and a vast number of data requests submitted to municipalities are duplicated. He calls for intervention to correct the flaws in the current local government data collection process aimed at eliminating duplication. He argues the need to improve the number of personnel dedicated to the task of survey compilation within the municipalities.

**Fikile Maseko** tackles the complex issue of the restructuring of the electricity distribution industry into a number of Regional Electricity Distributors. She argues that the slow pace at which the restructuring process is unfolding is of great concern to stakeholders affected by the process, especially to municipalities that are currently distributing electricity. A further concern that she raises is in the restructuring process related to voluntary participation in the Regional Electricity Distributors by municipalities, arguing that this is one of the factors contributing to the delay of the restructuring process. She suggests that some mechanisms be put in place to ensure full participation by all the stakeholders involved. The impact on municipalities of the potential loss of a crucial revenue source from electricity distribution will need to be adequately addressed.

The volume concludes with an insightful article by **Fikile Maseko** that offers strategies to enhance local government revenue sources. This is timely in light of the observation that the local government sphere has undergone significant changes since its inception in respect of both the structures and systems of the fiscal framework and its component institutions. The paper carefully documents the fiscal changes that have taken place and puts forward a range of mechanisms which can be used to enhance and augment the resources available to local government.

The Financial and Fiscal Commission editorial team would like to thank all the government departments and Commissioners that contributed through their comments and the provision of information to the papers contained in this volume. We gratefully acknowledge the contribution of Professor David Solomon and Mr Abel Mawela who worked with researchers on the papers on regional electricity distributors and strategy to enhance local government revenue sources. Finally, we wish to express sincere gratitude to recently retired Commissioners without whose contribution this volume would not have been such a success. These are Mr Jaya Josie, Professor Anthony Melck and Mr Kamalesen Chetty. The views expressed in the technical reports contained in this volume are those of the authors and do not necessarily constitute those of the Financial and Fiscal Commission.

Tania Ajam  
Bongani Khumalo  
Ramos Mabugu  
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(September 2008)

## About the contributors

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**Bethuel Setai** is the present Chairman and Chief Executive of the Financial and Fiscal Commission. Prior to his appointment at the FFC, Dr Setai served as Managing Director of ECI Consulting. He was also the Chief Executive Officer of the South African Foundation for the Public Management and Development. As Director General of the Free State Province, Dr Setai was the administrative champion of the transformation project in the Free State government. Dr Setai has taught economics at various universities in the United States of America and in Africa. While a Professor of Economics at the National University of Lesotho, he served as external examiner at the Universities of Nairobi and the University of Jomo Kenyatta in Nairobi, as well as the University of Zimbabwe in Harare. Dr Setai's expertise and experience extends to consultancy work for the three tiers of government, including various international organisations such as FAO, UNIDO, WHO, and ILO and has completed assignments in Angola, South Africa, Lesotho, Botswana, Swaziland, Mozambique, Zimbabwe, Kenya and Malawi. Dr Setai authored a book entitled *The Making of Poverty in South Africa*, published by SAPES Books, Harare, in August 2000, and has published numerous other scholarly articles in international journals, as well as anthologies on trade, economic development and economic integration. He is in the process of compiling another volume where he partly reflects on his experiences as the first Director General of the Free State province.

**Bongani Khumalo** is the Deputy Chairperson of the Financial and Fiscal Commission. He was previously the Program Manager for Fiscal Policy in the Secretariat of the Commission. He has worked on a variety of areas within the South African intergovernmental fiscal relations system, including the design of revenue sharing formulae, the financing of education, health care and social assistance, and sub national borrowing and taxation issues and on the design of conditional grants. Upon completing a Master of Science (Economics) degree from the University of Zimbabwe, Bongani Khumalo lectured at the same University in the areas of International Trade and Development and Public Finance. He then moved to Rhodes University in Grahamstown in 1994 where he lectured Public Policy, International Trade Policy and Development Economics until 1999 when he joined the Financial and Fiscal Commission as a Researcher. He has published articles and contributed book chapters on Intergovernmental Fiscal Relations and on Public Finance.

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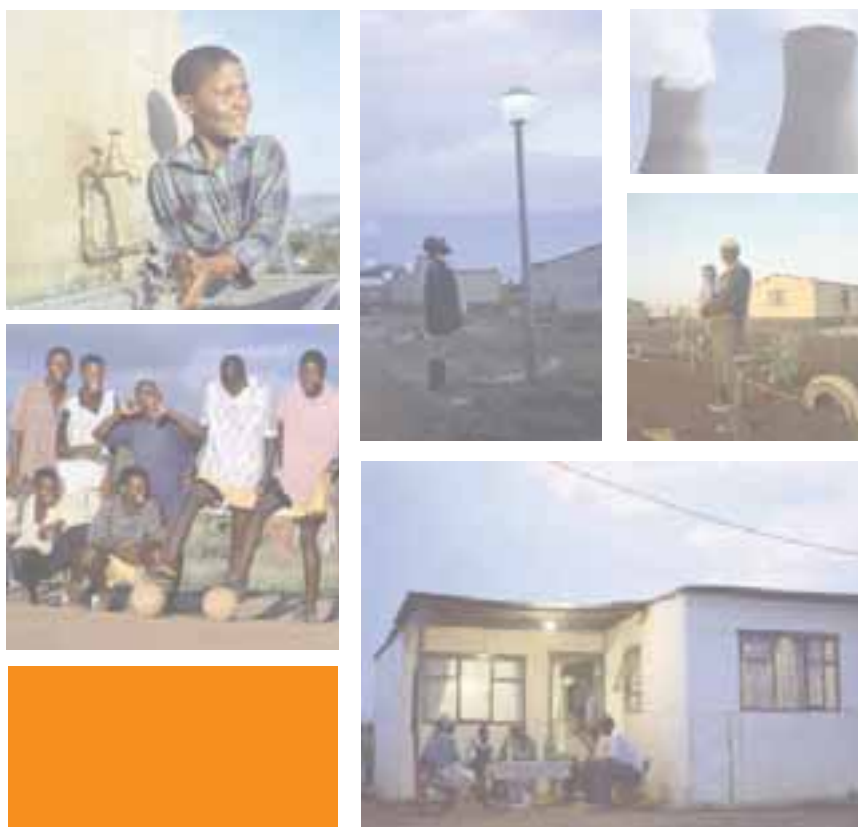
**Vuyo Mbunge** is currently a Budget Researcher in the Budget Analysis Unit at the Financial and Fiscal Commission. Since joining the Financial and Fiscal Commission in 2006 her area of specialisation have been the economic and infrastructure sectors. She is currently enrolled for a Master of Philosophy degree in Economic Policy at Stellenbosch University. Prior to joining the Financial and Fiscal Commission, she worked for the Eastern Cape Provincial Treasury at the Budget Office and was responsible for assessing budget pressures facing provincial departments and providing policy advice. She has also worked at the Western Cape Provincial Treasury in the Public Finance section where her role was promoting the enforcement of department specific fiscal discipline and monitoring of expenditure.

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**Sasha Poggenpoel** is a researcher within the Financial and Fiscal Commission's Budget Analysis Unit. She has a Masters of Philosophy Degree in Public Policy from the University of Cape Town. At present, her focus areas are public health-care and housing financing in South Africa. Previously Sasha was employed within IDASA's Budget Information Services where her focus was mainly on social sector departments of education, health and social development.





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# 2010 FIFA World Cup, Transport and the Division of Revenue

Ramos Mabugu & Margaret Chitiga

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## Abstract

This study investigates what impact a unit increase in exogenous transport commodity demand will have on production, supply, value added and household income. The study demonstrates a compelling link between transport and economic growth and productivity, and supports a strong case for continued investment in transport. However, it also finds that this investment is not without opportunity costs. In terms of equity, household income increases following a unit expansion in transport demand, but this benefits disproportionately more the middle income households. Finally, the underlying growth rate in such economies is premised on a given stock of capital stocks which is maintained by replacing capital stock through using economy-wide depreciation rates.

Keywords: 2010 FIFA World Cup; Transport; Social Accounting Matrix; Linkages; Opportunity costs; Equity; Policy Reform

## Acknowledgements

We are grateful to Mr Jaya Josie who helped conceptualise this work when he was still with the Financial and Fiscal Commission. We are grateful for comments received on the paper from Commissioners and research staff at the Financial and Fiscal Commission. In this respect, we are especially grateful to Conrad van Gaas, Hammed Amusa and Denver Kallis. The authors are responsible for any errors and opinions in this technical report.

## Abbreviations and Acronyms

CGE	Computable general equilibrium
FFC	Financial and Fiscal Commission
FIFA	Fédération Internationale de Football Association
GDP	Gross domestic product
HHD	Households
I-O	Input–output
MTBPS	Medium-Term Budget Policy Statement
PTIF	Public Transport Infrastructure Grant
SAM	Social Accounting Matrix

## 1. Introduction

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This paper follows up on work initiated by the Financial and Fiscal Commission (FFC) in 2007 to explore the macroeconomic impacts of government financing of the 2010 Fédération Internationale de Football Association (FIFA) World Cup. That submission covered a wide range of activities in stadium construction, transport development, health and disaster management, safety and security and telecommunications. Government subsequently responded to FFC recommendations by allocating a further R1.2 billion to the 2010 FIFA World Cup stadiums grant to provide for increased construction costs that were previously unforeseen and improvement in project management.

The focus for this year's submission is on the governmental transport infrastructure financing. The 2010 FIFA World Cup raises a challenging issue of how to balance the pressing short-term needs of the FIFA World Cup with the long-term transport requirements of sustainable development. Government has decided to use the event not only to support the success of the 2010 FIFA World Cup, but also to fast track implementation of transport infrastructure and create a lasting transport legacy. A Transport Action Plan that has as a strategic focus the acceleration of public transport by using the 2010 World Cup mechanism as leverage has been put in place. Its main idea is to create a legacy in public mobility through investments in public transport systems and infrastructure, services and non-motorised transport infrastructure investment.

Unlike the submission last year, which was inherently considered as 'fresh money' (in other words, without the World Cup there would have been no alternative investment for government money), this year's submission relaxes this assumption and instead assumes that there are opportunity costs that must be considered when evaluating government expenditure on infrastructure for the 2010 FIFA World Cup. To address squarely the issue of opportunity cost of public funds, a one unit expansion in transport infrastructure spend is run through a specially designed macroeconomic model to assess the contribution this makes to economic growth, poverty reduction and equity. This work allows us to evaluate government's overall transport infrastructure strategy in terms of equity and efficiency, including that not necessarily geared towards the 2010 FIFA World Cup within the transport sector.

## 2. World Cup Transport Financing

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The different competencies in transport among the three spheres of government are laid out in Schedules 4 and 5 of the Constitution of South Africa. Public transport, road traffic regulation and vehicle licensing are concurrent Schedule 4A functions of the national and provincial spheres, while provincial roads and traffic are exclusive Schedule 5A provincial functions. Schedules 4B and 5B functions allocated exclusively to municipalities are municipal airports, municipal public transport and municipal roads. The transport guarantees made to FIFA by government are some of the most stringent and include guarantees to ensure that hosting cities will have an efficient, reliable, high-quality, adequate and safe transportation system to cater for the needs of spectators, the media, teams, team officials, suppliers, referees and sponsors<sup>1</sup>. Government created the Public Transport Infrastructure Fund (PTIF) which is used as the conduit for funding approved projects submitted by host cities, other municipalities and provinces.

In the 2006 Medium Term Budget Policy Statement (MTBS), transport infrastructure received R3.8 billion<sup>2</sup>. The money is being used to fund projects predominantly for public transport, non-motorised transport infrastructure and systems investment. The projects cover the areas of planning, physical infrastructure and systems (Table 1).

**Table 1: Types of projects funded and amounts allocated**

Project	Funds Allocated (R Million)
Public Transport Infrastructure (PTI)	701
Intelligence Transport Systems (ITS)	221
Stadium Link (STAD)	186
Non-Motorised Transport (NMT)	63
Rail	566
Planning	49
Airport Link (AIR)	140
Total	1 926

Source: National Treasury (2006). Budget Review: 2005/2006). Government Printer. Pretoria, Republic of South Africa

- 1 For example, travel times to places of accommodation and match venues will remain within 30 minutes and a planned bus trip for members of the media between a media centre, place of accommodation and stadium will last more than ten minutes.
- 2 Note that government has allocated an additional R2 billion to the Public Transport Infrastructure and Systems Grant for the establishment and construction of public transport infrastructure and systems in large municipalities.



Table 2 shows the distribution of money and details of 2010 FIFA World Cup projects. These projects were selected from each host city's Letter of Intent submitted to the Department of Transport for funding.

**Table 2: Projects, amounts allocated and hosting city**

Allocation (RMillion)		Project
Johannesburg	615	North/South public transport corridor (Phase 2: Soweto to Parktown), SPTN network improvement, ITS, Stadium precinct improvements, Inner City Distribution system, NMT facilities for Tembisa, Vosloorus and intermodal facilities in metro
Cape Town	293	ITS system and public transport call centre, N2 Airport-City link, Klipfontein corridor, City-wide NMT system, ITS
Nelson Mandela	200	Khulani public transport corridor, Coastal cycle & pedestrian ways, Uitenhage & Stanford corridors, completion of Khulani corridor, disabled facilities and ITS
Ethekeini	35	ITS system, Warwick junction upgrade and Reunion station upgrade, Public Transport call centre
Mbombela	2	Planning support, Hazyview pedestrian bridge
Polokwane	14	Road upgrading for public transport and Non-Motorised Transport Infrastructure, NMT infrastructure upgrading (Phase 1)
Rustenberg	4	Planning for taxi facilities and Non-Motorised Transport
SARCC	566	Station upgrades, pedestrian facilities, communication and safety systems
Mangaung	82	Mangaung activity corridor and Elizabeth Street pedestrianisation, Bloemfontein public transport interchange, Selbourne Ave pedestrianisation
Tshwane	24	Planning and preparations for construction of interchange, Inner City Distribution System, Pedestrian link (Loftus stadium to rail station)
Total	1 835	

Source: National Treasury (2006). Budget Review: 2005/2006. Government Printer. Pretoria, Republic of South Africa.

Johannesburg receives the lion's share of the funding, followed by Cape Town and then Nelson Mandela. Mbombela and Rustenburg receive very small shares of the funded projects. The amounts allocated roughly correlate well with the number and sophistication of projects in each hosting city's project portfolio.

The provincial distribution of funds under the PTIF shows that the province receiving the most funding is KwaZulu-Natal, followed by Gauteng. Limpopo and Eastern Cape receive a very small allocation compared to these two provinces.

### 3. Methodology and Data

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A transport-focused Social Accounting Matrix (SAM) is used for the analysis (Financial and Fiscal Commission, 2006). A novel feature of the SAM is the elaborate disaggregation of the transport sector into finer subcategories of rail, road, air, water, pipeline and transport support services. Demand injection in one industry will affect that industry directly as well as other industries indirectly. The indirect channels operate through intermediate demand, factor demand, household demand and government demand changes. The multiplier effect generated by the demand injection is the cumulative sum of the endogenous effects, and is inversely related to the exogenous portion of economic activity. The total multiplier for domestic activity output following from a shock to a commodity is defined as the sum of the multipliers (down the column of the multiplier matrix) for all of the affected activity accounts. The sectoral commodity multiplier is, in turn, defined as the average total multiplier over a given set of commodity accounts which belong to the same sector.

For equity analysis, households are grouped into poorest, middle income and richest categories. Poorest households are defined as the bottom 40 percent of income-earning households, while the richest households are defined as the top 10 percent of income-earning households. The remainder make up the middle-income households. Higher transport expenditures impact on household welfare through direct and indirect effects. These are estimated using the Leontief Inverse matrix.

The SAM used has 48 activities and commodities, 14 representative households disaggregated by income, one enterprise institution, a government institution subdivided into various taxes and subsidies and expenditure, a rest of the world institution and a savings and investment entry divided into changes in stock and gross domestic fixed investment. Table 3 ranks the transport sectors' contribution to sectoral output.

The exercise points to the relatively small sizes of the disaggregated transport sectors. An exception is *Road Transport*, which is in the top 10 out of the 48 sectors.

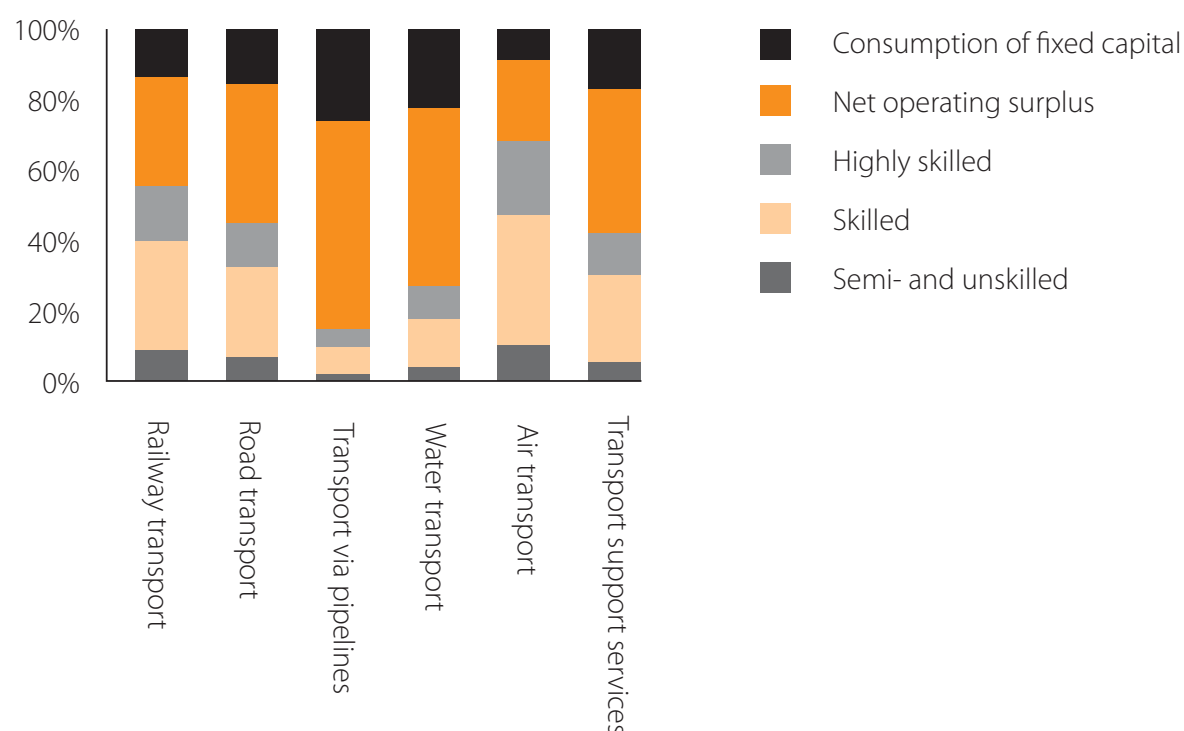
**Table 3: Ranking of disaggregated transport sectors by sectoral output**

Sector	Rank	Contribution
Road transport	9	3.35%
Transport support services	26	1.04%
Water transport	37	0.50%
Railway transport	38	0.49%
Air transport	40	0.41%
Transport via pipeline	48	0.03%

Source: Authors' calculations, based on the Financial and Fiscal Commission's Fiscal Social Accounting Matrix (2006).

An analysis carried out to get a sense of the magnitude of *forward linkages* associated with the transport sector suggests that most of the output from the transport sectors is used as margins or intermediate inputs by other sectors. The only exception is *Road Transport* which delivers 48 percent of its output to households as final consumption. Most of the forward linkages of transport are with primary sectors such as *Agriculture, Forestry and Fishing* and *Mining*, particularly *Other Mining* and *Coal Mining*. Sectors involved with mineral refining are also among those demanding higher than average intermediate goods and services from the transport sectors. The tertiary sectors are also strongly linked to the transport sectors, the main ones being *Wholesale & Retail Trade, Communication, Business Services* and *Government*. The main backward linkages from the transport sectors are demands for inputs from *Business Services, Coke & Refined Petroleum Products, Motor Vehicle Parts & Accessories* and *Other Transport Equipment*.

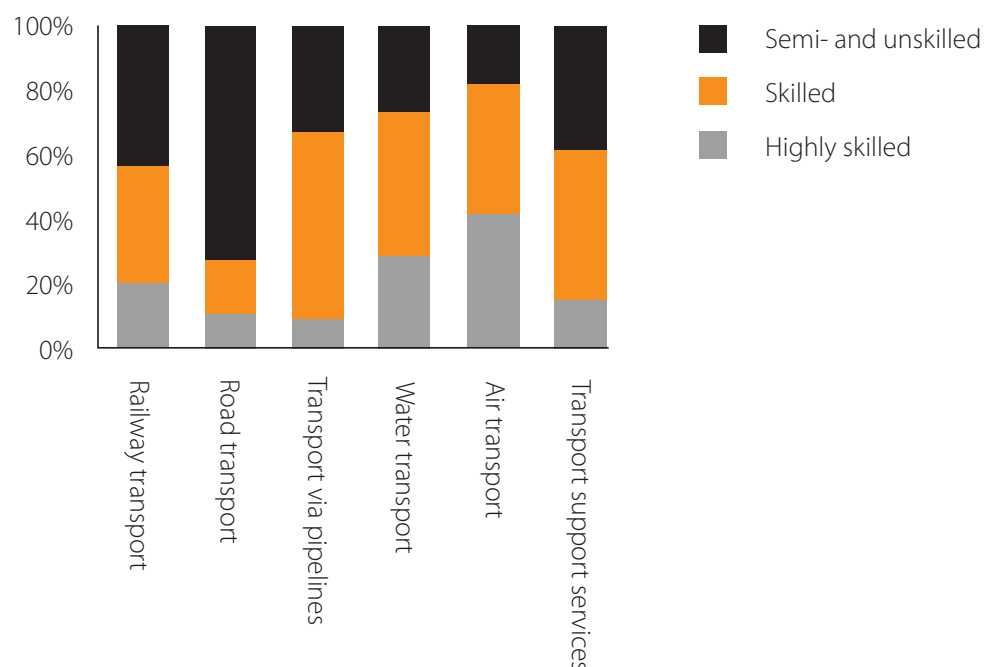
Figure 1 documents the factor remuneration patterns in the transport sector. It reveals that most of the factor remuneration goes to capital, then skilled labour followed by highly skilled labour, with the least amount of resources going to semi-skilled and unskilled workers. This further confirms the capital intensity of the sector.



**Figure 1: Factor remuneration in the transport sectors**

Source: Authors' calculations, based on the Financial and Fiscal Commission's Fiscal Social Accounting Matrix (2006).

Figure 2 gives information on numbers employed within the transport sectors. Semi-skilled and unskilled workers form the majority of people employed in most transport sectors. This is the opposite of the road transport sector, which mainly employs skilled and highly skilled workers.



**Figure 2: Numbers of people employed in transport sectors by skill type**

Source: Authors' calculations, based on the Financial and Fiscal Commission's Fiscal Social Accounting Matrix (2006).

Turning our attention to households, it is observed that the richest households, or 10 percent of the households, receive 43.5 percent of the available income, while the poorest 10 percent receive only 1.28 percent. This confirms that income inequality is very high in South Africa. The richest group also pays more than 50% of the direct taxes and transfers to the government. This group also contributes substantially to total expenditure and total household savings. The high saving propensity of this group suggests that leakages will be higher for this group when it comes to multiplier analysis.

Total transport expenditure by all households is only 6 percent of total household sectoral expenditure in the economy, a result which is in line with the finding that most of the transport good is used up in intermediate production. **Road Transport** is the main household expenditure component. There is also a fair amount of consumption of **Transport Support Services**, **Railway Transport** and **Air Transport** by households, with very little consumption of **Transport via Pipeline** and **Water Transport**. Expenditure on transport is highest among the middle-income groups, followed by the poor groups and then lowest among the richest groups. These household sectoral consumption shares imply that subsidisation of transport will likely benefit the middle-income groups compared to the other households.

## 4. Simulations and Results

1

This section reports on the results of an exogenous increase in transport demand combining the model constructed and the data just described. The disaggregated transport SAM multipliers are reported in Table 4. Turning first to the impact of a unit increase in exogenous demand on the Transport Sector as a whole, one finds that, on average, sectoral multipliers are below the national average when it comes to production, supply and household income. A one unit expansion in Transport will, on average, create additional production of 2.77 units and 3.29 units of additional supply compared to a national average multiplier of 3.16 additional production units and 3.7 additional units of domestic supply. Furthermore, a unit expansion in transport will create an additional 0.76 units in additional household income, compared to an economy-wide average of 0.78 units. Similarly, a unit expansion of Transport will increase factor remuneration by 1.12 units, identical to the national average. In terms of equity, it can be observed that the household income increases following a unit expansion in transport demand benefit the middle-income households disproportionately more. The richest households gain the least from a transport demand expansion.

Table 4: Transport commodity multipliers

	RAIL	ROAD	PIPE	WATER	AIR	SUPPORT
All activities	3.01	3.15	2.64	1.92	2.00	2.66
Plus export margins	0.02	0.02	0.01	0.01	0.01	0.02
Plus import margins	0.04	0.04	0.03	0.02	0.02	0.03
Plus domestic margins	0.19	0.22	0.16	0.10	0.11	0.17
Equals Total Activities	3.26	3.44	2.84	2.05	2.14	2.87
Total Commodities	3.75	3.92	3.17	2.70	2.86	3.35
Highly skilled labour	0.10	0.09	0.06	0.04	0.04	0.08
Plus skilled labour	0.30	0.24	0.18	0.12	0.14	0.24
Plus semi-skilled labour	0.26	0.23	0.17	0.13	0.14	0.21
Plus net operating surplus	0.52	0.51	0.73	0.34	0.28	0.52
Plus consumption of fixed capital	0.19	0.19	0.27	0.12	0.10	0.19
Equals Total Factors	1.36	1.25	1.42	0.75	0.69	1.25
Total Enterprises	0.65	0.64	0.93	0.43	0.34	0.66
HHD0	0.01	0.01	0.01	0.00	0.00	0.01
HHD1	0.01	0.01	0.01	0.00	0.00	0.01
HHD2	0.02	0.02	0.01	0.01	0.01	0.02
HHD3	0.02	0.02	0.02	0.01	0.01	0.02
HHD4	0.04	0.04	0.03	0.02	0.02	0.03
HHD5	0.05	0.05	0.04	0.03	0.03	0.05
HHD6	0.08	0.07	0.07	0.04	0.04	0.07
HHD7	0.12	0.11	0.10	0.06	0.06	0.10
HHD8	0.18	0.16	0.15	0.09	0.09	0.16
HHD91	0.14	0.12	0.12	0.07	0.07	0.12
HHD921	0.05	0.04	0.04	0.02	0.02	0.04
HHD922	0.05	0.05	0.05	0.03	0.03	0.05
HHD923	0.06	0.06	0.06	0.03	0.03	0.06
HHD924	0.13	0.12	0.17	0.08	0.07	0.13
Total Households	0.97	0.87	0.87	0.50	0.48	0.86
Poorest 40% households	0.061	0.053	0.047	0.028	0.028	0.052
Middle-income households	0.476	0.418	0.391	0.234	0.232	0.412
Richest 10% households	0.432	0.395	0.428	0.238	0.221	0.393

Source: Authors' calculations, based on the Financial and Fiscal Commission's Fiscal Social Accounting Matrix (2006).

Shifting the focus to simulations of the transport subsector categories, one observes that in terms of domestic production and supply, **Road Transport** is the subsector with the highest linkages of all the transport sectors. One unit expansion in road transport will increase domestic production by 3.44 units and supply by 3.92 units. The sector faces reasonably low domestic marketing costs, reflected in a multiplier of 0.22 (compared to an economy-wide average of 0.27). Moreover, **Road Transport** has a low initial import orientation and share, and this implies that the sector is associated with lower leakages. However, the capital costs associated with the multiplier process are relatively high (0.50) (see the multiplier associated with operating surplus). In addition, the value added to capital multiplier ratio ( $1.249/0.50 = 2.50$ ) is not very high compared to the economy-wide average of 2.51. As a result, a unit expansion in **Road Transport** demand raises remuneration to capital by more compared to other factors. The factor with the smallest associated multiplier is highly skilled labour. Notice also that the subsector has on average high linkages with value added and household incomes, implying that its expansion by one unit would contribute on average to more value added and household incomes. However, because capital returns rise more than other factor returns, the richest households which rely the most on this factor as a source of income stand to benefit the most. This explains why the richest-income households exhibit such high impact multipliers. However, the middle-income households experience the biggest income impacts from a unit increase in **Road Transport** demand. The reason can be traced back to the lower utilisation of this skill category in the initial period. In terms of household income, middle income households would benefit most as they consume disproportionately more of the **Road Transport** commodity. Despite consuming initially a smaller proportion of **Road Transport** commodities than the poorest households, the results above suggest that the richest households stand to benefit more from a unit expansion in **Road Transport** demand than the poorest households. The reason is largely attributable to the factor markets and hence factor remuneration outcomes. The poorest households depend significantly more on government transfers for their income while the richest households derive a large part of their income from capital. The capital remuneration impact is larger than the impact on labour remuneration. This means that the richest households will also benefit from a unit increase in **Road Transport** demand because of the pronounced effects on capital multipliers which benefits this group disproportionately more.

**Rail Transport** is the second-largest individual transport sector in terms of linkages to production and supply. One unit of rail expansion leads to an incremental 3.26 units in domestic production and 3.75 units total supply. Similar to **Road Transport**, **Rail Transport** also has a low import orientation and hence suffers from smaller leakages. The sector faces reasonably low domestic marketing costs but fairly high capital costs associated with the multiplier process (0.51). Yet the value added to capital multiplier following an expansion of rail transport is fairly high at 2.61, way above the economy-wide average. Similar to road transport, capital remuneration experiences the highest positive impact. Unskilled and skilled labour also experience quite large positive impacts.



Owing to initially higher consumption shares of *Rail Transport* and the positive impact on labour remuneration, middle-income households benefit the most from the demand injection. Again the poorest households stand to gain the least from the intervention, a result explained largely by the fact that they rely more on government transfers for their income than on factor remuneration.

For the *Transport Support Services*, a unit expansion in exogenous demand generates an extra 2.87 units of domestic production compared to 3.16 units on average. Similarly, one unit increase in *Transport Support Services* exogenous demand raises domestic supply by 3.35 units (recall that the economy-wide average is 3.7 units). Thus the production and supply multipliers for *Transport Support Services* are low compared to the economy-wide average. However, the subsector has very high linkages with value added. A one unit expansion in demand for *Transport Support Services* raises factor remuneration on average by 1.25 units and this is above the national average of 1.12 incremental units. Capital, skilled and unskilled labour experience the most significant positive stimulus to their remuneration. This factor remuneration effect is enough to lead to all households consequently experiencing a positive impact on their incomes. As shown in Table 11, a unit expansion in exogenous demand for *Transport Support Services* leads to an additional 0.86 units expansion in household income, a value that is again above the national average of 0.78 extra units. Middle-income households benefit disproportionately the most, while the poorest households experience the smallest increases in income. The reason why the poorest households reap comparatively less income benefits is, again, because of their relatively lower reliance on primary factor incomes. Thus *Transport Support Services* has on average low production and supply multipliers but quite high value added and household income multipliers.

*Transport via Pipeline* has fairly high linkages to domestic production and domestic supply. A unit expansion in exogenous demand for the sector leads to 2.84 units of additional production and 3.17 units of additional supply. However, this sector is also associated with capital multipliers way above average (0.72). Consequently, the reliance on capital in the multiplier process is somewhat higher than in the case of all other sectors in the economy. The result is that domestic production and supply per unit of capital used in the multiplier process is slightly lower than that of *Road Transport* and *Rail Transport*, but still relatively high and - in this respect - comparable to the remaining transport sectors. Most importantly, the subsector has the highest multiplier of all transport subsectors with respect to value added, especially capital income. A unit increase in demand for the subsector's output results in additional 1.42 units in factor remuneration, compared to a national average of 1.12 units additional to factor remuneration. The contribution to household income is also reasonably high, with a unit increase in the subsector's exogenous demand generating an additional 0.86 units in household income (compare this to a national average of 0.78 additional units of household income).

These high factor remuneration and household income multipliers are largely attributable to the fact that **Transport via Pipeline** has the least import share, suggesting that it also has the fewest leakages of all sectors in transport. Yet as a result of the poorest households' initial low factor remuneration linkages, the linkage to household income analysis shows that the subsector is closely associated with the middle income and top 10 percent of richest households. Thus, as with other sectors, the potential for shifting the balance between poor and rich households is not very promising. However, despite this, the overall contribution to household income is above average.

**Air Transport** has quite low production and supply multipliers. For example, a unit expansion in exogenous demand for the sector results in 2.14 units expansion in production and 2.86 units increase in supply. The low multipliers can again be traced back in part to higher import orientations (44 percent) and lower input-output linkages to the rest of the production sectors. However, the sector has some attractive characteristics such as an above average multiplier linkage to value added and household incomes. It also has a moderate capital multiplier. As such it has relatively high total multipliers per unit of capital used, even if they are lower than those of **Rail Transport** of 2.48. Similar to other transport sectors, middle-income households benefit the most in terms of incremental income effects, followed by the richest households. The poorest households benefit the least.

Finally, relatively low production and supply linkages are associated with **Water Transport**. Again these can be traced back to the higher import shares by the sector which also implies higher leakages from the system. The sector has the smallest linkages to domestic production of all transport sectors and is associated with a low domestic marketing margins multiplier. It also has the smallest domestic supply multipliers. Its linkages to value added and household incomes are also very low, even compared to the respective economy-wide average. Both the low production and supply multipliers and value added and household income multipliers on **Water Transport** imply that the ratio between the total multipliers and the capital multiplier is lowered considerably. Typical of other sectors, the poorest households' initial low factor remuneration linkages imply that these households reap the least household income benefits. The highest household income benefits accrue to the middle-income households, followed by the top 10 percent of richest households.

## 4. Conclusions

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This study investigates how much impact a unit increase in exogenous transport commodity demand will have on production, supply, value added and household income. Based on empirical research, the study demonstrates a compelling link between transport and economic growth and productivity, and supports a strong case for continued investment in transport. However, it also finds that this investment is not without opportunity costs. The aggregated transport SAM multipliers are, on average, below the national average when it comes to production, supply and household income. This suggests that an extra rand will have a higher return if invested elsewhere. Furthermore, a unit expansion in transport will create less additional household income compared to the economy-wide average. In terms of equity, it can be observed that the household income increases following a unit expansion in transport demand benefit disproportionately more the middle-income households.

These findings point to the following recommendations and observations:

1. There is a need to be cautious about what can be expected from 2010 FIFA World Cup transport infrastructure (and infrastructure spending in general) spending impacts on efficiency and equity. On their own, they are unlikely to make significant impacts on these important constraints. The performance targets put as conditions to grants financing transport should be adjusted to reflect this modestly.
2. There is also a need to be cautious when it comes to huge infrastructure expenditures for transport. This could be inefficient as it begins to crowd out other investments that have a higher private and social return. Our findings show that transport infrastructure does not promote such high economic development relative to other uses of public funds.
3. Spending on public transport infrastructure for 2010 should be linked to broader city development plans. A more resourced Public Transport Infrastructure and Systems Grant must continue after the 2010 FIFA World Cup. Projects that are funded under this arrangement should be selected based on a full appraisal of economic, environmental and social costs/benefits.

Funding mechanisms to cover maintenance costs of facilities constructed for the 2010 FIFA World Cup should be developed.

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## Assessment of the Provincial Budget and Expenditure Review 2003/04 – 2009/10

Transport, Roads and Public Works Departments

Vuyo Mbunge

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## Abstract

This paper examines the performance of programmes, economic classification and delivery within the provincial departments of Transport, Roads and Public Works. The analysis covers a period of seven fiscal years, commencing in 2003 and ending in 2010, and specifically studies the actual spending during 2003 to 2006 and indicative budgets from 2007 to 2010. The approach used derives two-year real annual growth rates for actual expenditure, while three-year real annual growth rates were derived for indicative budgets. In addition to the above, deflators were obtained from the South African Reserve Bank in order to compute real budget or expenditure. The analysis revealed that the Expanded Public Works programme has been prioritised across all nine provinces, while Public Transport received less prominence during the period under review. With regard to community-based programmes, these findings are welcomed in addressing

Keywords: Expanded Public Works Programme, Real Annual Growth Rate, Government Priorities, Unemployment.

## Acknowledgements

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## Abbreviations and Acronyms

AsgiSA	Accelerated and Shared Growth Initiative for South Africa
EPWP	Expanded Public Works Programme
FFC	Financial and Fiscal Commission
IGP	Infrastructure Grant for Provinces
JIPSA	Joint Initiative on Priority Skills and Acquisition
MTEF	Medium Term Expenditure Framework
MTBPS	Medium Term Budget Policy Statement
PDOTRPW	Provincial Department of Transport, Roads and Public Works
PBER	Provincial Budget and Expenditure Review
PED	Provincial Education Department

# 1. Introduction

Provincial departments for Transport, Roads and Public Works have been allocated R24 149 billion in the 2007/08 financial year. Of this allocation, the Road Infrastructure programme has the biggest share of R14 911 168 billion<sup>1</sup> or 61.75% of total allocations. When disaggregating the economic classification, it can be noted that transfers and subsidies constitute the biggest share, followed by payments for capital assets and lastly compensation of employees.

Infrastructure development is the cornerstone of socio-economic development. Provision of social infrastructure, for instance schools, clinics and water, as well as economic infrastructure such as roads, are essential for the economic growth of the country. In essence, infrastructure can also make an impact on poverty reduction and job creation through labour-intensive and community-based construction programmes such as the Expanded Public Works Program (EPWP). Within the national framework, the emphasis on infrastructure is firstly to provide basic services to the people, and secondly to create conditions for sustainable economic development.

This paper evaluates the performance<sup>2</sup> of the provincial departments of Transport, Roads and Public Works which are at the centre of the infrastructure development of the country. The main issues discussed in this paper are policy performance, spending and budgeting performance, delivery performance and impact. Policy performance is analysed by comparing relative (real, annual) growth rates of budgets against the prescripts of national policy prioritisation. Where provincial departments, programmes or categories thereof grow at a faster rate than the provincial government average, that department, programme or category is assumed to have been, de facto, prioritised, whereas lower than average budget growth (or perhaps decline) implies the opposite and is the necessary trade-off against scarce resources. National policy emphasis for the forthcoming medium-term cycle of strategic, operational and budgetary planning can be identified from the State of the Nation and Budget speeches, presented to Parliament in February 2008, by President Mbeki and Minister Manuel respectively. Measuring performance against these stated priorities is important in helping to ensure that budgets do indeed affect strategic plans and are credible.

The rest of this paper discusses priorities and funding mechanisms of the sector wherein equitable share and conditional grants are unpacked per share. Performance per programme is also assessed in detail followed by economic classification. The section on delivery and impact on infrastructure gives non-financial data performance. Lastly, conclusions and recommendations are given.

<sup>1</sup> Source: Provincial Budget and Expenditure Review, 2007 (National Treasury).  
<sup>2</sup> Financial (Financial Years 2003 – 2010) and non-financial information was extracted from the 2007 Provincial Budget and Expenditure Review (PBER), as collated by National Treasury.

## 2. Priorities and Funding of Departments

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### 2.1 Priorities

South Africa is in the process of gearing up to host the 2010 FIFA World Cup. This has placed considerable emphasis on infrastructure development in the country, such as building and revamping stadia, and upgrading roads and the public transport system. Also of importance to the success of the 2010 World Cup is the safety and security component, in which government plans to increase the number of police and improve the criminal justice system. It is envisaged that more funds will be channelled into these areas.

The EPWP is one of government's short-to-medium-term programmes aimed at using labour-intensive construction methods to provide employment opportunities to unemployed locals. Other aspects of the EPWP<sup>3</sup> include: (a) enhancing the ability of workers to earn an income; (b) utilising public sector budgets to reduce and alleviate unemployment; (c) each public body must formulate plans for utilising its budget to draw significant numbers of the unemployed into productive work and provide them with training. Important prerequisites of the EPWP are that (a) all projects should have exit plans, as required by the National Department of Public Works, and (b) all recipients or beneficiaries would, through the employment, acquire the necessary capacity to continue working elsewhere once the project has been completed.

To this end, the government set itself a target of 1 million<sup>4</sup> job opportunities to the unemployed and marginalised (i.e. at least 40% women, 30% youth and 2% disabled persons) by 2009. When looking at the current problems facing the job market with an unemployment rate of nearly 27% (SA Reserve Bank, January 2008) and 350 000 annual take up in working span, it is apparent that the envisaged target would be highly insignificant in redressing the mounting levels of unemployment. Hence it may not be viewed as a solution, but it would alleviate the problem.

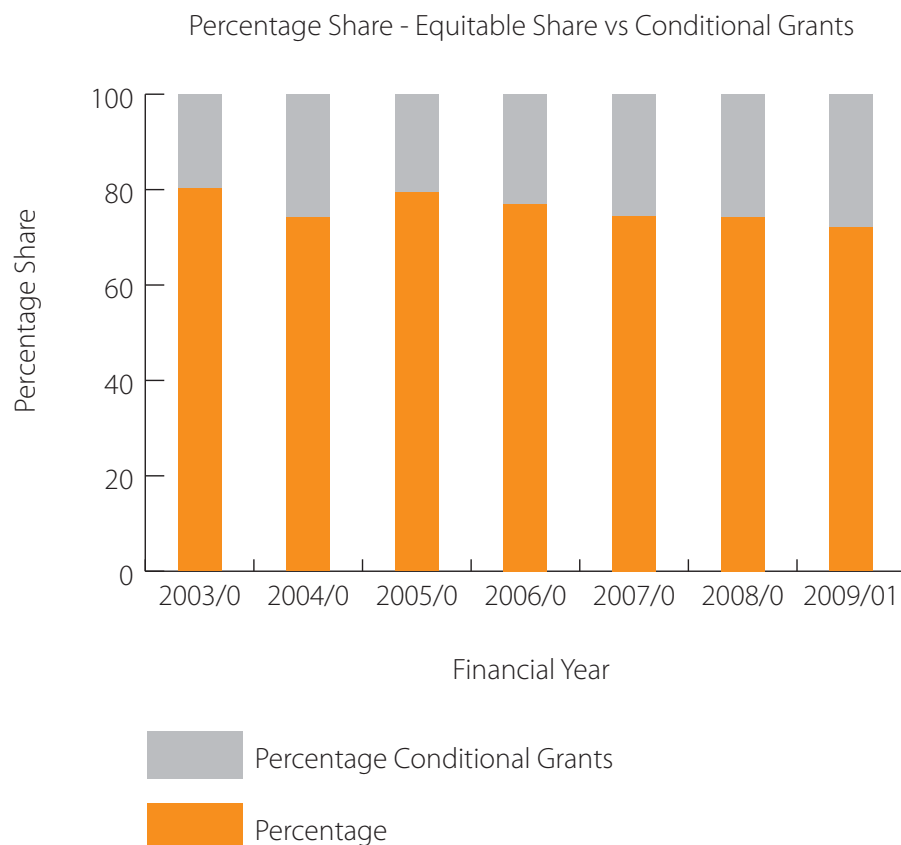
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*National Department of Public Works 2004*  
*National Department of Public Works Budget Speech, Ms. Thoko Didiza, 28 March 2007*

## 2.2 Funding of Provincial Transport, Roads and Public Works

Figure 1 shows that provincial transport and public works departments are mainly financed by means of equitable share. The percentage share of equitable share ranges from 72.06% to 80.28% during the financial years 2003/04 till 2009/10. The percentage share for conditional grants escalated from 19.72% to 27.94% by 2009/10. The Division of Revenue Act spells out that the Infrastructure Grant for Provinces (IGP) should be allocated in the following manner: 40% Education, 40% Roads, 13% Health and 7% Agriculture. Currently there is still no consistency in allocating funds across the nine provinces, and this is attributable to the fact that provincial treasuries use their own discretion when allocating funds to beneficiary departments in question. The Gautrain Rapid Rail Link conditional grant is managed by Gauteng Province, and totals R4.5 billion, of which R1.5 billion is funded through the provincial equitable share and the rest (i.e. R3 billion) in the form of a conditional grant.



**Figure 1: Equitable share vs. conditional grants, 2003/04 – 2009/10**

Source: Derived from PBER 2003/04 to 2009/10, Annexure A

Although the figure above does not show own revenue, this funding constitutes an insignificant portion of the share of total revenue across all nine provinces. The departmental receipts constitute fees from motor vehicle licences as well as sales of goods and services other than capital assets made up of rental of office buildings and other smaller items such as parking, sales of departmental publications and commission on insurance.

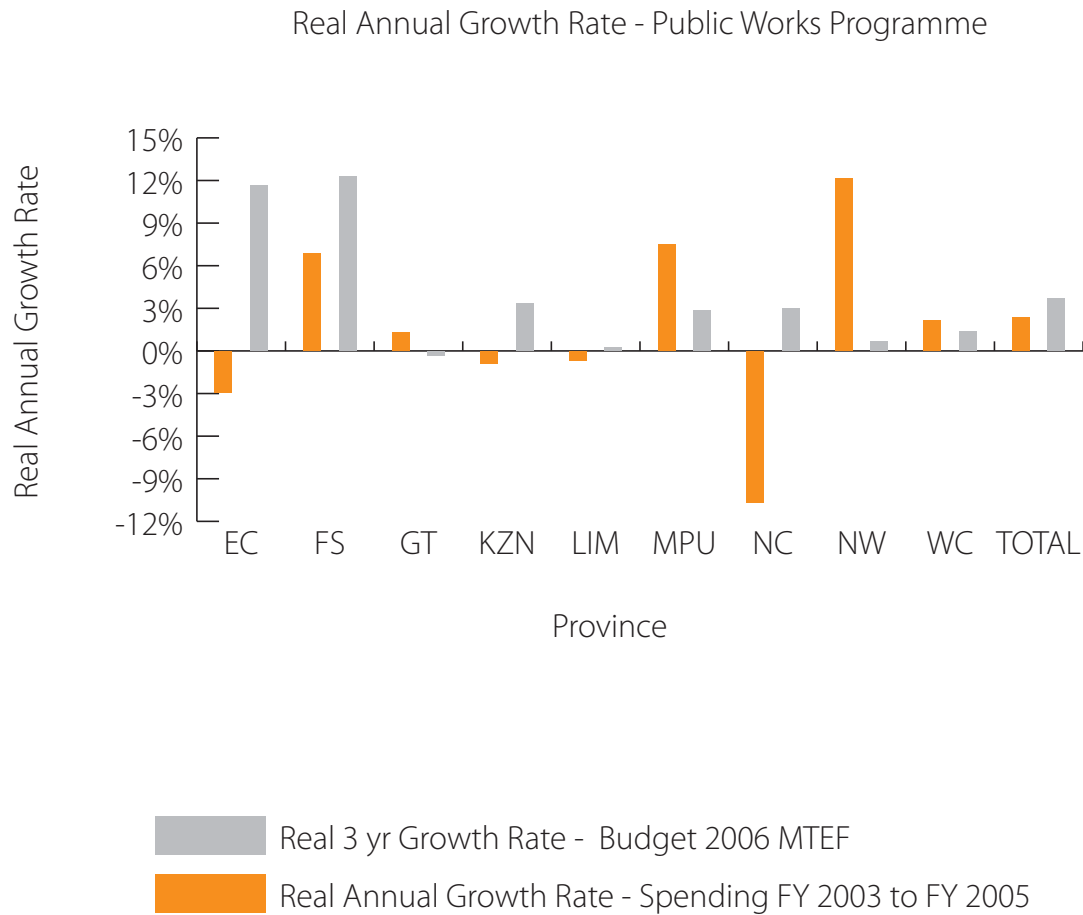
### 3. Performance by Programme

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#### 3.1 Public Works Programme

Public Works<sup>5</sup> provides accommodation for all provincial departments, manages the provincial property portfolio for the optimum benefit of all those concerned and renders professional and technical services to departments in respect of buildings and related infrastructure. The programme is also tasked with constructing new facilities and to upgrade, rehabilitate and maintain existing facilities as identified in consultation with the relevant user departments.

Public Works is the third fastest growing programme in provincial transport, roads and public works departments during the medium-term expenditure framework (MTEF) period. Figure 2 illustrates real annual growth rate on expenditure between 2003/04 and 2005/06 and real growth rates of the budget allocations towards public works programme during the 2007 MTEF period. Broadly speaking, public works programmes do not receive prominence in aggregate as evidenced by a 2.38% real growth rate in spending and 3.68% in budgets towards the MTEF. It can be noted that Free State Province gets the biggest share of the budget, followed by the Eastern Cape at 11.62%, with the rest of the provinces exhibiting low growth rates.



**Figure 2: Real growth rate for public works programme, 2003/04 – 2009/10**

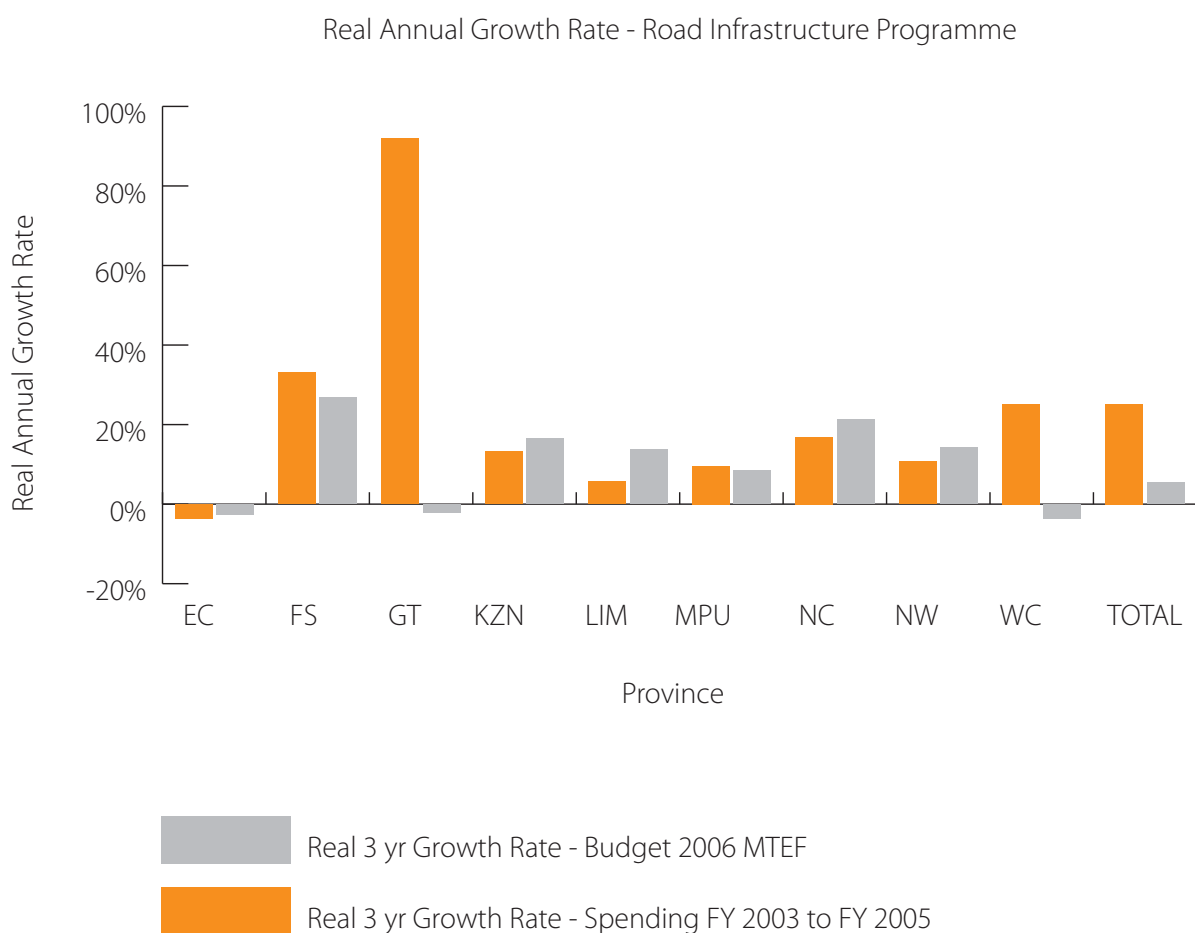
Source: Derived from PBER 2003/04 to 2009/10, Annexure A

With expenditure, the general trend is towards declining growth rates, especially in Northern Cape Province. During the provincial visits which took place in July 2007, it was ascertained that there was an apprehensive relationship between public works departments and client departments such as health and education or transport and roads. There were many instances where client departments indicated that Public Works could not prioritise between economic infrastructure and social infrastructure.



### 3.2 Road Infrastructure Programme

In light of the upcoming 2010 FIFA World Cup and national initiatives such as the Accelerated and Shared Growth Initiative for South Africa (ASGISA), much emphasis has been placed on infrastructure development. Figure 3 gives a graphic presentation of real annual growth rate of the road infrastructure budget for the MTEF period and real expenditure growth rates between 2003/04 and 2005/06.



**Figure 3: Real annual growth rate – Road Infrastructure Programme, 2003/04 – 2009/10**

Source: Derived from PBER 2003/04 to 2009/10

In aggregate, road infrastructure budget allocations are envisaged to grow at 5.44% in real terms between 2006/07 and 2009/10 (see Figure 3 above). Road Infrastructure is the second fastest growing programme in provincial transport, roads and public works departments during the MTEF period and has thus been prioritised. Focusing on provinces, notable growth rates have been recorded in Free State, Kwazulu-Natal, Limpopo, Northern Cape and North West provinces. This is an indication that investment in road infrastructure is being prioritised in these provinces. Eastern Cape, Gauteng and Western Cape provinces have experienced falling real growth rates.

On the expenditure side, a healthy real growth rate of 25.17% was realised between the 2003/04 and 2005/06 financial years. It is known that provinces are characterised by huge backlogs with regard to infrastructure programmes, hence the high spending growth rates for Free State, Gauteng (possibly due to the initial phase of the Gautrain project) and Northern Cape (which may be mainly attributed to the re-demarcation process during 2006/07 financial year). This situation would have exerted pressure on both current and capital expenditure of the department, leading to demands for shifts between programmes or sub-programmes.

Table 1 indicates that, in aggregate, real annual growth rates for expenditure and indicative budget allocations in maintenance are 8.57% and 8.96% respectively.

Free State and Western Cape provinces contributed to this healthy growth in spending, with real expenditure rising from R190 million to R347 million for Free State and from R338 million to R658 million for the Western Cape.

Table 1: Real budget and expenditure (R'000) - performance in maintenance, 2003/04 – 2009/10

Province	2003/04	2004/05	2006/06	2006/07	3-Year Annual Growth Rate	2006/07	2007/08	2008/09	2009/10	3-year Real Annual Growth Rate
	Outcome			Preliminary Outcome		Adjusted appropriation	Medium-term estimates			
EC	441,880	448,834	502,335	627,311	12.39%	617,805	627,708	666,618	660,756	2.27%
FS	190,343	219,147	200,713	347,008	22.16%	249,576	265,414	326,592	329,633	9.72%
GP	160,466	296,208	379,808	169,838	1.91%	298,573	394,544	551,317	547,443	22.39%
KZN	804,275	607,197	686,530	824,337	0.82%	807,986	944,492	1,106,436	1,272,049	16.33%
LIM	336,767	333,236	336,434	327,840	-0.89%	319,363	364,037	354,619	333,263	1.43%
MPU	219,115	211,131	205,979	245,711	3.89%	243,519	422,607	418,690	417,458	19.68%
NC	64,752	95,192	83,388	82,676	8.49%	83,819	105,374	130,658	140,471	18.78%
NW	217,546	231,643	265,137	267,309	7.11%	314,778	196,065	372,346	456,896	13.22%
WC	338,967	448,384	601,264	658,182	24.76%	664,883	555,600	506,651	498,784	-9.14%
Total	2,774,110	2,890,972	3,261,589	3,550,215	8.57%	3,600,302	3,875,841	4,433,927	4,656,753	8.96%

Source: Derived from PBER 2003/04 to 2009/10, Annexure A

Future allocations indicate that maintenance would be prioritised at a real growth of 8.96% over the 2007 period of the MTEF. This is evident in Gauteng, KwaZulu-Natal, Mpumalanga, Northern Cape and North West provinces. In Western Cape a declining growth rate is anticipated. The manner in which certain provinces spend and make projections for future maintenance budgets requires attention. For example, in the Western Cape, expenditure stood at R658 million in 2006/07 and yet real budget allocations are estimated to decline to R499 million in 2009/10. In this instance there is a budget cut. On a different note, Gauteng budgets have been greatly expanded from R170 million in 2006/07 to R547 million in 2009/10, raising concerns about absorption capacity.

The situation highlighted above would seem to indicate under-budgeting (through the deferral of maintenance expenditure to later periods) or possibly inadequate planning. Maintenance costs are also escalating as a result of in fuel price increases, labour and plant cost and the price of bitumen.

It has been observed that there has been a trend towards volatile budgets and there is a need for provinces to produce adequate non-financial data on the conditions of roads (e.g. physical condition, age, physical integrity, functionality, utilisation, etc) in order to inform maintenance budgets as part of a broader asset management strategy.

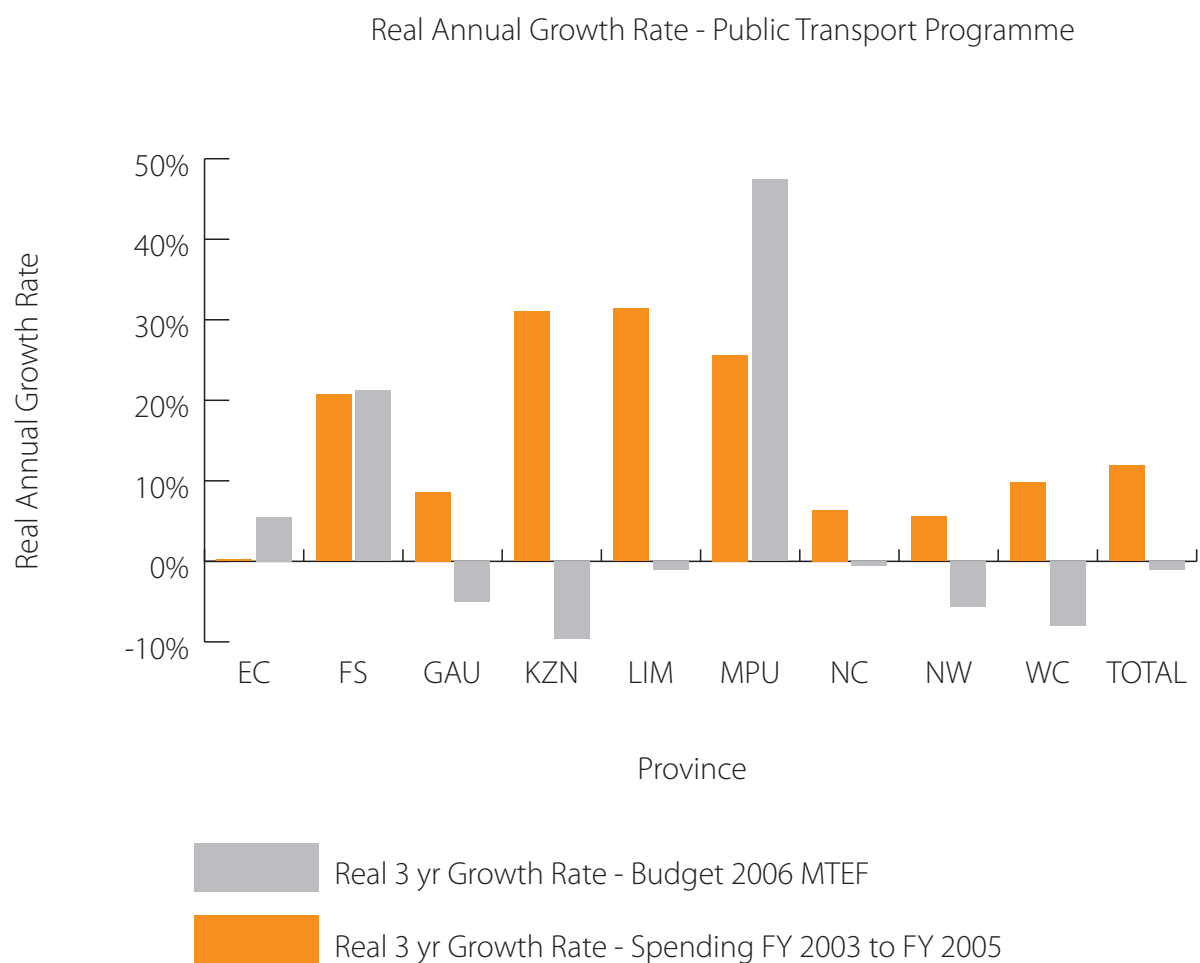
### 3.3 Public Transport Programme

The Public Transport Programme<sup>6</sup> is responsible for planning, regulating and facilitating the provision of public transport services and infrastructure, through own provincial resources and through co-operation with national and local authorities as well as the private sector in order to enhance the mobility of all. The EPWP (Expanded Public Works Programme) is one of the methods used to deliver these services.

Figure 4 shows that the public transport function is not prioritised in provinces during the outer years, hence a declining overall growth rate of -1.04%. Notable is the Western Cape province which realised the highest decline in financial resources at 9.07%. The negative trend may be attributed to the fact that this function has been shifted to the local sphere of government. A public infrastructure grant comprised of bus and rail transport has been introduced to facilitate planning and to construct and improve new and existing public transport infrastructure and systems.

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6 *Budget Statement for Transport, Roads and Public Works, Western Cape, 2007*



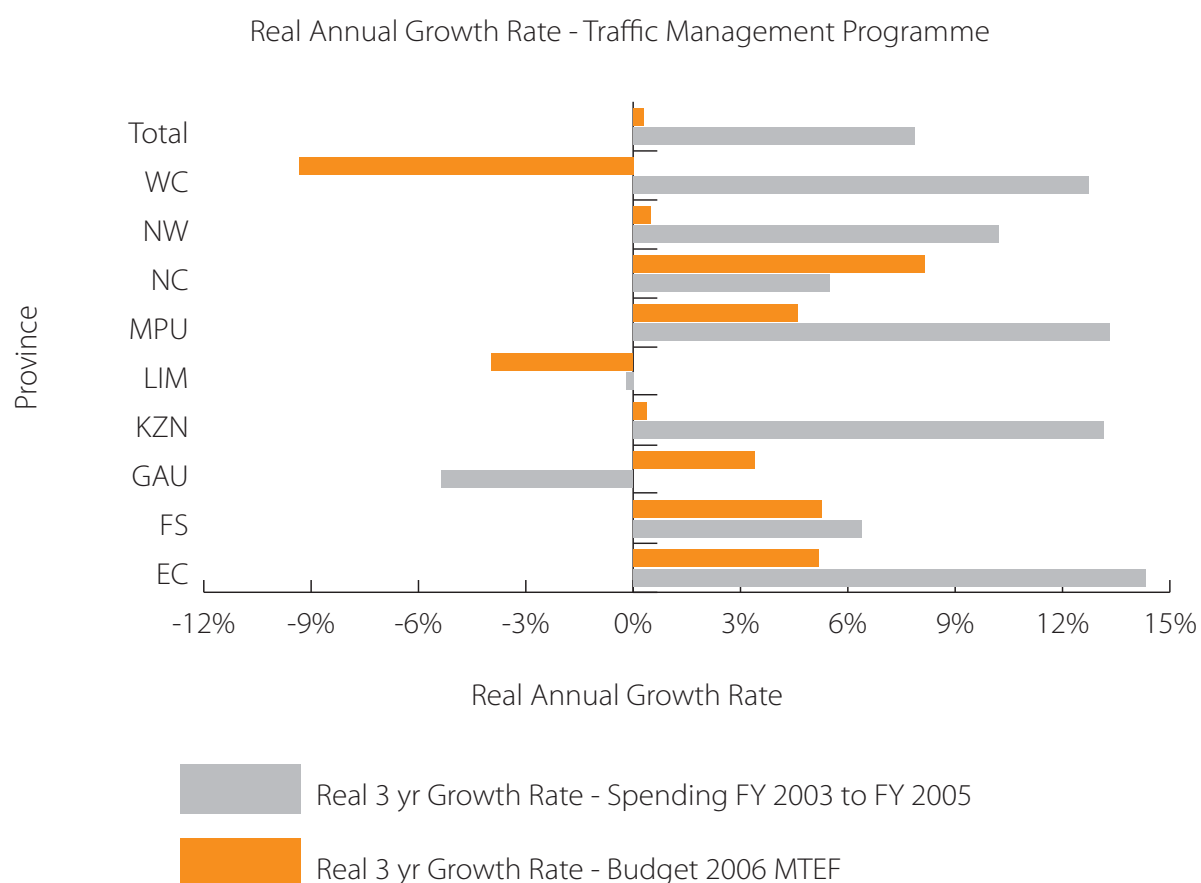
**Figure 4: Real growth rate for the Public Transport Programme, 2003/04 – 2009/10**

Source: Derived from PBER 2003/04 to 2009/10, Annexure A

Real annual growth rate on expenditure for public transport indicates that the programme was prioritised between 2003/04 and 2005/06, recording an 11.89% growth rate which is way above the average provincial growth rate. Free State, Kwazulu-Natal and Limpopo provinces experienced the highest growth rates and this is probably attributable to the successful implementation of the taxi recapitalisation programme in these provinces. The 2007 PBER states that almost 99% of taxi operators applied for their permits to be converted to operating licences.

### 3.4 Traffic Management Programme

The purpose of the Traffic Management Programme is to create (a) an appropriately authorised and safe transport environment (b); a professional and efficient service to all clients; and (c) to maximise revenue generation. Traffic management is one of the lowest growing programmes in the provincial Transport, Roads and Public Works departments over the 2007 MTEF period. The budget growth rate in real terms suggests that traffic management in the provinces would not be prioritised at 0.28%. (see Figure 5). In many provinces the traffic management function is performed through the local sphere of government. Provinces also execute the function on a full-time basis, but lately emphasis has been on temporary job-creation methods such as the EPWP. This may explain the contraction in financial resources over the years ahead.



**Figure 5: Real growth rate for the Traffic Management Programme, 2003/04 – 2009/10**

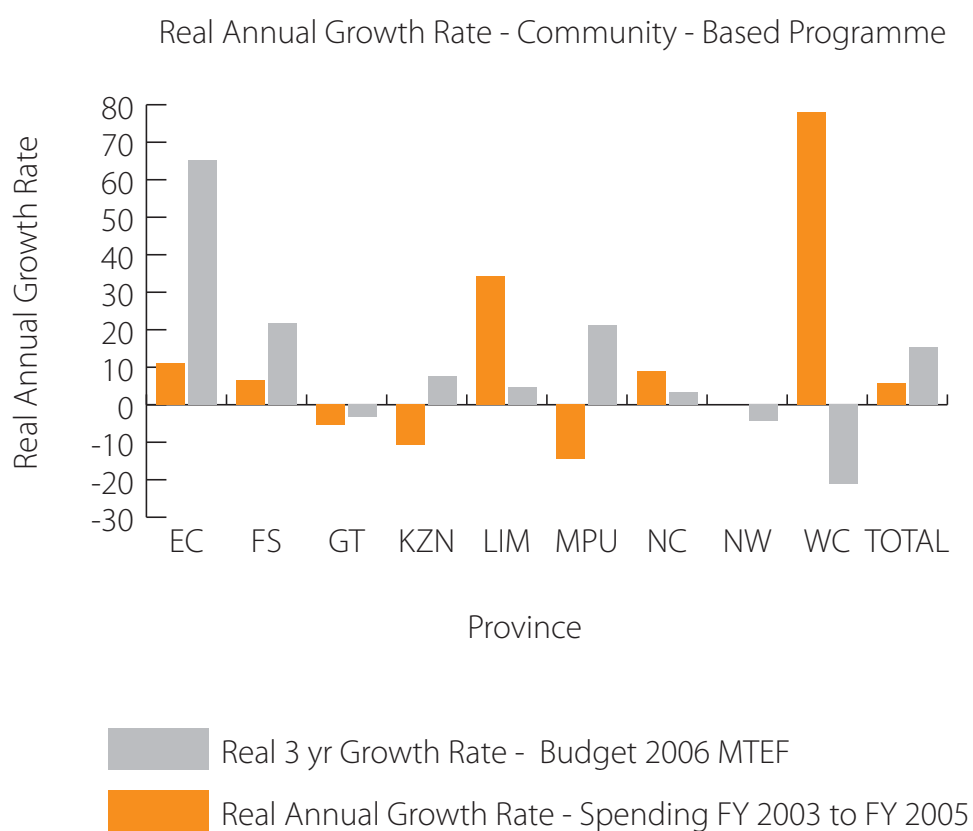
source: Derived from PBER 2003/04 to 2009/10

Expenditure has been satisfactory over the most recent years. With the exception of Limpopo and Gauteng, the remainder of the provinces prioritised expenditure towards traffic management. The high levels of spending can be attributed to the emphasis that has been placed on safety issues in all transport modes, specifically functions that support Arrive Alive campaigns which are driven across all nine provinces.

### 3.5 Community-based Programmes

Community-based programmes facilitate the implementation of multi-sectoral projects across provinces whereby particularly the youth, women and people with disabilities are provided with relevant training and productive employment opportunities such that skills and enterprises are developed and sustained, infrastructure is developed and maintained, and local economies enhanced.

These are the fastest-growing programmes in the provincial Transport, Roads and Public Works departments. Figure 6 indicates that in real terms, overall spending in the EPWP has been prioritised in provincial departments, growing at 5.68%. Notable are the Western Cape, Limpopo and Eastern Cape provinces, which recorded higher than average provincial growth rates of 77.91%, 34.24% and 11.14% respectively. Again budgets allocated for the EPWP programme have been prioritised and have grown at 15.21% in aggregate, notably in Free State, Mpumalanga and Eastern Cape provinces at healthy growth rates of 21.65%, 21.32% and 65.23% respectively between 2007/08 and 2009/10. Analysis suggests that labour-intensive employment for construction in the rich provinces such as Gauteng and the Western Cape realised diminishing growth rates of 3.31% and 21.12% respectively in the outer years.



**Figure 6: Real growth rate for community-based programmes, 2003/04 – 2009/10**

Source: Derived from PBER 2003/04 to 2009/10

There are various programmes which benefit unemployed youth and aspiring entrepreneurs, namely road gravelling, resealing tarred roads and traffic management among others. The 2007 PBER shows that there were 48 597 jobs created through expanded public works in the 2006 fiscal year.



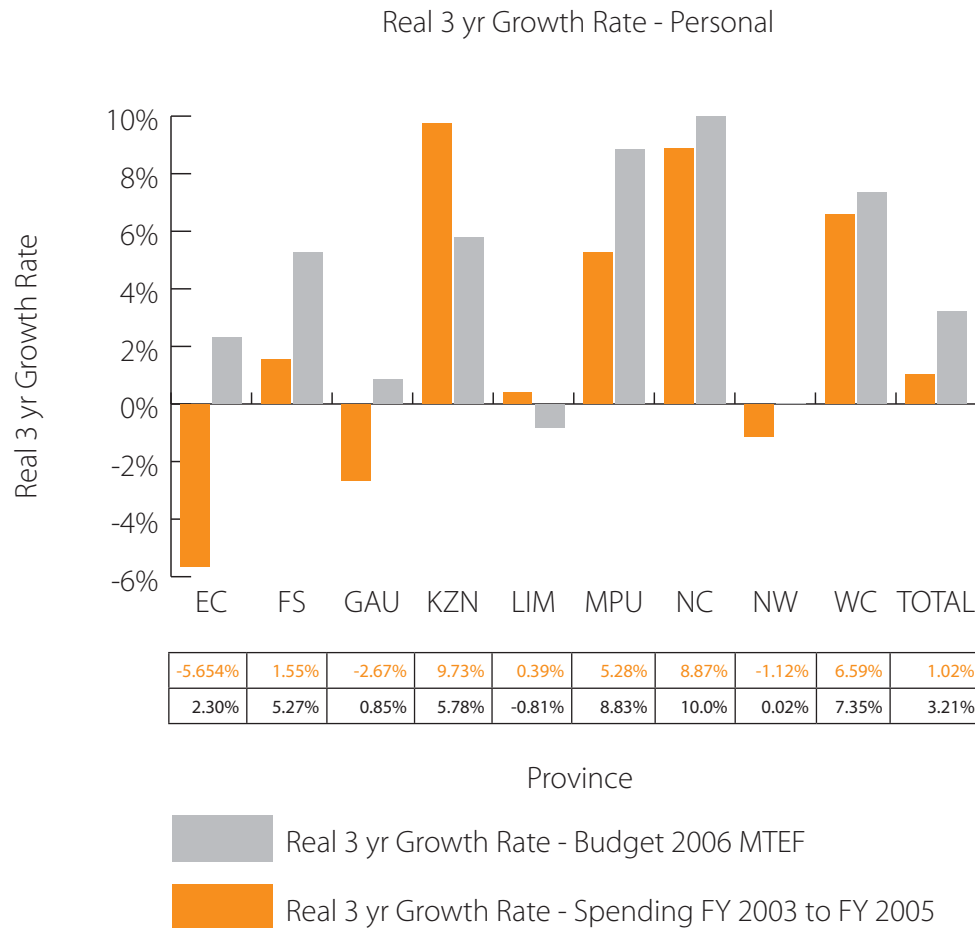
## 4. Performance by Economic Classification

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### 4.1 Personnel Issues

A critical shortage of skills in the transport, engineering and built environment fields throughout the country has been identified as a significant 'binding constraint' on the infrastructure-lead growth which is necessary to reduce unemployment in the country (see Budget Statements for the Eastern Cape and Gauteng Provincial Transport, Roads and Public Works departments, 2007). With regard to the departments, this scarcity impacts negatively on roads infrastructure, public transport and public works. In this regard the education sector plays a pivotal role in ensuring that further education training is strengthened to ensure that the Joint Initiative on Priority Skills and Acquisition (JIPSA) programme is manifested.

Figure 7 shows that in real terms the overall growth in spending on compensation of employees was low at 1.02% during the most recent past. Of the nine provinces, Kwazulu-Natal, Mpumalanga, Northern Cape and Western Cape have exhibited satisfactory spending growth rates. With regard to personnel resources, in aggregate budget real growth rates were also low at 3.21% over the 2007 MTEF period.



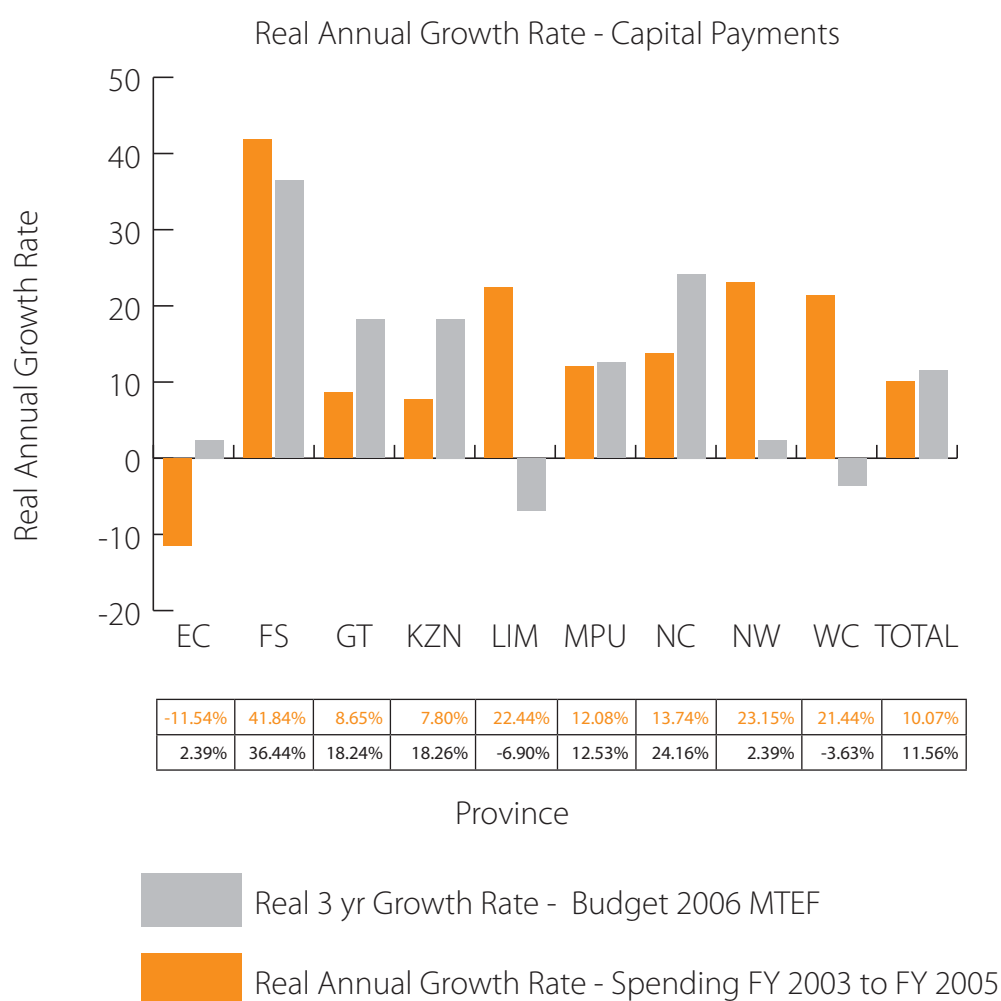
**Figure 7: Real growth rate for compensation of employees, 2003/04 – 2009/10**

Source: Derived from PBER 2003/04 to 2009/10, Annexure A

Due to the aforementioned challenges that are embedded in the infrastructure sector, it has become apparent that overall compensation of employees is not prioritised, either in expenditure or budgeting terms. The supply of professionals with engineering or quantity surveying skills is low and this may result in conservative budgeting for personnel. Provincial departments may then opt to use consultants, who clearly do not form part of departmental organograms.

## 4.2 Capital Payments

Provincial transport, roads and public works departments are responsible for building roads, schools and clinics, as well as for upgrading, rehabilitating and maintaining roads. The bulk of capital payments is made up of buildings and other fixed structures in terms of the economic classification format. Generally, indicative budgets and actual expenditure of these departments in the recent past have been equally prioritised at the respective real annual growth rates of 11.56% and 10.07% (see Figure 8). When disaggregating to provinces, only the Eastern Cape failed to prioritise spending in capital-related projects. It is known that the Eastern Cape generally grapples with spending on infrastructure-related projects due to sticky procurement procedures and capacity challenges in provincial departments.



**Figure 8: Real growth rate for capital payments, 2003/04 – 2009/10**

source: Derived from PBER 2003/04 to 2009/10

Budgets in capital payments for Free State, Gauteng, Kwazulu-Natal and Mpumalanga provinces exhibit higher than average growth rates, while Western Cape and Limpopo decline at 3.63% and 6.90% respectively. According to the Budget Speech delivered by the Free State MEC for Finance in 2007, the department made concerted efforts to ensure that infrastructure delivery would become a catalyst in propelling infrastructure delivery. For instance, a turn-around strategy adopted by the Department of Roads hastened the implementation of infrastructure projects, which resulted in the successful completion of projects scheduled for completion in the following financial year. This explains higher than average real growth in budgets and expenditure.

## 5. Delivery and Impact on the Infrastructure Sector

In terms of the Millennium Development Goals, unemployment and poverty must be halved, and sustainable economic growth should be maintained by 2014. Provincial Growth and Development Strategies should serve as a guide to attaining the Millennium Development Goals set out for the sector. Concerted efforts to address the high levels of unemployment and poverty are already in place through EPWP, ASGISA and other government initiatives. Infrastructure development remains one of the key interventions in accelerating economic growth.

### 5.1 Provincial Roads Construction Outputs

Table 2 shows provincial roads construction output between 2005/06 and 2006/07 in terms of the number of kilometres of surfaced roads upgraded and rehabilitated. The last column illustrates year-on-year construction sub-programme real growth rates between 2005/06 and 2006/07.

**Table 2: Provincial roads construction outputs and budget real growth rate, 2005/06 – 2006/07**

Province	2005/06			2006/07			Year-on-year construction budget real growth
	Number of kilometres surfaced roads upgraded	Number of kilometres surfaced roads rehabilitated	Total number of kilometres	Number of kilometres surfaced roads upgraded	Number of kilometres surfaced roads rehabilitated	Total number of kilometres	
EC	389	68	457	249	102	351	-51.82%
FS	39	0	39	37	50	87	225.40%
GT	11	0	11	1	55	56	562.00%
KZN	93	77	170	77	0	77	2.81%
LIM	115	491	606	0	0	0	no value
MPU		0	0	49	50	99	-25.10%
NC	55	44	99	123	17	140	52.39%
NW	175	126	301	176	112	288	24.39%
WC	13	33	46	6	20	26	55.51%
Total	890	839	1 729	718	406	1 124	141.81%

Source: National Department of Transport, Budgets derived from PBER 2003/04 to 2009/10, Annexure A

In total 1 729 kilometres of surfaced roads were upgraded and rehabilitated during 2005/06, and 1 124 kilometres in 2006/07. There has been a huge decline in the total number of roads rehabilitated - from 839 in 2005/06 to 406 in 2006/07 - due to the fact that it is more expensive to rehabilitate damaged road infrastructure. The situation is worsened by the fact that Kwazulu-Natal and Limpopo provinces provided no record of roads rehabilitated in 2006/07.

In conclusion, the general impression is that the total number of kilometres upgraded and rehabilitated varies immensely across all nine provinces. Delivery output produced by the provinces does not match the construction budgets allocated in the programme. In this regard there should be a record of backlogs and other ongoing provincial projects in order to come to fruitful conclusions on the socio-economic issues embedded in the infrastructure sector. In the same way, provinces should produce accurate non-financial data on the condition of roads in order to inform maintenance budgets, as it is known that over-utilisation of roads requires regular maintenance (Road Infrastructure Strategic Framework for South Africa, 2006).

## 5.2 Challenges of Delivery Outputs in the Infrastructure Sector

The infrastructure sector publishes limited data on delivery outputs. In order to gauge progress towards the Millennium Development Goals relating to this sector, it is vital to make cross-provincial analyses of a number of indicators. For example, there is no record of temporary jobs created through the EPWP in traffic management. There is also no record of roads to be maintained or the mounting backlogs in roads in bad repair.

## 6. Conclusion and Recommendations

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The community-based programme has become one of the fastest-growing components in the infrastructure sector. It is thus vital to assess performance per target group, especially now that more financial resources are being channelled to the programme. Data on employment of vulnerable groups are required by the Expanded Public Works Programme. Currently, only aggregated amounts are reported in the Provincial Budget and Expenditure Review. When the programme was created, the government set itself a target of 1 million job opportunities for the unemployed and marginalised (i.e. at least 40% women, 30% youth and 2% disabled persons) by 2009. An issue that cannot be emphasised strongly enough is the impact on the level of unemployment.

The analysis further revealed that provincial road construction outputs do not match up with allocated budgets. This situation is exacerbated by the fact that there is a high level of variances across the nine provinces. In this regard there should be a record of backlogs and other ongoing provincial projects in order to make meaningful conclusions on issues stemming from the infrastructure sector. To alleviate the situation, provinces should produce accurate non-financial data on the condition of roads in order to inform maintenance budgets.

The FFC recommends that job creation for target groups such as women, youth and people with disabilities as prescribed by the EPWP should be included in the measurable outputs of the next Division of Revenue Bill. In order to facilitate more rigorous measurement and commentary on the Expanded Public Works programme, the number of employment opportunities created by beneficiary target groups (such as women, youth and people with disabilities) should be made publicly available. Provincial departments should comply with the EPWP prescripts.

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## Classification and Reclassification of Road Infrastructure in South Africa and Shifting of Earmarked Provincial Roads into the National Road Network

Sabelo Mtantato

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## Abstract

South Africa's road network consists of about 754 600 kilometres and is the longest road network of any country in Africa. The Financial and Fiscal Commission in its 2005 submission to the Division of Revenue recommended among other things that criteria and processes for classification of all roads and their assignment to each sphere of government be developed. This recommendation was accepted by the government. This report examines the extent to which this recommendation has been implemented. Some of the provincial roads were identified and earmarked for incorporation into the national road network which is under the administration of the South African National Road Agency Ltd. The South African National Road Agency Ltd has been given the task of ensuring that the provincial roads earmarked to be incorporated into the national road network have indeed been incorporated. The process, however, also requires the provinces, through their respective premiers, to forward applications for earmarked provincial roads to be incorporated into the national road network. This paper therefore also examines the number of provincial roads that have been earmarked, those that have been incorporated, problems encountered in the process, the condition of these roads and the financial implications thereof.

Keywords: Road classification, shifting of provincial roads to national road network

## Acknowledgements

The author gratefully acknowledges the support and inputs from the Commissioners of the Financial and Fiscal Commission, the programme managers and other colleagues. Stakeholders engaged include the South African National Road Agency Ltd and the Department of Transport.

## Abbreviations and Acronyms

DoT	Department of Transport
FFC	Financial and Fiscal Commission
MIG	Municipal Infrastructure Grant
MTEF	Medium Term Expenditure Framework
RIFSA	Road Infrastructure Strategic Framework for South Africa
SANRAL	South African National Roads Agency Limited

## 1. Introduction

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The Financial and Fiscal Commission (FFC) noted in its 2005 Annual Submission<sup>1</sup> that the delivery and funding of roads and transport infrastructure occurred in a very fragmented manner, and that this has expressed itself in the lack of clarity among the spheres of government's responsibilities for roads and transport infrastructure. The FFC therefore recommended that the government should develop criteria and processes for classifying all roads and assigning each class of road to the respective sphere of government or category of local government. This recommendation was accepted by government.

This paper is a follow-up on this recommendation and examines the extent to which the road classification/reclassification process has taken place and the extent to which these classified roads have been assigned to the relevant spheres of government. It also examines the extent to which identified and earmarked provincial roads have been transferred to the South African National Roads Agency Ltd (SANRAL) and the problems faced by SANRAL in the process, as well as the funding implications of such transfers. The recommendation to transfer some of the provincial roads to the national road network follows a process in which some provincial roads were identified and earmarked to be incorporated into the national road network which is under the administration of SANRAL.

## 2. Methodology and Data

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To determine whether the objectives stated above have been achieved, this research analysed the information received through interactions with the Department of Transport on the process of classification and reclassification of roads. The FFC made the recommendation on the classification of roads in 2005, and some indications on the speed at which the process is unfolding have been obtained by gathering information through interactions with the Department of Transport on the progress made. This paper analyses data on the total number of earmarked roads (in kilometres) per province and compares it with the number of roads in kilometres per province that have been incorporated. The difference between the targeted provincial roads in kilometres and the provincial roads in kilometres that have been incorporated gives some indication of the progress and the possible problems encountered in the process.

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<sup>1</sup> Financial and Fiscal Commission 2005 Annual Submission.

Information relating to the classification of roads and their assignment to the relevant sphere of government was obtained from various interactions with the DoT and from the Road Infrastructure Strategic Framework for South Africa (RIFSA). Data on earmarked provincial roads that have been incorporated and are planned to be incorporated into the national road network were obtained from SANRAL.

## 3. Road Classification

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### 3.1 Road Classification and its Purpose

Road classification or road classification hierarchy refers to the system of network design and management which categorises different types of road in a framework and orders them in relation to each other (Intergovernmental Committee on Surveying and Mapping (ICSM), 2006)<sup>2</sup>. A classification system therefore groups roads and streets into different groups according to the type of service each group is intended to provide, and this leads to improvements in transport planning, road infrastructure design, maintenance and traffic and road operations<sup>3</sup>. According to the Road Infrastructure Strategic Framework for South Africa (RIFSA)<sup>4</sup> (2006), approximately 221 000 km of

roads (about 29% of the entire road network in South Africa) are unclassified and most of them are community access roads which have been neglected over long periods of time. The absence of road classification results in less efficient routes for traffic associated with increases in the time and cost of transportation of both people and goods. Furthermore, without classification or hierarchy, all streets would act as traffic conduits and trading places. According to the ICSM, the road classification process is undertaken for the following related reasons:

- Planning and administration
- Conflict avoidance
- Improved recognition of road types



Below we discuss these reasons.

### **A. Planning and administration**

Classification of roads provides a common base from which the policy can be established. It can also assist in determining the purposes of various roads within the entire road network. The different purposes of the different classes within the road network simplifies the planning process for road authorities regarding the appropriate level of interaction between the roadway and land use, design standards, operational matters and funding requirements. A clearly defined road classification hierarchy assists in the allocation of appropriate funding. In practice, the higher level of road classification, such as national road network, commonly receives a higher level of funding than the lower levels. Furthermore, the way in which the national road network is designed differs from the design of the lower levels because of the number and size of vehicles expected to use the road, loads carried by vehicles, etc. This is also the case in South Africa. It follows that if there is any ambiguity in the classification of the road network, it is likely that some roads will be allocated insufficient resources while others may have more than they are supposed to have.

### **B. Conflict avoidance**

Road classification, since it defines the purpose of the road, helps to reduce the possibilities of volatile and chaotic scenarios in which a road could be used in a way that is not compatible with its intended use. In essence, road classification prevents conflict between different road users as it guides the relationship between different types of routes.

### **C. Improved recognition of road types**

Road users have certain expectations when using a particular road, and their expectations influence their behaviour and performance in traffic. Therefore, the road should be defined and classified in a way that is consistent with or can reinforce road user expectations and improve the effectiveness with which the road network carries traffic.

## 3.2 Types of Road Classifications or Hierarchies

There are different types of road classifications based on the intended purpose of the road within the road network. Some of the hierarchies identified by ICSM (2006) are:

- Functional road hierarchy
- Administrative road hierarchy
- Matching administrative and functional hierarchies
- Structural road hierarchy.

### **a) Functional road hierarchy**

This is a commonly used form of road classification. It classifies roads on a functional basis, that is, how the roads are expected to function with respect to local through-traffic. A functional road classification refers to the process of classifying or grouping streets and highways according to the characteristics of traffic service that they are intended to provide<sup>5</sup>. According to ICSM (2006), streets and highways perform two types of services, namely the provision of traffic mobility (collectors, arterials and freeways) and land access (local streets). In the functional road classification, a road is assigned a rank or a class based on the proportion of the service it provides. This is the road classification hierarchy that the DoT has proposed for South Africa in the RIFSA document. The proposed functional road classification for South Africa consists of six classes which will be discussed later in this paper.

### **b) Administrative road hierarchy**

An administration road hierarchy assigns roads on the basis of who is responsible for its planning, maintenance and operation. In South Africa roads are assigned to national, provincial or municipal responsibility.

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<sup>5</sup> See Functional classification of facilities. Available online at: <http://www.contextsensitivesolutions.org/content/reading/functional/> (Accessed 4 February 2008)

### c) Matching administrative and functional hierarchies

This classification combines some features of both administrative and functional hierarchies. It is important to note that the functional road hierarchy and administrative road hierarchy should not be seen as entirely separate as there is potential for these hierarchies to match better. However, a complete match is unlikely.

### d) Structural road hierarchy

Structural road hierarchy is a less commonly used type of road classification. It ranks the roads according to the structural standards applied to a given segment of the road. The structural determinants that define a road may vary depending on the intended purpose of classification. Variables that are often considered include the road width, surface type, gradient, wet weather conditions, load bearing and height restrictions (ICSM, 2006).

## 3.3 Fundamental Requirements of Road Classification

Some important factors that should be considered on the classification of roads identified by the ICSM (2006) can be summarised as follows:

- **Simple number of classes** – It is important to keep categories or classes to a relatively small manageable number. In the proposed road classification for South Africa, there are six classes. However, authorities involved in the road classification exercise should be careful not to exclude relevant classes.
- **Classification should be unambiguous** – The definition of each class must be distinct, clear and concise. Therefore broad definitions that leave too much place for interpretation must be avoided.
- **Ubiquitous across the entire network** – The classification system must contain common variables that can be used to distinguish roads across the whole spectrum or entire road network in the country.
- **Using common language and terminology** – The language that is used for the road definitions should be in line with the road users' understanding.
- **Consistency across the entire network** – Road classification must be scale-less in the sense that the same classification system applies irrespective of the scale at which the classification is being interrogated.

It has been mentioned that South Africa has proposed a functional road classification with six classes. Table 1 shows these classes.

Table 1: Classification of roads in South Africa

Class	Strategic Function	Nature of roads
1 Primary distributor	High-mobility roads with limited access for rapid movement of large volumes of people, raw materials, manufactured goods and agricultural produce of national importance.	Public road: <ul style="list-style-type: none"> <li>Between, through and within regions of national importance; within provincial capitals and key cities; major city nodes, which have significant economic or social traffic.</li> <li>Between South Africa and adjoining countries which have significant national economic or social transport interaction.</li> <li>Providing access to major freight and passenger terminals including major ports and airports.</li> </ul>
2 Regional distributor	Relatively high-mobility roads with lower levels of access for the movement of large volumes of people, raw materials, manufactured goods and agricultural produce of regional importance in rural and urban areas.	Public roads: <ul style="list-style-type: none"> <li>Between, through and within centres of provincial importance, provincial capitals, large towns and municipal administration centres.</li> <li>Between class 1 roads and key centres which have a significant economic, social, tourism or recreational role.</li> <li>Between South Africa and adjoining countries which carry limited economic or social road traffic.</li> <li>Providing access to economic and transport hubs of regional importance.</li> </ul>
3 District distributor	Moderate mobility with controlled higher levels of access for the movement of people, raw materials, manufactured goods and agricultural produce in rural and urban areas of regional importance.	Public road: <ul style="list-style-type: none"> <li>Through and within centres and towns and linking with rural residential areas and villages, industrial/farming areas.</li> <li>Between residential areas and local industrial/commercial areas, large residential areas.</li> <li>Providing linkages between Class 2 or Class 1 routes.</li> <li>Providing linkages between centres, towns, rural residential, industrial/farming areas, and Class 2 or Class 1 routes.</li> </ul>
4 District collector	High levels of access and low levels of mobility for lower traffic volumes of people, raw materials, manufactured goods and agricultural produce in rural and urban areas of regional importance.	Public roads: <ul style="list-style-type: none"> <li>Between, through and within villages, farming areas and scattered rural settlements, which provide access to social services and markets.</li> <li>Within commercial, residential and industrial areas.</li> <li>Linking Class 3 roads.</li> <li>With limited direct access to property in the urban context.</li> </ul>
5 Access roads	High access and very low-mobility routes for the movement of people and goods within urban and rural areas.	Public roads: <ul style="list-style-type: none"> <li>Within residential areas.</li> <li>Between Class 3 and 4 roads and residential areas.</li> <li>Providing direct access to industries and businesses.</li> <li>Providing access to specific destinations such as heritage sites, national parks, mines, forests, etc.</li> <li>Accommodating safe mobility of pedestrians and other non-motorised transport systems.</li> </ul>
Non-motorised access ways	Public rights of way for non-motorised transport providing basic and dedicated movement.	Public right of way: <ul style="list-style-type: none"> <li>Providing safe dedicated access and mobility for pedestrians, cyclists and animal-drawn transport.</li> <li>Providing dedicated access to social, recreational and economic areas.</li> </ul>

Source: Road Infrastructure Strategic Framework for South Africa (2006)

## 4. The Role of Road Infrastructure

The South African transport network system broadly consists of road, rail, air and sea transport systems, and all these different modes of transport play a major role in the economic growth of the country and contribute to the well-being of society at large. The economic growth of the country, competitiveness, mobility of both people and goods, and the improvement in the quality of life largely depend on the availability of a good road infrastructure and transport network. A good road infrastructure network enables smooth functioning of the transport system which plays an important role in the economy as a catalyst for integration, distribution and economic development.

Road transport is the dominant mode for transporting people and goods in South Africa. Investment in road network infrastructure constitutes a major part of government's capital stock. Hence the strategic goal is to protect, maintain and develop the current road infrastructure and transport network, and this requires resources.

As discussed in the above, roads are essential ingredients in a country's economic and social well-being. However, authorities should be very careful when planning for road infrastructure and avoid any possible duplication which may result in inefficiencies and white elephants. They should also be careful of any negative externalities that might occur as a result of other decisions, such as tolling of some roads.

For a road network infrastructure to effectively perform its economic and social roles, it needs to be in good condition. To keep the road network in good condition is a shared responsibility of the three spheres of government, i.e. national, provincial and local. However, in some cases these spheres of government can also involve the private sector by, for example, concessioning roads to a private sector company or by establishing an entity that will undertake the administration, development, operation and maintenance of the road infrastructure. SANRAL is such an entity established specifically to undertake the overall administration, maintenance and planning of all national roads. SANRAL has concessioned approximately 1 300 km of the tolled sections of the national road network to the private sector. Each private sector company then develops, operates and maintains the portion of national road network concessioned to it.

It should therefore be clear which sphere of government is responsible for which roads so as to reduce of the number of unproclaimed roads or eliminate them. This will in turn reduce the number of roads that are in poor condition, as this is to some extent due to the fact that these roads are unproclaimed.

## 5. Demand for a Road Network

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A road network ensures access to the whole transport network and promotes mobility of both people and goods. This applies especially to South Africa as a large proportion of bulk freight transport and passenger movement is by road. The National Household Travel Survey of 2003 by the Department of Transport revealed that about 85% of public transport commuters travel by buses and taxis, with only about 15% travelling by train.

According to the results of this survey, the shares of each travel mode are as given in Table 2.

**Table 2: Shares of each mode of travel in South Africa**

Mode of transport	Shares %
Taxis	64
Buses	21
Trains	15
Total	100

Source: The National Household Travel Survey, 2003, by the Department of Transport

It is clear from Table 2 that buses and taxis are the most used modes of transport. Obviously, these two modes use road infrastructure, thereby putting more strain on the South African road network. The survey also revealed that road transport accounts for the movement of about 650 million tons of freight traffic per year compared to about 180 million tons transported by rail.

For the road network to meet its strategic goal, government has the responsibility of ensuring that there is adequate delivery and good maintenance of the road infrastructure network. South Africa has a responsibility to ensure that its roads support the economy so that the country can be internationally competitive and that adequate access is provided to marginalised and poor communities. Another challenge, especially in urban areas, is road congestion resulting mostly from urban population growth and an increase in the number of vehicles. This puts more strain on urban road infrastructure networks and subsequently leads to speedy deterioration of roads.

South Africa's road infrastructure needs are as follows:

1. Maintenance and upgrading of the existing road infrastructure.
2. Expand the existing road infrastructure to reduce congestion, especially in urban areas. Historically the South African road network focused on the efficient movement of people and goods in the inter-urban context and failed to address the problem of congestion in urban areas (RIFSA, p.43)<sup>6</sup>.
3. Construction of new road infrastructure to give people access to roads who have not previously had access and to link new residential development areas to other areas of the country and to important facilities such as schools, clinics, hospitals, shopping centres, etc. The new paradigm calls for the provision of adequate access for marginalised and poor communities in rural and peri-urban areas.

## 6. Economics of Road Maintenance

### 6.1 Reducing Road Deterioration

Once the road has been constructed it does not last forever. A certain level of maintenance is needed to enable the road to withstand daily traffic use. Road maintenance is more important as construction costs rise and agencies compete fiercely for funds. However, it is important to note that even with proper and timely road maintenance, roads do deteriorate over time, and the rate of deterioration depends on a variety of factors including traffic loading, road strength and climatic conditions. Eventually a road network reaches the end of its design life and at this stage there is an urgent need for strengthening or reconstruction. According to Robinson (1987)<sup>7</sup>, periodic maintenance should be undertaken to prevent premature maintenance, which is very costly when compared to routine maintenance<sup>8</sup>. Failure to undertake periodic maintenance<sup>9</sup> necessitates road strengthening, which is three times more costly than periodic maintenance (Robinson, 1987). Failure to undertake strengthening necessitates rehabilitation, which increases the costs even further. In order to minimise the rate of deterioration and associated costs, timely road infrastructure maintenance could save the organisation money, because periodic maintenance is cheaper than repair work. This is very important - deferring maintenance results in rapid escalation of costs.

<sup>6</sup> National Department of Transport, *Road Infrastructure Strategic Framework for South Africa*, October 2006

<sup>7</sup> Robinson (1987).

<sup>8</sup> Routine maintenance according to SANRAL is the maintenance that is needed for pothole repairs, grass cutting and litter removal among other things.

<sup>9</sup> Periodical maintenance is only undertaken at intervals of several years, and includes reseal and or asphalt overlaying.

User costs are closely related to road conditions, therefore investing in road maintenance saves road users money. According to Robinson (1987), the level of deterioration will increase vehicle operating costs by 15%, and eventually by a further 50% if nothing is done. The additional costs include costs of additional fuel, tyres, spare parts and vehicle replacement (Robinson, 1987).

## 6.2 Reasons for the Decline of Road Conditions

In most cases, especially in developing countries, there has been an increase in the length of road networks without adequate planning for funds to undertake periodic maintenance when it is due. Furthermore, there has been such a rapid growth in traffic in recent years that deterioration has been accelerated due to the large volume of vehicles and overloaded vehicles, especially trucks in some instances. For example, in March 2005, the number of registered vehicles in South Africa was 6 798 696 compared to 7 823 314 in March 2007 (Provincial Budgets and Expenditure Reviews of 2005 and 2006). However, the number of registered vehicles is not evenly distributed across the provinces; hence the strain differs from province to province. For example, Gauteng has the largest number of registered vehicles (approximately 3 million in March 2007).

**Table 3: Number of registered vehicles in South Africa (2005 – 2007)**

Year	Total Number of registered vehicles
2005	6 798 696
2006	7 395 360
2007	7 823 314

Source: Provincial Budgets and Expenditure Reviews: 2005, 2006 and 2007

Agencies which are involved in the planning and maintenance of the national road network compete with other national needs such as education and health, and this is also the case at the provincial and municipal level. This competition has resulted in road maintenance being under-funded. Furthermore, funding for roads infrastructure is often irregular which makes planning difficult because of uncertainty.



## 7. Status of Road Infrastructure in South Africa

The South African road network consists of about 754 600 km of roads and streets. These roads and streets are surfaced national toll and non-toll roads, surfaced provincial roads, metropolitan, municipal and others, including unproclaimed rural roads. Table 4 gives a breakdown and the approximate length of the road infrastructure:

**Table 4: Length of road infrastructure network in South Africa**

Type	Length in km
Surfaced national toll and non-toll roads	15 600 <sup>10</sup>
Surfaced provincial roads	348 100
Unproclaimed rural roads	222 900
Metropolitan, municipal and other	168 000
Total	754 600

Source: National Treasury - Provincial Budgets and Expenditure Reviews: 2002/03 – 2008/09

The primary road network, which comprises more than R80 billion in assets is developed, maintained and managed by SANRAL on behalf of the DoT. The length of the national road network has increased with the incorporation of earmarked provincial roads into the national road network. Table 6 shows the lengths of provincial roads in kilometres that have been incorporated and are planned to be incorporated into the national road network.

The provincial governments are responsible for secondary and or tertiary roads which mainly cater for intra-provincial travel. The lengths and condition of the provincial roads vary from province to province and within provinces. According to the DoT, only 16,7% of provincial roads are paved and over 85% are gravel roads and access roads. The road maintenance backlog, unsurfaced roads and road utilisation are some of the indicators for future spending requirements. Table 5 shows the division of provincial roads into surfaced, gravel and access roads.

<sup>10</sup> Periodical maintenance is only undertaken at intervals of several years, and includes reseal and or asphalt overlaying.

Table 5: Breakdown of provincial roads

Province	Surfaced roads	Gravel roads	Access roads	Total no. of km	Road density
Eastern Cape	6 233	34 718	7 631	48 582	11,1
Free State	7 070	22 046	20 000	49 116	8,6
Gauteng	3 487	1 771	2 410	7 668	392,6
KwaZulu-Natal	7 489	19 347	10 571	37 407	29,8
Limpopo	6 403	11 866	10 578	28 847	12,5
Mpumalanga	7 062	10 517	7 479	25 058	18,3
Northern Cape	5 630	53 725	12 023	71 378	2,3
North West	6 723	19 161	10 017	35 901	11,8
Western Cape	7 172	24 991	7 822	39 985	33,3
Total	57 269	198 142	88 531	343 942	22,7

Source: Provincial Budgets and Expenditure Review: 2003/04 – 2009/10

## 8. Progress on the Classification of Roads

It has been revealed through interaction with the DoT that the actual process of classifying and reclassifying of all roads and assigning them to each sphere of government which was proposed by the FFC in its 2006/07 recommendation has not started yet. However, some progress has been made. According to communication with the DoT, it is about to finalise the process of developing guidelines that will be used in the classification and reclassification of roads. These guidelines will ensure that common criteria are followed in the process and will enforce uniformity in the way in which classification and reclassification are undertaken across the country. According to the DoT, issues on the classification and reclassification of roads, including the development of uniform criteria, have been discussed in meetings between the DoT and various stakeholders through the Road Coordination Body <sup>11</sup>. The process of finalising the guidelines is expected to be completed at the end of March 2008.

<sup>11</sup> The Road Co-ordination Body consists of representatives from different stakeholders from provinces, metros, SANRAL, the Department of Provincial and Local Government and the National Treasury, and sits on a quarterly basis.

After finalisation of the guidelines, workshops will be held with the relevant stakeholders from provinces and municipalities and thereafter the process itself is expected to start. The overall process of classifying and reclassifying roads and assigning them to the relevant sphere according to the DoT is expected to be complete in 2008/09 financial year. In nutshell, the process of classifying and reclassifying of roads has not started, however the process of developing guidelines is at advanced stage.

## 9. Roles of the Different Spheres of Government

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Road infrastructure is a shared responsibility between the national, provincial and local spheres of government. The roles of each sphere will be briefly discussed.

### 9.1 National or Primary Roads

According to the National Roads Act, No.24 of 1996, the national government is responsible for overall policy issues. SANRAL is responsible for the development, maintenance and management of all national or primary roads. The national road network has been increasing in recent years, especially post-1998 as a result of the process that was undertaken in which some of the provincial roads were identified and earmarked to be incorporated into the national road network. The national road network comprises toll roads with 32 toll plazas and non-toll roads. Prior to the establishment of SANRAL, the responsibilities of developing, maintaining and managing the national road infrastructure were with the South African Roads Board, which was an organ of state. The responsibility has now shifted to SANRAL. SANRAL is responsible for the following:

- Strategically plan, design, construct, operate, rehabilitate and maintain all South Africa's national or primary roads
- Deliver and maintain a world-class primary road network
- Generate revenue from development and management of its assets

- Undertake research and development to enhance the quality of roads
- On request from the Minister of Transport and in agreement with a foreign country, provide, operate and maintain roads of another country.

The costs of undertaking these responsibilities are driven by labour and operational (plant, fuel, civil engineering material and bitumen <sup>12</sup> costs. SANRAL's sources of funding to maintain, construct and manage national roads are: revenues from toll roads, the fiscus and borrowings. Toll roads and concession roads under SANRAL's control cover 2 400 km and are serviced by 32 toll plazas. SANRAL receives funds for the rehabilitation, construction, maintenance and operation of these national roads from the revenue it derives from the toll plazas (from toll road users). The revenue collected from the toll plazas is earmarked for rehabilitation, reconstruction and maintenance of toll roads only and cannot be used for any other purpose. SANRAL is allowed from time to time (normally yearly) to increase toll fees in line with the increase in costs of rehabilitating or maintaining roads.

SANRAL is also responsible for about 4 800 km of national roads which are non-toll roads. The primary source of funding for the non-toll national roads is from the national fiscus. SANRAL bids for non-toll national roads funding through the DoT during the general bidding process where every department and public entities, through their parent departments, bid for funding. In bidding for funding for non-toll roads, SANRAL competes with all other government departments and public entities. According to SANRAL, despite an increase in funding for the maintenance and rehabilitation of the non-toll road infrastructure over recent years, the level of funding still remains insufficient to fully finance the maintenance needs of the existing network. The reality is that over and above maintaining the existing network, some improvements are required to meet the growing traffic demands. This is further exacerbated by the state of the non-toll road network which is deteriorating and has exceeded its design life span (Figure 1 illustrates national roads that have exceeded their design life).

## 9.2 Provincial and Tertiary Roads

Provincial and tertiary roads cater mainly for intra-provincial trips within provinces, hence their planning, construction and maintenance is the responsibility of provincial governments. Provincial roads consist of gravel roads and paved roads.

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12

*Bitumen is a by-product of crude oil which is used in the construction of waterproof surface layers.*

Apart from own revenue, provinces receive transfers from the fiscus through the provincial equitable share formula and provincial infrastructure grants. Over 96% of provincial expenditure is financed from transfers from the fiscus. Provincial allocations which are received from the fiscus are thereafter divided into various provincial functions and this is determined by the province's own budgeting process and priorities.

Therefore, provincial allocations for road infrastructure compete with other pressing provincial needs such as education, housing and health. In most provinces social needs are given priority to the extent that roads departments are left with insufficient resources to meet their basic road maintenance needs. Insufficient funds have resulted in poor road infrastructure in the provinces. On the other hand, there is revenue which is collected, for example, from the fuel levy and other road traffic ordinance fees which is substantial. However, out of the money collected very little (less than a quarter) goes back to the road authorities to be used on road improvement. Under normal circumstances a larger amount of this revenue, more than three quarters, goes to the National Revenue Fund to be part of general taxation allocated to meet the needs of the country.

### 9.3 Municipal Roads and Streets

Municipalities are responsible for the planning, construction and maintenance of municipal roads, streets and bridges. Some municipalities are experiencing more problems than others, especially those that are experiencing congestion, such as municipalities in Gauteng.

Municipalities receive a Municipal Infrastructure Grant (MIG) to assist them with funding for infrastructure, especially bulk infrastructure. Municipalities are expected to augment the MIG grant with own revenue. However; some municipalities lack own revenue-raising capacities and tend to depend on the grant which is not sufficient to fund and maintain infrastructural needs such as roads, water and sanitation, electrification, etc.

## 10. Shifting Provincial Roads to SANRAL

Over the last few years SANRAL has taken over and incorporated into a primary road network a number of provincial roads that were earmarked. This means that SANRAL now has an increased responsibility to manage, plan, operate and maintain roads, which was initially the responsibility of the provinces.

The expansion of the national road network is shown in Table 6 below. The information was extracted from the SANRAL Annual Report 2007<sup>13</sup> as well as from its Declarations of Intent for the financial years 2002 to 2005 and 2005 to 2008.

**Table 6: Lengths of roads incorporated and to be incorporated into the national road network**

Province	Total length proclaimed	Total length incl. planned	2001/02	2003/04	2004/05	2005/06	2006/07	Difference
Western Cape	551	1 062		150		401		511
Eastern Cape	740	740		740				0
Free State	760	1 228		760				488
Gauteng	175.5	314		130			45.5	138.5
KwaZulu-Natal	273	961		273				688
Limpopo	1430	1 430			1 430			0
Mpumalanga	1 669	1 727	172		130	788	579	58
Northern Cape	2 617	2 617				2 617		0
North West	1 032	1 267				1 032		235
	9 247.5	11 346	172	2 053	1 560	4 838	624.5	2 118

Source: SANRAL Annual Report 2007.

From Table 6, the following can be noted:

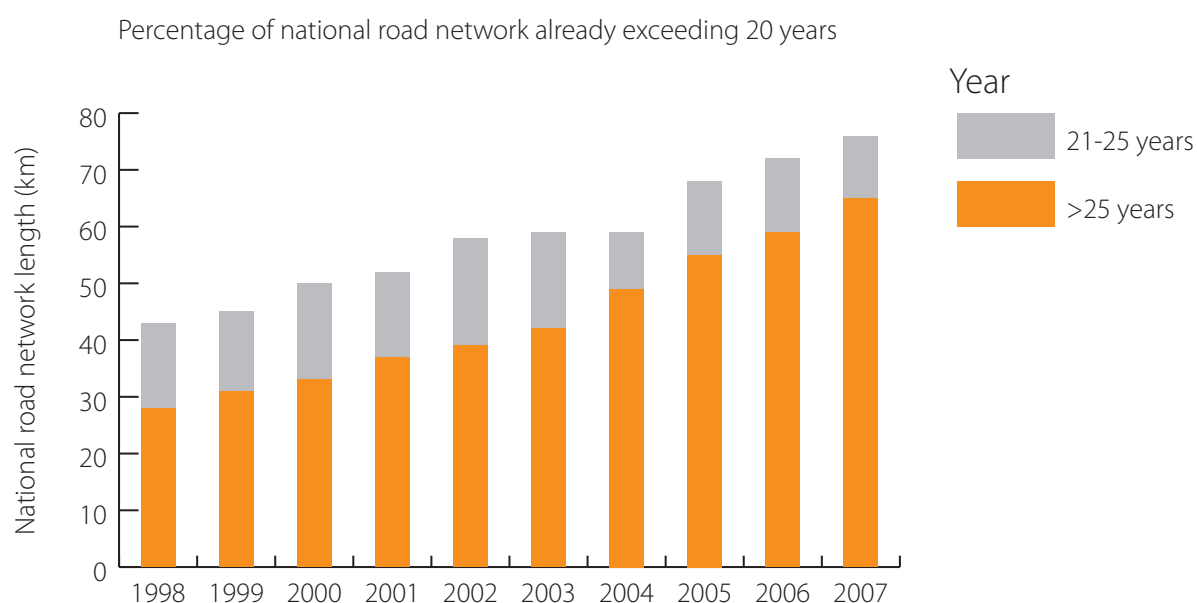
1. The proclamation process has taken place over a number of years.
2. Roads have been proclaimed in all nine provinces.

3. The National road network has increased significantly. For example, during 1990 it was about 6 000 km but now it has more than doubled and is expected to reach 20 000 km by 2010.
4. The road network of 624.5 km that has been taken over from Mpumalanga and Gauteng provinces alone in the 2006/07 and incorporated into the national road network has increased the percentage of non-toll national roads by approximately 85%.
5. The non-toll network nationwide comprising approximately 14 310 km is entirely funded from the fiscus.
6. The newly incorporated network has a pavement structure that has not been well maintained and in most cases has exceeded its life span<sup>14</sup>.
7. In some provinces such as Eastern Cape, Limpopo and Northern Cape, all provincial roads planned to be incorporated into the national road network have been incorporated.
8. In all other provinces there are some provincial roads that are yet to be incorporated into the national road network, for example the Western Cape and still KwaZulu-Natal have about 511 and 688 kilometres of roads respectively to be incorporated into the national road network

FFC research found that SANRAL has a problem with regard to the process of incorporating some of the earmarked provincial roads into the national road network. The problem emanates from the requirement that although these provincial roads have been earmarked to be incorporated into the national road network, SANRAL must wait for an official letter from the premier of the province requesting SANRAL to go ahead with the incorporation. SANRAL cannot take over a provincial road without such a letter from the premier despite the provincial road being earmarked for incorporation into the national road network. According to SANRAL, some provinces delay the process of making such applications. Although data are not available for the condition of the entire provincial road network, SANRAL has indicated that in most instances these earmarked roads are not properly maintained by the provinces.

## 11. Structural Life of the National Road Network

A large proportion of national road infrastructure network in South Africa has currently exceeded 20 years (the design life). The graph in Figure 1 illustrates the percentage of the national road network that is older than 20 years.



**Figure 1: National road network that has exceeded 20 years**

Source: SANRAL, 2007

From the graph it can be seen that by 1998, about 28% of the national road network was over 25 years and about 15% was between 21 and 25 years old. However, the situation has changed drastically as in 2007 more than 60% of the national road network is reported to be older than 25 years. The 1998 figure has more than doubled over a period of 8 years. The overall proportion of the national road network that has exceeded its life design of 20 years is more than 75%.

According to SANRAL's 2008 Medium Term Expenditure Framework (MTEF) budget submission to restore the non-toll road network to the desired level (excluding backlogs in strengthening and construction of new roads), the following are needed:



- Routine operation – this is required for pothole repairs, grass cutting and litter removal. SANRAL estimated that it costs about R41 000 per km/per year.
- Periodic maintenance – for reseal or asphalt overlay which costs about R960 000/km/10 years.
- Strengthening – complete rehabilitation, which costs about R6 500 million per km/25 years.
- Non-project-specific – for surveying, monitoring, land acquisition, salaries, etc.

## 12. Funding Implications

It is clear that the process of incorporating provincial roads into a national road network which is under the administration of SANRAL has been happening for some years and is still continuing as there are other provincial roads that are planned to be incorporated into the national road network. Most provincial roads that have been incorporated or are planned to be incorporated into the national road network are non-toll roads. Furthermore, the roads that have been incorporated are in bad condition and most of them have already exceeded their design life. This means that they increase the national road network which is funded from the fiscus. Therefore, the proclamation of provincial roads as national roads increases the burden on the national road network which in turn increases the burden on the fiscus as non-toll national roads are mostly funded from the fiscus.

One would expect that the funding should follow the function shift, meaning that the funding that would have been used by the provinces on maintaining and rehabilitation of road infrastructure should also be transferred to SANRAL as the responsibility has been transferred. Unfortunately, this is not the case as SANRAL only takes responsibility or the function without receiving funds from the provinces.

The number of provincial roads incorporated into the national network differs from province to province. This means that some provinces will have more resources than others. Therefore, in essence those with more kilometres of their roads being incorporated into the national network will be better off and this will have a potentially adverse effect on equity in the fiscal framework across provinces. For example, in Northern Cape, Mpumalanga, Limpopo and North West provinces the number of road kilometres taken over by SANRAL is 2 617 km, 1 669 km, 1 430 km and 1 032 km respectively. The number of kilometres taken from these provinces is relatively high compared, for

example, to KwaZulu-Natal (273 km) and the Western Cape (551 km). This essentially means that some provinces have benefited more from the process than others, and this affects equity. The national road network consists of 74% un-tolled roads and this implies that 74% of the national road network needs funding from the fiscus. This percentage is likely to increase in the future as there are plans to incorporate additional provincial roads into the national road network which will put a greater strain on the fiscus.

## 13. Conclusion and Recommendations

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Economic growth, competitiveness, mobility and improvement in the quality of life largely depend on the availability of a robust road infrastructure and transport network. It is therefore imperative that the road infrastructure be kept in good condition by carrying out the required periodic maintenance to prevent premature deterioration of the road infrastructure. This has been proven to be very cost effective as a further delay of 3 to 5 years could increase the required repair costs by between 6 and 18 times. Also, because of the subsequent decrease in ride quality, vehicle operating costs (i.e. road user costs) could easily double, with an associated negative ripple effect on the economy.

SANRAL has acquired roads from all nine provinces and the national road network has increased significantly. The newly incorporated roads have not only increased the national road network but also the non-tolled network proportion of the national network. This newly acquired network has a pavement structure that has not been well maintained and which is over 25 years old.

The increase in the national road network, especially the non-tolled roads, increases the burden on the fiscus. Not funding the road network is not a solution either as the road network will continue to deteriorate, resulting in the escalation costs in the future. The FFC therefore recommends the following:

- The process of classification/reclassification of roads and assigning them to the relevant sphere should be accelerated
- Provinces with provincial roads planned to be incorporated into the national road network should make the application without further delay if they plan to do so. This should be accelerated to prevent further deterioration of the roads and to reduce the costs of maintenance or rehabilitation.
- If a province does not intend to transfer a road network which has already been earmarked to be incorporated into the national network, it should indicate its unwillingness and give assurance that it will keep the roads in good condition.

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## Electricity Sector Pricing, Generation and Investment

Ramos Mabugu, Ismael Fofana & Margaret Chitiga

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## Abstract

This study uses computable general equilibrium modelling techniques coupled with input-output models to investigate the impacts of reforms in electricity pricing and infrastructure expansion. Simulation results suggest that electricity infrastructure expansion has positive impacts on output, sectoral production and household welfare in aggregate. Electricity pricing reforms surprisingly have very small negative macroeconomic effects compared to the size of the reform. In addition, their distributional impacts are quite progressive. Given that the impact on poor people is negative, albeit less severe compared to that on richer households, the study proposes the need to increase annual funding for the roll-out of services under the free basic electricity programme. For greater efficiency of resource allocation, technological innovation and increased investment in renewable energy sources, the study proposes a package of incentives for such purposes.

Keywords: Electricity; pricing; generation; economy-wide models; simulations; welfare; cost of living; policy reform



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## Abbreviations and Acronyms

AsgiSA	Accelerated and Shared Growth Initiative for South Africa
CD	Cobb-Douglas
CES	Constant Elasticity of Substitution
CGE	Computable General Equilibrium Model
DME	Department of Minerals and Energy
FFC	Financial and Fiscal Commission
GDP	Gross Domestic Product
IES	Incomes and Expenditure Survey
I-O	Input-Output
INEP	Integrated National Electrification Programme
IPP	Independent Power Producer
kWh	Kilowatt-hours
LES	Linear Expenditure System
NERSA	National Energy Regulator of South Africa
RED	Regional Electricity Distributor
SAM	Social Accounting Matrix
StatsSA	Statistics South Africa
TWh	Terawatt hours

## 1. Introduction

Following years of being endowed with surplus electricity generation, South Africa is currently at a critical juncture where it needs to make a new wave of investments in its power sector. A significant proportion of these new investments are intended to meet anticipated electricity demand necessitated by government's higher growth target of 6% between 2010 and 2014 under the Accelerated and Shared Growth Initiative for South Africa (AsgiSA) growth plan. In addition, investments in the power sector are geared towards addressing supply constraints that have recently been compounded by serious electricity supply problems which have led to serious load shedding. While there will be some increases in electricity supply from projects such as returns to service, co-generation and the gas turbine, it is anticipated that most of the other supply-side options will take a long time. Demand-side management is therefore critical. An overhauled electricity pricing structure that reflects full economic costs to encourage efficiency, no wastage and internalisation of externalities needs to occupy centre stage of demand-side management.

Huge investments of the nature proposed<sup>1</sup> and new pricing structures for electricity will have substantial impacts not only on welfare, but also on broader resource allocation and on the rest of the economy. From the perspective of a division of revenue process, an understanding of the implied trade-offs and opportunity costs of such huge investments and pricing structure is important as they entail a re-assessment of revenue allocation policy, thereby giving authorities an opportunity to leverage overall development strategy for the economy.

In order to address these questions and draw consequences for the division of revenue process, two complementary economy-wide modelling approaches are used to estimate the impact of the shocks. In order to understand the impact of the proposed electricity pricing reforms, the first approach utilises a behavioural accounting modelling approach which combines input-output tables and household expenditure. The second approach, used to analyse expansions in electricity infrastructure, employs structural computable general equilibrium (CGE) models that are designed specifically for the South African economy. The models build in price-responsiveness behaviour to measure pass-through effects and account for the effects of higher energy prices on households, consumer price indices, government balances, investment, balance of payments and unemployment.

<sup>1</sup> Eskom plans to invest about R343 billion in the next five years.

## 2. Electricity Sector Overview

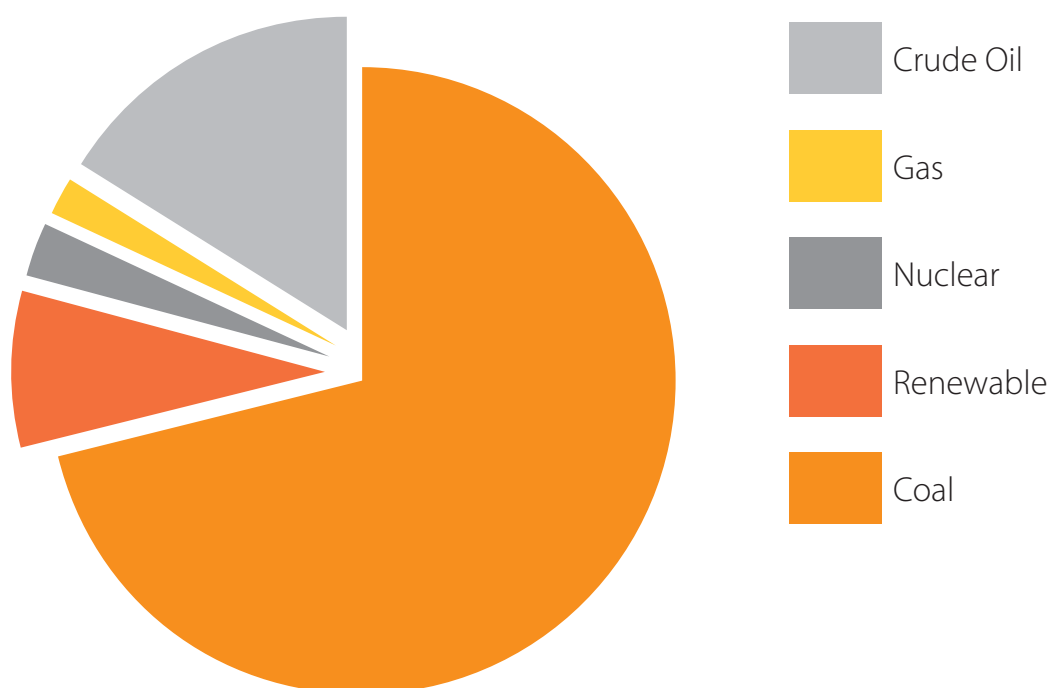
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Government's energy policy objectives as set out in the 1998 White Paper on Energy Policy are "to increase access to affordable energy services, improve energy governance, stimulate economic development, manage energy-related environmental impacts and secure energy supplies through diversity" (Department of Mineral and Energy, 2005). At the forefront of government's strategy to alleviate poverty using energy policies is the Integrated National Electrification Programme (INEP). INEP includes a very aggressive electrification programme with universal access to basic electricity set as an explicit government objective. Electrification rates are quite high with about 70% of the country electrified and about half of the poorest two income quintiles at the national level having access to electricity. In 2005, government gazetted the National Electricity Basic Services Support Tariff Policy which aims to bring relief to poor households by giving 50 kilowatt-hours (KWh) of free electricity a month. Users will pay the normal tariff for any consumption exceeding 50 KWh per month. Free basic electricity is funded through the local government equitable share as Programme 5 on Free Basic Services and Infrastructure which is channelled through the Department of Provincial and Local Government.

The electrification programme is funded through infrastructure transfers from the Department of Minerals and Energy to Eskom and municipalities. Eskom's involvement in the electrification programme is purely recognition of insufficient capacity at local government sphere. The other electrification funding is intended for dealing with electrification backlogs specifically at schools and clinics. Recently, government has used an amount of R60 billion from the contingency reserve to support Eskom's capital investment plans.

Figure 1 shows the sources of primary energy in South Africa. The country's primary energy supply consists of coal, crude oil, gas, nuclear, hydro and renewables. Coal provided about 72% of the total primary energy, while crude oil contributed 16% of the total primary energy supply over the period 2000 - 2004 (Figure 1). The availability of large deposits of coal has ensured low electricity prices in South Africa.

Figure 1: Percentage contribution to primary energy supply (2000–2004)

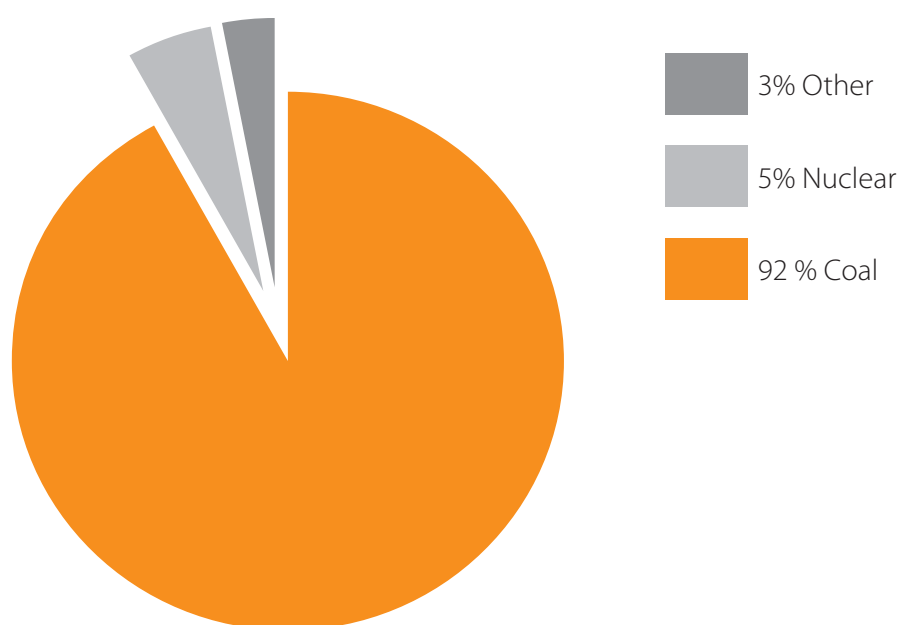


Source: Department of Minerals and Energy (2005).

According to Figure 2, coal is the dominant energy source used to generate electricity. It contributes 92%, followed by nuclear (5%) and others (3%)<sup>2</sup>

<sup>2</sup> This includes hydro/pumped storage, renewables/bagasse and very little gas.

Figure 2:South Africa's energy sources used to generate electricity



Source: National Electricity Energy Regulator (2004)

As Table 1 shows, the manufacturing, domestic and mining sectors are the major end users of electricity, consuming 70% of the 208 Terawatt-hours (TWh)<sup>3</sup> available for end use in 2004. The agriculture and transport sectors are comparatively small consumers of electricity.

Table 1:End use of electricity by demand category

Category	Share (%)
Domestic	16.8
Agriculture	2.4
Mining	15.9
Manufacturing	38
Commercial	11.4
Transport	2.7
General	12.8

Source: National Energy Regulator (2004)

There are 3 major players in the electricity supply and distribution industry, namely Eskom, the 177 amalgamated local authorities (hereafter referred to as municipal governments) and private producers. The electricity supply industry is dominated by Eskom Holdings (Pty) Ltd which accounts for approximately 97% of all electricity generation and supply in the country. Private producers account for about 2.8% of the electricity produced and the remainder is accounted for by municipal governments. Gross electricity generation was about 230 TWh in 2004. Of this, Eskom contributed 96% while private generators contributed 3.2% and municipalities generated 0.8% (National Energy Regulator of South Africa (NERSA), 2004). With the exception of the Motraco line that is jointly owned with utilities from Mozambique and Swaziland, Eskom owns all the other transmission lines around the country. On the distribution side, Eskom is responsible for close to 60% of all direct sales, while the 177 amalgamated local authorities are responsible for the remaining 40%. Eskom distributed 60.3% of the 214 TWh available for distribution in 2004. The remaining 39.7% was attributed to municipal and other distributors (NERSA, 2004).

Since 1998, government has initiated a number of processes to deal with the restructuring of the electricity supply industry. On the electricity generation side, restructuring will establish an Eskom Holdings-owned subsidiary that will retain 70% of the generation market share. The remaining 30% will be shared between private independent power producers (IPPs) (20%) and Black Economic Empowerment groups (10%). IPPs and the generating side of Eskom will not be allowed to carry out business in the transmission or distribution industry. Changes in regulation of the electricity distribution industry will be far reaching and commenced with the establishment of Eskom as a public company in 2001. Due to the large numbers of distributors (both large and small), the thrust of restructuring has been towards rationalisation of the distribution of assets of Eskom and local governments into six Regional Electricity Distributors (REDs)<sup>4</sup> According to their geographic location, the REDs that are foreseen are Northern Cape and Western Cape (RED 1), Free State, Gauteng and Mpumalanga (RED 2), Eastern Cape and KwaZulu-Natal (RED 3), Gauteng, Northwest and Northern Cape (RED 4), Gauteng, KwaZulu-Natal and Mpumalanga (RED 5) and Gauteng, Limpopo, Mpumalanga and North West (RED 6)<sup>5</sup>.

The electricity industry is currently regulated by the NERSA, a statutory body established in terms of the National Energy Regulator Act of 2004 (Act No. 40 of 2004). In terms of section 4(ii) of the Electricity Regulation Act of 2004 (Act No. 4 of 2006), NERSA must regulate electricity prices and tariffs. The current electricity pricing regime is based on average cost of supply plus a profit margin equivalent to a price of 15 cents per KWh, which is below the short run marginal cost that is estimated to be 21 cents per KWh and the long run marginal cost of 30 cents per KWh. These prices do not reflect externalities such as the environmental damage that is caused by coal-fired electricity production.

<sup>4</sup> This is being done taking into account that the constitutional responsibility for electricity reticulation lies with municipalities.

<sup>5</sup> Note that this is still work in progress. Further work (e.g. resolving outstanding policy issues regarding REDs such as the regulatory framework for electricity reticulation, governance and financial arrangements for REDs and any gaps that may be in the Municipal Systems Act and Municipal Finance Management Act related to REDs) is being carried out by the departments of Minerals and Energy, Provincial and Local Government, Public Enterprises and National Treasury. These issues are discussed at length elsewhere in this submission.

Going into the future, it will no longer be possible for Eskom to supply electricity at the current low prices due to rising primary energy costs, an anticipated accelerated capital expenditure programme and increased environmental awareness. Eskom's capital expansion plans amount to R342.9 billion in the next five years split between generation (73%), transmission (12%) and distribution (10%). The revised capital expenditure will add 5 800 megawatts. The projects include the return to service of projects at Camden (R5.2 billion), Grootvlei (R4.8 billion) and Komati (R6.1 billion). Other projects include the open cycle gas turbine project Gas 1 and the Ingula pump storage project in northern KwaZulu-Natal. Finally, the major coal-fired electricity generation plants are the ones at Medupi in Lephalale (R85.6 billion) and Bravo near Witbank (R84.8 billion). With regard to transmission, the Cape grid is being upgraded while new lines are being built between Majuba and KwaZulu-Natal.

## 3. Modelling Procedure and Data

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### 3.1 The CGE Model

Industry-specific producers are modelled as representative producers that are assumed to have a nested Constant Elasticity of Substitution (CES) production technology. Consumers maximise their utility under limited budgets and given market prices. Representative urban and rural households maximise unitary utility functions over the group of consumption by purpose, subject to the constraint of their revenue. Thus households' expenditure on commodities combines a Linear Expenditure System (LES) function over various groups of consumption by purpose, and a Cobb-Douglas (CD) function over commodity categories for each group of consumption by purpose. The model differs from standard CGE models in three aspects. These differences relate to (a) modelling of unemployment, (b) energy supply and demand specification and (c) the price setting method in the domestic oil market. The model has the following four types of energy: crude oil, petroleum products, coal and electricity (including gas and renewable energy).

An industry  $j$ 's technology is presented as a nested CES function (Figure 3). The gross output consists of a Leontief function of the composite value added-energy and the non-energy input consumption. Leontief technology also determines the demand for non-energy commodities in the total non-energy input consumption. A CES function aggregates low-skilled labour and the bundle of capital-energy and skilled labour in the value-added energy composite, with a high elasticity of substitution.



The bundle of capital-energy and high-skilled labour is also a CES aggregation of capital-energy and high-skilled labour. However, the latter has a low elasticity of substitution. Each low-skilled and high-skilled labour category is a fixed proportional relationship between urban and rural labour categories. A CES function with a low elasticity demonstrates that capital and energy imperfectly substitute for each other or are quasi-complementary in the composite capital-energy.

Energy inputs are divided into four types which are imperfect substitutes of each other (Figure 4). Composite fuels and electricity are combined in a CES function with a relatively high elasticity of substitution. The former is defined as a CES aggregate of coal and oil fuels with a relatively high elasticity of substitution between them. Finally, crude oil and refined oil products are assumed to be complements in the oil bundle. The demand for each energy commodity is shared between imports and domestically produced goods depending on their relative price and the degree of substitutability between them.

### 3.2 The Behavioural Accounting Modelling Approach

The mesoeconomic impacts of high electricity prices are captured through changes in the products' cost. Commodities available in the economy are produced locally and imported. Sectoral outputs and imports are valued at basic cost, whereas final demand is valued at purchase cost. The basic cost of domestically produced commodities is given by the sum of the inputs cost, the factor costs and the activity net taxes per unit of product. The basic cost of the imported good is equal to the sum of the cost from the country of origin, the insurance cost and the freight charges per unit of the good. The basic cost for a specific product is equal to the sum of weighted basic costs of the domestically produced good and the imported good with the weights being their shares per unit of total supply. The purchase cost adds transaction charges (essentially levies, domestic taxes less subsidies, import duties, and trade and transport margins) to the weighted basic cost. One has to consider the analysis as a first-order (or direct) impact assessment.

Higher-prices of electricity increase the cost of living through direct and indirect effects. The direct effects pass onto electricity products purchased directly by households. The magnitude by which such effects affect the various groups of households depend on the relative share of electricity products in household budgets. The results from the direct effects can be misleading if there are important indirect effects following an increase in the price of such an important economy-wide variable. The estimation of the indirect effects is much more complex than that of the direct effects and requires an input-output table.

Figure 3: Structure of production by industry

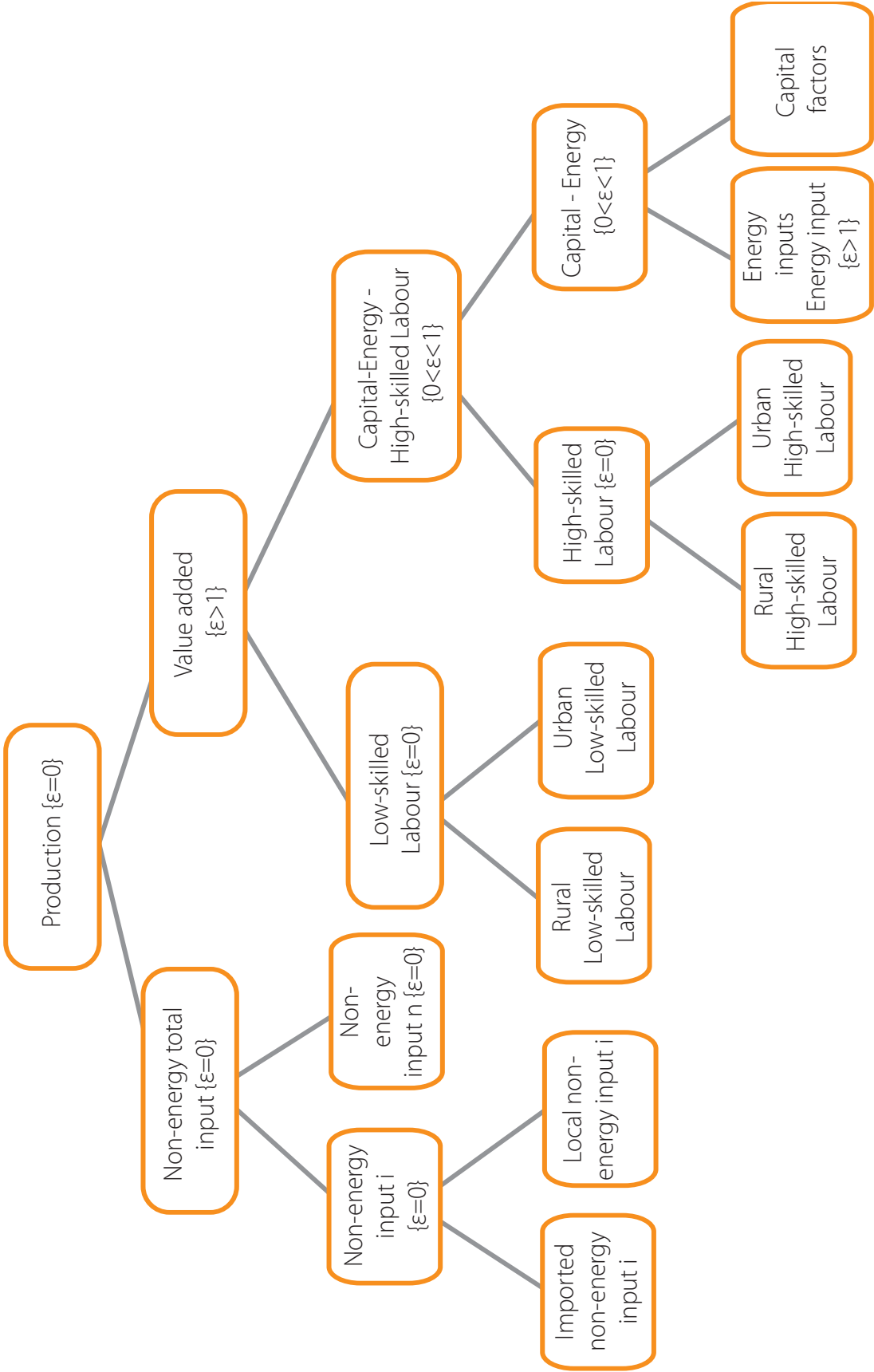
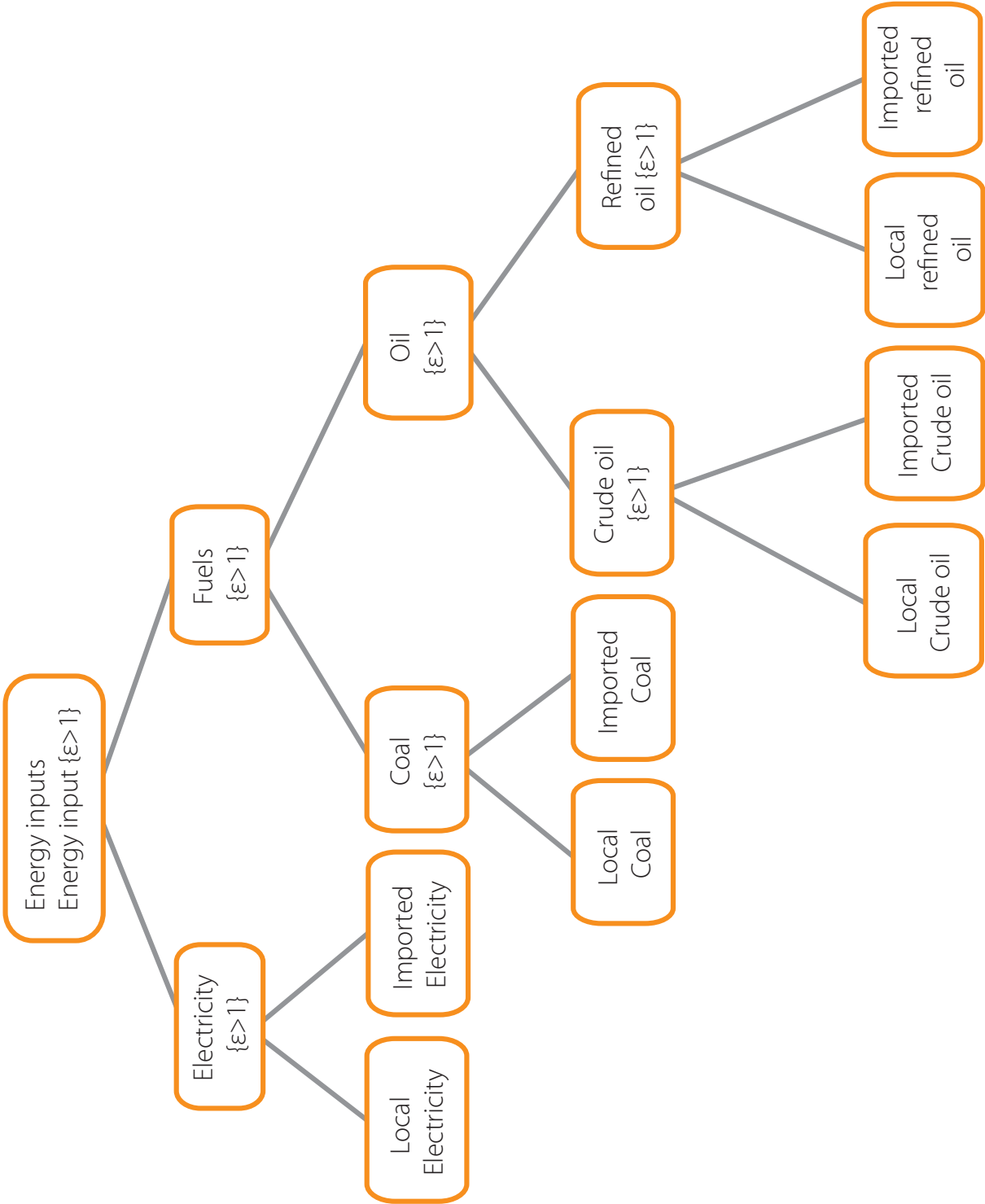


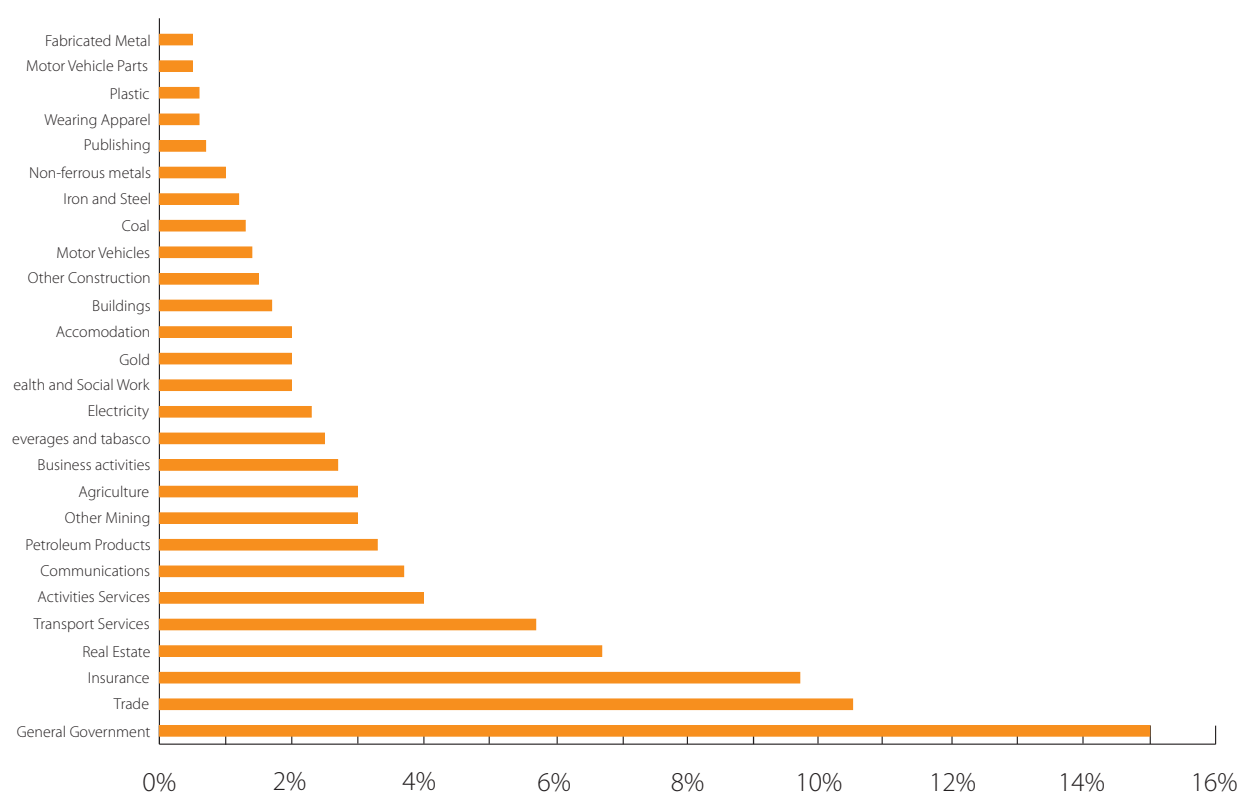
Figure 4: Structure of sectoral energy input use



### 3.3 The Data

The data to implement the model are based on a household survey dataset and an input-output dataset supplied by Statistics South Africa (StatsSA). Together, 95 different industries and five households arranged according to quintiles are used. The electricity sector is among the least oil-input-intense sectors in South Africa, with a share of oil in the total energy input of 2% and an oil intensity of 0.006%. It is highly intensive in coal which represents more than 70% of the sectors' energy input cost. Figure 5 shows that 'General government' is by far the biggest contributor to gross domestic product (GDP) with 15.0%, followed by 'Trade services' with 10.3%. 'Electricity industry' contributed 2.2% to GDP and ranked among the top thirteen contributors of the 95 industries in the economy.

Figure 5: Sectoral contribution to GDP (in percent)



Source: Compilation from the SU-tables; Final supply and use tables, 2000: an input-output framework/Statistics South Africa. Statistics South Africa, 2003.

Table 2 presents the shares of electricity expenditure in total expenditures for the different households. Electricity expenditures are an important component of total household expenditures, representing on average 3.5% of total expenditures. There are quite significant differences in the shares of electricity in total expenditures among quintile groups, ethnicity and location.

**Table 2: Shares of electricity expenditure in total household expenditure**

	South Africa	Area		Population Groups			
		Urban	Rural	Black	Coloured	Asian	White
Quintile 1	1.9	2.1	1.7	1.9	3.4	3.9	0.9
Quintile 2	2.9	3.6	2	2.8	4.7	3.2	3.6
Quintile 3	3.4	4	2	3	5	15.6	9.6
Quintile 4	4.2	4.5	2.5	3.5	5.6	8.6	7.1
Quintile 5	3.4	3.4	4.4	3	4.6	4.7	3.4
All	3.5	3.5	3	3.1	4.8	5.3	3.5

Source: Compilation from the Incomes and Expenditure Survey 2000

## 4. Policy Simulations and Results

The business-as-usual scenario is based on the assumption that there are no shocks to the economy. The simulations run using the models and data presented above are divided into two areas of focus, namely:

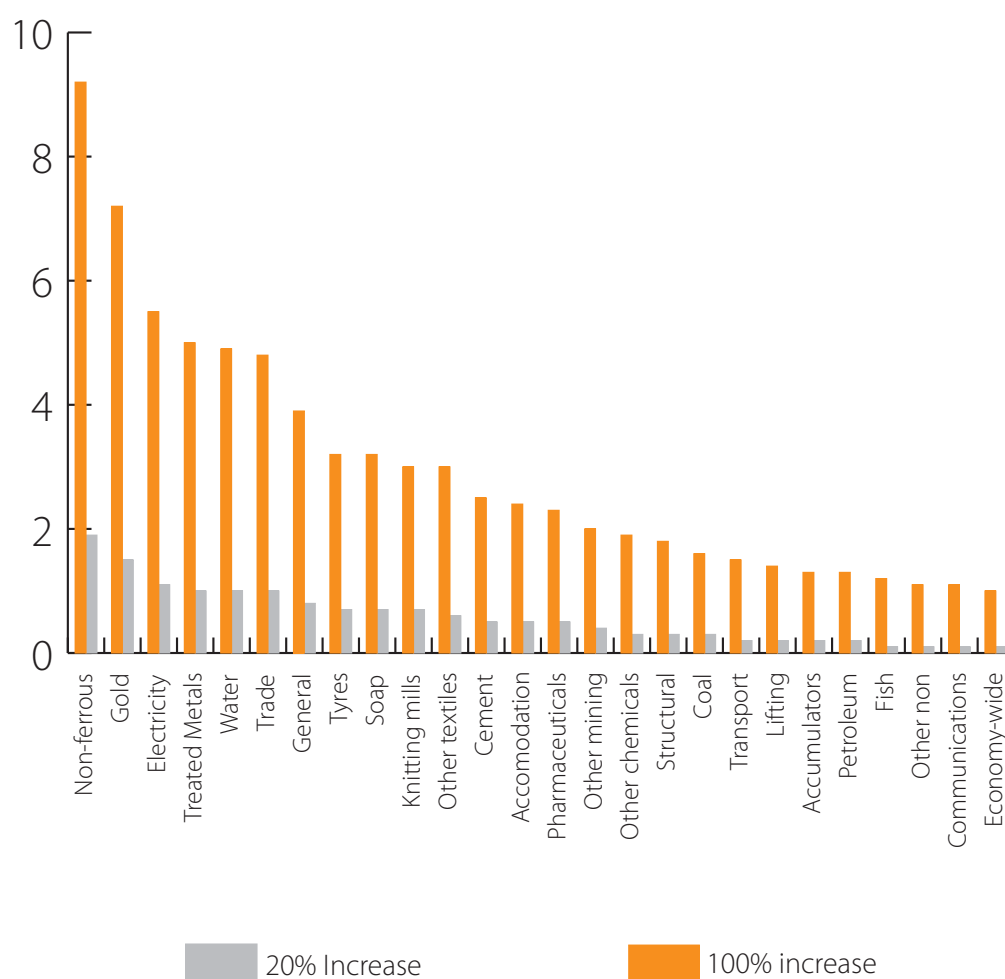
- Impact of a 20% and 100% tariff increase on the economy<sup>6</sup>
- Impact of a 5% increase in electricity infrastructure.

<sup>6</sup> As discussed earlier, the electricity price of 15 cents/KWh implies that prices must go up by 6 cents/KWh to reflect the cost of supplying additional electricity according to the short-run marginal cost and 15 cents/KWh if prices are to reflect the future cost of supplying additional electricity as reflected by the long-run marginal cost. These translate respectively to increases of 20% and 100% in the model simulations. We have chosen to use a 20% increase as the lower bound increase for illustrative purposes and 100% as the upper bound estimate for the increase in prices.

## 4.1 Simulation 1: Impact of a 20% and 100% Tariff Increase on the Economy

The impact on sectors of an increase in electricity prices is through changes in costs of production which are split into changes in input cost, basic cost and purchase cost for all the 95 industries. The economy-wide average increase in purchase cost is 1.1% for a 100% tariff increase and 0.2% for a 20% tariff rise. Figure 6 shows the results for products/industries that experience an increase in purchase cost (after taxes) above the economy-wide average. These are the impacts of the policy that will have the greatest impacts on the economy and household wellbeing.

Figure 6: Percentage change of purchase cost for selected products



Source: Compilation from electricity price shock results based on model built

As would be expected, a 100% increase in tariffs has a higher impact on purchase cost than a 20% tariff rise across all the industries. Most of the industries that experience purchase cost increases that are above the economy-wide average are those that were classified as the high-intensive electricity sectors. The highest incidence of the tariff increase is on 'Non-ferrous metals', whose purchase cost goes up by 9.4% and 1.9% respectively for the 100% and 20% tariff increases. 'Gold' is also severely impacted, experiencing increases of 7.3% and 1.5% following the two simulations. Outside the electricity industry itself, the other sectors that experience significant pressure on their purchase costs are respectively 'Treated Metals', 'Water' and 'Trade'.

It is interesting to note that with the exception of 'Fish', most basic foodstuffs which are so central to household wellbeing experience increases in their purchase cost that is below the economy-wide average. 'Confectionery', 'Bakeries', 'Meat', 'Grain', 'Mills', 'Oils', 'Fruit', 'Dairy', 'Sugar' and 'Other Food' all experience cost pressures that are below the average, suggesting that the impacts on poor households may be less severe. The reason for this mild impact on the purchase cost foodstuffs can be traced back to their comparably low electricity intensity. The same outcome is also true for 'Textiles' and 'Footwear', the other important products for poor people. Finally, it is noticeable that most agriculture-oriented products which are important for poor people in agricultural production also experience purchase cost pressures below the average. This applies to 'Fertilizers', 'Agriculture', 'Animal Feeds', 'Pumps' and 'Agricultural Machinery'.

We now turn our attention to the effects of higher tariffs on households (Table 3). The focus will be on the impact on household wellbeing/welfare as measured by the equivalent variation. Equivalent variation is the change in income that would be required without electricity tariff reform to make people as well-off economically as they would be with the electricity tariff reform(5). Overall, a 100% (20%) increase in electricity tariff will lead to a 2.6% (0.7%) decrease in household welfare for South Africa as a whole. Welfare declines the least for the poorest households across the country. Fourth quintile households experience higher than average declines in their welfare following the hike of electricity prices.

**Table 3: Percentage change in household wellbeing (20% and 100% increase of tariff)**

	South Africa		Areas				Population Group							
			Urban		Rural		Black		Coloured		Asian		White	
Simulation	20%	100%	20%	100%	20%	100%	20%	100%	20%	100%	20%	100%	20%	100%
Quintile 1	-0.4	-1.6	-0.5	-1.9	-0.4	-1.3	-0.4	-1.5	-0.8	-2.7	-0.9	-3.2	-0.5	-1.8
Quintile 2	-0.5	-2.0	-0.7	-2.6	-0.4	-1.4	-0.5	-1.9	-0.9	-3.3	-0.8	-2.7	-0.9	-3.3
Quintile 3	-0.7	-2.4	-0.8	-2.8	-0.4	-1.6	-0.6	-2.2	-1.0	-3.5	-2.2	-8	-1.8	-6.7
Quintile 4	-0.8	-3.0	-0.9	-3.3	-0.5	-1.9	-0.7	-2.5	-1.0	-3.8	-1.6	-5.9	-1.4	-5.1
Quintile 5	-0.7	-2.6	-0.7	-2.6	-0.8	-3.0	-0.6	-2.1	-0.9	-3.2	-0.9	-3.4	-0.7	-2.6
All	-0.7	-2.6	-0.7	-2.7	-0.6	-2.1	-0.6	-2.2	-0.9	-3.4	-1.0	-3.7	-0.7	-0.7

Source: Compilation from electricity price shock results based on model built

The electricity price measures introduced result in differential impacts on welfare depending on the location of the households. On average, urban households experience greater declines in welfare than rural households. Within rural households, although welfare declines, the measure is progressive to the extent that all lower quintile households are less severely affected than their richer counterparts. The picture changes dramatically when we look at urban households – although the poorest household is the least severely affected by the measure, third and fourth quintile households are the worst affected while the second and richest quintile are equally affected.

Another important explanatory factor for the welfare outcomes observed is ethnicity. Asian and Coloured households experience the worst declines in household wellbeing, followed by White households. There is a mild contraction in Black households so that they end up with a lower incidence on their welfare than the economy-wide average would predict. Across all the ethnic groups, the second and third richest quintiles are the worst affected in terms of welfare loss. Among the poorest households, Asian households are the worst affected followed by Coloured households.



## 4.2 Simulation 2: Impact of a 5% Increase in Electricity Infrastructure

An 5% increase in capital infrastructure in the electricity sector leads to macroeconomic effects displayed in Table 4. The simulation leads to an increase in GDP of 0.19%. Private consumption rises as incomes have gone up. With a given current account balance, the increase in output induces a real exchange rate depreciation, which leads to an increase in exports and consequently imports. The increase in investment, consumption and exports all contribute to the increase in GDP.

**Table 4: Macroeconomic effects of a 5% increase in electricity infrastructure**

	Variation in %
Real Exchange Rate	-0.24
Imports	0.18
Exports	0.22
Unemployment rate*	-0.17
Wage	-0.04
Rent	-0.28
Consumer Price Index	-0.12
Consumption	0.16
Saving	0.5
Investment Price	0.02
Investment	0.43
GDP	0.19
Employment	0.2

Source: Compilation from electricity infrastructure shock using the CGE model for South Africa

Note: Variations computed as percent changes; \*Except for unemployment rate expressed as percentage point changes.

The mesoeconomic results of increased electricity infrastructure are displayed in Table 5. The main mechanism behind those production effects comes from the investment closure. As demand for investment products increases in line with increased infrastructure demand, industries whose products are used intensively in investment experience substantial increases in their demand, and consequently their output. Coal is heavily utilised in electricity production and experiences the highest increase in output. Heavy manufacturing, light manufacturing and mining have among the highest shares of their product in total investment demand and hence experience higher than the economy-wide average increase.

**Table 5: Meso-economic effects of a 5% expansion in electricity infrastructure**

	Consumer Prices	Sectoral Supply
Coal	-2.5	1.27
Crude oil	-0.25	0.18
Petroleum	-0.34	-0.03
Electricity	-1.79	1.82
Agriculture	-0.15	0.19
Mining	-0.02	0.23
Food manufacturing	-0.11	0.17
Light manufacturing	-0.06	0.21
Heavy manufacturing	-0.02	0.27
Services	-0.07	0.12

Source: Compilation from electricity infrastructure shock using the CGE model for South Africa

Note: Variations computed as percent changes

With respect to employment and earnings, employment and the wage rates of high-skilled workers increase while the wage rates of low-skilled workers and return to capital decrease. Hence, an electricity tariff shock should likely contribute to an exacerbation in the level of inequalities in South Africa. As Table 6 shows, urban and rural households are affected differently by the electricity infrastructure expansion.

**Table 6: Welfare effects (% changes)**

Household	Disposable Income	Consumer Price Index	Equivalent Variation
Urban	0.1	-0.1	0.1
Rural	-0.1	-0.1	0
ALL	0	-0.1	0.1

Source: Compilation from electricity infrastructure shock using the CGE model for South Africa

Note: Variations computed as percent changes

In this respect, it is noticeable that consumption prices in real terms decrease for all households. In contrast, disposable income increases for urban households while it falls for rural households. However, the price reductions in real terms are more important so that the welfare effect as measured by the equivalent variation is positive for all households.

## 5. Conclusions and Recommendations

This paper has used two economy-wide modelling approaches to investigate the impact of various reforms on the economy. The following recommendations are made:

- 1: With electricity infrastructure expansion having positive impacts on output, sectoral production and household welfare in aggregate, it is recommended that the electricity generation sector receive additional funding from government to speed up the implementation of government energy policy as set out in the 1998 Energy Policy White Paper.
- 2: Government should work with the National Energy Regulator of South Africa to put in place a financing framework that deals effectively with electricity pricing. Such a framework should capture the scarcity of the resource in a pricing environment that reflects costs, efficiency, stability and eventually externalities.
- 3: Given that reforms in electricity pricing structure will, in essence, necessitate an increase in electricity prices, such higher electricity prices will adversely impact on poor households with access to electricity as well as raise the cost to government of extending basic access to electricity for poor households. As such, government will need to increase annual funding for the roll-out of services under the free basic electricity programme.

For greater efficiency of resource allocation, technological innovation and increased investment in renewable energy sources, government will need to increase funding resources set aside for such purposes and incentives with a view to establishing and implementing a framework that:

- 1: Encourages further new forms of renewable electricity generation technologies to enter the market, and expand opportunities to consumers to access such forms of energy
- 2: Allows non-utility developers equal market opportunity to enter distributed generation in competition with other providers.

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## Financing of Basic Education

Nomonde Madubula

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## Abstract

Ensuring equity in the financing of social services is one of the key mandates of the FFC. The FFC needs to take into account equity considerations before recommendations can be made on the horizontal division of nationally raised revenue. Hence this study focuses on two key areas, namely the funding nature of the re-ranking of schools and adequate funding for the no-fee schools policy within the context of the school funding norms. The main thrust is to investigate the appropriateness of the provision of minimum allocations or the funding allocations with regard to LSM (learner support material). The budget implications faced by the provinces in the re-ranking of schools as well as the adequate funding for the no-fee schools policy were also investigated.

Keywords: Re-ranking, no-fee schools, per learner amounts, school funding norms, national quintile



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## Abbreviations and Acronyms

nDoE	National Department of Education
nDoT	National Department of Transport
NQ	National Quintile
pDoT	Provincial Department of Transport
PED	Provincial Education Department
SASA	South African Schools Act
RTT	Resource Targeting Table
DoE	Department of Education
FFC	Financial and Fiscal Commission
LSM	Learner Support Material

## 1. Introduction

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This report continues the work of the FFC on basic education that was started in 2005<sup>1</sup>. The report is divided into three parts. The first part reports on progress of the re-ranking of schools using national quintiles, and analyses data from all nine provinces. The second part reports on progress pertaining to the no-fee schools policy. This is a follow-up on the FFC submission to the Division of Revenue 2008/09, which highlighted the fact that while the application of the no-fee schools policy was sound, there were some challenges that may impact on the implementation process. The third part of the report identifies some of these challenges and makes certain observations on possible ways in which they can be addressed.

## 2. Re-Ranking of Schools

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A key difference between the 1998 school funding norms and the 2007 amended school funding norms is that national quintiles (NQ) replace provincial quintiles. The outcome of the amended norms is that schools are ranked into five quintiles (NQ1 to NQ5) with NQ1 being the poorest and NQ5 the least poor. It is envisaged that the use of national quintiles will bring about equal levels of funding among poorer schools in the country. This is because the school funding norms (1998) required provincial education departments (PEDs) to rank schools according to the resource targeting table (RTT) and to target 60% of the financial resources at the poorest 40% of learners. The list contained all the schools in each province, ranked on the basis of their physical or poverty conditions and the relative poverty of the communities around the schools.

The amended school funding norms require the use of national instead of provincial quintiles to categorise schools in order to drive the pro-poor funding approach. The rationale for the use of national quintiles is to eliminate perceived disparities implied in the use of provincial quintiles. This report addresses the following questions:

- The financial implications (if any) of the shift from provincial to national ranking.
- Whether or not the national ranking does in fact eliminate provincial disparities in terms of equitable access to schooling by learners from poor communities.
- Whether or not all provinces are actually conforming to the use of the national ranking and its implementation.

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<sup>1</sup> See FFC Submission to the Division of Revenue 2006/07 and 2008/09

The school funding norms (1998) required provincial education departments (PEDs) to rank the schools according to the resource targeting table (RTT) and to target 60% of financial resources at the poorest 40% of learners. The list contained all the schools in each province ranked on the basis of the physical or poverty conditions of the schools and the relative poverty of the community around the school. The physical conditions included, among other things, learner:classroom ratio and the overall condition of the school. The relative poverty of the community around the school was based on the proportion of households with electricity and piped water in the community and the level of education of the parents served by the school. In the list, schools were ranked from the poorest to the least poor using five quintiles, i.e. quintile 1 to quintile 5 respectively.

**Table 1: Resource targeting table based on conditions of the school and poverty of the community**

School quintiles from poorest to least poor	Expenditure Allocation	Cumulative % of schools	Cumulative % of NPNC recurrent expenditure	Per learner expenditure indexed to average of 100
Poorest 20%	35%	20%	35%	175
Next 20%	25%	40%	60%	125
Next 20%	20%	60%	80%	100
Next 20%	15%	80%	95%	75
Least poor 20%	5%	100%	100%	25

Source: National School Funding Norms. DoE 2000

The RTT determined the per learner allocation expenditure with more funding distributed towards the poorest quintiles. Although this was the case, there were certain implications regarding the implementation of the school funding norms. The distribution of funds using the resource targeting list did not result in equity in resource allocations to the extent that was envisaged. There were wider provincial disparities in the per learner allocation which hit the poorest learners in the schools, thus reflecting mostly the differing socio-economic circumstances and conditions of the provinces. For example, the poorest 20% of learners in one province were not on the same level of poverty as the poorest 20% in another province, but they were treated as equal in the allocation of resources according to the resource targeting list.

Reschovsky and Imazeki (2000) argue that an important reason why school financing has generally done a poor job of financing schools is that in most cases the allocation of state funds to schools fails to recognise that the amount of money needed to provide students with an adequate education is not the same in each school district<sup>2</sup>. These results confirm the outcome of the implementation of the school funding norms where inequalities were significant between and within provinces. The RTT used by the provinces resulted in huge differences in per learner expenditures. This contradicted the purpose for which the school funding norms were established, i.e. pro-poor funding and redress.

One of the distinguishing features between the 1998 school funding norms and the 2007 amended school funding norms is that in the amended norms, national quintiles replace provincial quintiles. The outcome of the amended norms is that schools are ranked into five quintiles (NQ1 to NQ5) with NQ1 being the poorest and NQ5 the least poor. It is envisaged that the use of national quintiles will bring about equal levels of funding among poorer schools in the country.

Furthermore, the criteria that are used for allocating and distributing financial resources have been changed. The criteria now only consider the relative poverty of the community. This is based on the assumption that communities are best served by the schools closest to them. It also takes into account individual or household income/wealth and the level of literacy, using the targets table. Among other things, it has been established that using poverty conditions “creates perversions in the poverty targeting process<sup>3</sup>” thereby disadvantaging poor schools with new buildings. A case in point was in the Eastern Cape, where a school had been built and was in good condition in terms of facilities but had no textbooks and stationery for learners because the community around the school was very poor, and “parents hardly paid school fees<sup>4</sup>”.

Table 2 below shows the RTT that became effective in January 2007. Column A in the table follows the pro-poor funding approach. NQ1 should receive school allocations of 30% of funding, which is six times the amount received by NQ5 at 5%.

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<sup>2</sup> Reschovsky, A and Imazeki, J (2000). *Achieving Educational Adequacy through School Finance Reform*  
<sup>3</sup> Report by Doe (2003). *Improving Access to Free and Quality Basic Education for All*  
<sup>4</sup> FFC field study on provisioning of LSM 2004/05

Table 2: Targets table

Quintiles	A	B	C
NQ1	30.0%	R738	100%
NQ2	27.5%	R677	100%
NQ3	22.5%	R554	100%
NQ4	15.0%	R369	67%
NQ5	5.0%	R123	22%
Overall	100.0%	R492	89%
No-fee threshold		R554	

Source: Amended School Funding Norms. Government Gazette, August 2006

Column B indicates the per learner amount that is considered adequate in carrying out school functions, with inflationary increments every year. According to the table, the minimum amount to be allocated per learner is on NQ3 at R554. This amount is based on historical expenditures and budgets of PEDs. The FFC raised concerns about the determination of this amount of R554, and elsewhere in this report further work is described that the FFC has been carrying out in respect of identifying a more objective way of addressing this problem.

According to the amended school funding norms, since poverty is unevenly spread across the provinces, it is appropriate that a national poverty distribution table should be used to allocate funding to the provinces. The funds would be allocated according to the share of poorest learners. For example, according to the table, the Eastern Cape has the largest share of learners in Q1 at 34% compared to the Western Cape at 6.5%. This implies that in terms of resource allocation, the Eastern Cape would have to allocate a relatively higher amount to the poorer learners than the Western Cape.

Table 3: National poverty distribution table

National Quintiles						
	1	2	3	4	5	Total
EC	34.8%	21.6%	21%	11.6%	10.9%	100%
FS	30.8%	14.9%	20.1%	18.8%	15.4%	100%
GT	10.5%	11.4%	27.4%	27.2%	23.6%	100%
KZN	24.2%	18.8%	25.6%	17.3%	14.1%	100%
LIM	34.0%	22.3%	24.9%	11.6%	7.2%	100%
MP	16.7%	20.2%	29.8%	19.9%	13.5%	100%
NC	26.3%	17.7%	21.6%	14.8%	19.6%	100%
NW	22.7%	15.2%	30.5%	20.5%	11.0%	100%
WC	6.5%	8.0%	23.1%	27.7%	34.6%	100%
SA	20.0%	20.0%	20.0%	20.0%	20.0%	100%

Source: Amended school funding norms, published in Government Gazette August 2006

### 3. Provincial Analysis of the Re-ranking of Schools

The section attempts to determine the distributional and financial implications of applying the new national quintile ranking as opposed to the old provincial ranking system. This comparative assessment aims to determine the redistribution of both schools and learners between the five quintiles for the two ranking systems under investigation. The analysis is based on data from all nine provinces which provided complete resource targeting data sets. The data sets gave details of both the original and new national re-rankings. The list of schools in the data sets is based on the relative poverty of the community served by the schools, with further details ranging from school identity, learner enrolments, poverty score and allocation per learner.

The analysis indicated that schools and learners have indeed been affected by the re-ranking. The redistribution has resulted in the re-assignment of quintile classifications for schools in each province, and the degree of the impact differs per province. For example, for the majority of provinces there has been a significant increase in the percentage of shares of schools in NQ1 and NQ2, especially the rural provinces. Furthermore, for the majority of provinces there has been a significant decrease in the percentage shares of NQ5 schools.

The effect of the re-ranking on the learners is the same as on schools. There are significant increases in the percentage shares of learners in NQ1, and decreases in NQ4 and NQ5. Overall, there has been a spread of learners across the national quintiles. Therefore the increases in the share of the poorest quintiles for both schools and learners indicate that there would be financial implications for the school system. The main implication is that relatively more resources will have to be allocated to these schools, especially if the schools are in the no-fee category. Furthermore, the schools re-assigned to the least poor quintiles by implication will have relatively fewer resources targeted at them even though in practical terms no school should be disadvantaged as a result of the implementation of these funding norms.

## 4. Conclusion

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The application of the national re-ranking in provinces has resulted in a redistribution of learners and schools among the five quintiles which will have implications for funding allocations for schools as the school allocation is largely driven by the quintile position of the school and the number of learners enrolled. The ranking applies a uniform classification of schools and learners across all the provinces and ignores the fact that at a practical level, provinces are not homogenous.

## 5. Recommendations

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Government should review the method used to inform the national quintile ranking of schools. Rather than classifying schools according to the wards or neighbourhoods in which they are located, the method should take into account the socio-economic circumstances of the learners (with particular reference to inequality and poverty).



## 6. Adequate Funding with No-Fee Schools Policy

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The amended school funding norms state that the 'no-fee threshold' amount is to apply to 40% of the learners in NQ1 and NQ2. This means that those schools should not charge compulsory school fees. According to the national ranking, schools are re-ranked at a ratio of 1 to 5 starting from the poorest to the least poor schools. Hence NQ1 and NQ2 are the schools serving the poorest communities and as such are not to charge compulsory school fees. Section 81 of the amended school funding norms stipulates conditions that have to be adhered to in order for the schools to be declared no-fee schools as follows:

- A school has been placed in a national quintile that has been identified by the Minister
- A school receives the per learner allocations that is greater than or equal to the no-fee threshold.

The no-fee threshold amount is set at R554 as indicated in the targets table in Table 2 above. It is believed that the amount would be adequate for funding the poorest schools and for making quality schooling possible without the need for those schools identified to charge compulsory school fees. The FFC, in its submission to the National Department of Education in 2005 on the revised school funding norms, raised concerns around the determination of the amount. The issues raised were:

- Whether it would be appropriate to obtain empirical evidence to the effect that allocating a certain minimum amount would result in learners meeting certain minimum standards.
- Whether it would be appropriate to assume that the amount would apply to every school, given that South Africa is large and diverse, and that it is emerging from a history of inequality and is beset by regional cost disabilities.
- It is critical to know how the amounts were determined and what assumptions informed the determination.

## 7. Analysis of the No-Fee Schools Policy

Table 4 below shows the breakdown of schools in each province that should not charge compulsory school fees for 2007. According to the table, 40% of the learners in NQ1 and NQ2 have been identified as being in a no-fee school for 2007. For example, according to this table, Eastern Cape and Limpopo provinces have more than half of the learners (56%) in NQ1 and NQ2. This means that in those schools compulsory school fees should not be charged. For the Western Cape, the coverage of poorest learners for NQ1 and NQ2 is 15%. This table accordingly suggests more funding for NQ1 and NQ2 in the Eastern Cape, while in the Western Cape it means more funding pressures in other quintiles. It should be noted that the no-fee threshold is meant to cover non-personnel and non-capital costs (NPNC).

**Table 4: Breakdown of schools that should not charge compulsory school fees**

Province	Q1 %	Q2 %	Total percentages of learners in "No fee Schools" in 2007
EC	34,85	21,58	56,43
FS	30,83	14,90	45,73
GT	10,46	11,44	21,90
KZN	24,19	18,76	42,95
LIM	33,96	22,34	56,30
MP	16,68	20,17	36,85
NC	26,28	17,69	43,97
NW	22,70	15,24	37,94
WC	6,54	8,02	14,56
SA	20	20	40

Source: Amended School Funding Norms published in Government gazette, August 2006

Although this is the case, government recognises the fact that the no-fee threshold may not sufficiently cover all the resource needs. Hence as stated in Section 81 of the amended school funding norms: "revisions should occur on the basis of emerging research into the costs of schooling in different socio-economic contexts, changes in the socio-economic profile of the country and the overall budget of government." Section 96 states that annually, the

Minister should determine those quintiles where schools may not implement school fees. By reviewing the no-fee schools policy annually, the implication is that there could be changes to the current breakdown of the no-fee schools. A no-fee school can change its quintile and find itself in a position where it could charge school fees in any one year. It is thus important that provinces put measures in place to ensure that the objectives of the policy are not compromised by these changes. In addition, the process should be transparent so that all the targeted beneficiaries are made aware of it and their responsibilities.

Section 100 of the amended school funding norms states that if a no fee school does not receive a school allocation that is at least as high as the no-fee threshold, then the school may charge school fees up to an amount equal to the difference between the no-fee threshold and the school allocation actually received. It is not clear whether there are contingency measures in place and whether PEDs have resources in place to monitor the system in order to make sure that schools adhere to the policies.

In its submission to the Department of Education (2005), the FFC commented that in the light of the high poverty levels, it is possible that the emergence of the strictly no-fee schools may result in unintended consequences. For example, communities may be tempted to send their children to schools where there is a prohibition on school fees even though they can in fact afford to pay school fees. Hence it is important to take into account some of these potential spill-overs in the implementation process, the following have been observed in this regard:

- In some instances it has created perverse incentives, in the sense that some schools, especially in poorer areas that are not regarded as no-fee schools, are lobbying to become no-fee schools as some benefits accrue as a result of a school being declared a no-fee school. For example, schools that are declared no-fee schools are supposed to benefit from the nutrition programme.
- Some provinces submit the total percentage of learners to be at no-fee schools for the following year above the stipulated percentage (above the 40% required). This is an indication that there are still needy learners who are supposed to be at no-fee schools who are not covered.
- There are no contingency measures in place to deal with the no-fee schools implementation process, for example, monitoring to make sure that schools receive the funds due to them on time. Further funds are transferred to schools without anyone assessing their capacity to spend, so some schools do not spend the funds.
- In terms of the allocation of the no-fee school, some provinces are not even meeting the target amount as stipulated.

The annual review process of the no-fee school indicates changes to the current breakdown and changes in quintiles. By reviewing the no-fee schools policy annually, there could be changes to the current breakdown such that a no-fee school could find itself in a position where its ranking has changed.

## 8. Conclusion and Observations

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According to the assessment of this study, the purpose of the application of the no-fee schools policy to schools that serve poorer learners is sound, but there are some challenges that need to be addressed to ensure that purpose of the policy is fulfilled. Would the amount of funding for the no-fee schools be adequate for the needs of the schools identified, given that it would be the only source of funding for those schools? While conditions for the application of a no-fee school are clear in the policy, there are also sections in the policy that state that schools may charge school fees if the allocation received is less than the stipulated amount.

Some of the issues mentioned above raise the concern that funding intended for deserving schools may not be granted or is not guaranteed. Secondly, the contingency plan of allowing schools to charge school fees if the amount they receive is less is not addressed and this can create inconsistencies in the system. Furthermore, the annual review of the no-fee schools policy must be treated with caution so that it does not create perverse incentives for a school to change from being a no-fee school to one that charges school fees.

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## Appendix 1

The table below is from the RTT which outlines how the schools in each province ranked using the poverty of the community around the school. A desktop analysis was done of the data collected for both the old and new ranking.

Eastern Cape						
Schools	Q1	Q2	Q3	Q4	Q5	Total
% of schools	19.5%	21.5%	24.7%	23.0%	11.3%	100.0%
Old Prov Ranking	1 155	1 270	1,460	1,363	670	5,918
Gain/Loss	919	294	-129	-796	-288	
New Nat Ranking	2 074	1 564	1 331	567	382	5 918
% of schools	35.0%	26.4%	22.5%	9.6%	6.5%	100.0%
Learners	Q1	Q2	Q3	Q4	Q5	Total
% of Learners	20.2%	19.8%	20.0%	19.9%	20.0%	
Old Prov Ranking	426,743	418,340	421,376	419,519	422,562	2,108,540
Gain/Loss	303,810	35,374	18,844	-166,514	-194,847	-3,333
New Nat Ranking	730,553	453,714	440,220	253,005	227,715	2,105,207
% of Learners	34.7%	21.6%	20.9%	12.0%	10.8%	100.0%

Gauteng						
Schools	Q1	Q2	Q3	Q4	Q5	Total
% of schools	19.2%	20.6%	20.2%	20.3%	19.7%	100.0%
Old Prov Ranking	357	382	375	378	366	1,858
Gain/Loss	-5	8	-7	1	-3	
	352	390	368	379	363	1,852
% of schools	19.0%	21.1%	19.9%	20.5%	19.6%	100.0%
Learners	Q1	Q2	Q3	Q4	Q5	Total
% of Learners	19.8%	20.0%	20.0%	20.2%	20.0%	100.0%
Old Prov Ranking	314,538	316,315	316,817	319,635	317,613	1,584,918
Gain/Loss	5,124	10,261	3,230	1,986	3,890	
New Nat Ranking	319,662	326,576	320,047	321,621	321,503	1,609,409
% of Learners	19.9%	20.3%	19.9%	20.0%	20.0%	100.0%

Free State						
Schools	Q1	Q2	Q3	Q4	Q5	Total
% of schools	43.2%	18.0%	15.0%	11.6%	12.2%	100.0%
Old Prov Ranking	793	331	275	213	223	1,835
Gain/Loss	443	-157	-125	-65	-96	
New Nat Ranking	1236	174	150	148	127	1,835
% of schools	67.4%	9.5%	8.2%	8.1%	6.9%	100.0%
Learners	Q1	Q2	Q3	Q4	Q5	Total
% of Learners	18.8%					
Old Prov Ranking	122623	130959	132604	134644	132341	653,171
Gain/Loss	100,842	775	-26,903	-21,222	-47,887	
New Nat Ranking	223,465	131,734	105,701	113,422	84,454	658,776
% of Learners	33.9%	20.0%	16.0%	17.2%	12.8%	100.0%



North West						
Schools	Q1	Q2	Q3	Q4	Q5	Total
% of schools	24.4%	19.1%	19.9%	18.6%	18.0%	100.0%
Old Prov Ranking	535	419	435	407	395	2,191
Gain/Loss	58	-99	212	-20	-151	
New Nat Ranking	593	320	647	387	244	2,191
% of schools	27.1%	14.6%	29.5%	17.7%	11.1%	100.0%
Learners	Q1	Q2	Q3	Q4	Q5	Total
% of Learners	25.4%	18.7%	20.0%	17.2%	18.7%	100.0%
Old Prov Ranking	226,123	165,782	177,383	153,033	166,224	888,545
Gain/Loss	-25,307	-30,172	93,054	28,695	-66,755	
New Nat Ranking	200,816	135,610	270,437	181,728	99,469	888,060
% of Learners	22.6%	15.3%	30.5%	20.5%	11.2%	100.0%

Northern Cape						
Schools	Q1	Q2	Q3	Q4	Q5	Total
% of schools	31.1%	19.6%	17.0%	12.7%	19.6%	100.0%
Old Prov Ranking	130	82	71	53	82	418
Gain/Loss	23	-7	-5	-3	-7	
New Nat Ranking	153	75	66	50	75	419
% of schools	36.5%	17.9%	15.8%	11.9%	17.9%	100.0%
Learners	Q1	Q2	Q3	Q4	Q5	Total
% of Learners	19.8%	19.6%	20.3%	19.7%	20.6%	100.0%
Old Prov Ranking	39,783	39,309	40,864	39,496	41,366	200,818
Gain/Loss	12,364	-2,879	-1,880	-4,885	-3,798	
New Nat Ranking	52,147	36,430	38,984	34,611	37,568	199,740
% of Learners	26.1%	18.2%	19.5%	17.3%	18.8%	100.0%

KwaZulu-Natal						
Schools	Q1	Q2	Q3	Q4	Q5	Total
% of schools	23.1%	24.6%	22.7%	16.8%	12.8%	100.0%
Old Prov Ranking	1,307	1,394	1,283	949	725	5,658
Gain/Loss	412	-139	155	-279	-149	
New Nat Ranking	1719	1255	1438	670	576	5,658
% of schools	30.4%	22.2%	25.4%	11.8%	10.2%	100.0%
Learners	Q1	Q2	Q3	Q4	Q5	Total
% of Learners	18.1%	20.4%	21.4%	21.6%	18.5%	100.0%
Old Prov Ranking	471,867	531,561	556,119	563,025	481,085	2,603,657
Gain/Loss	144,426	-52,547	95,992	-122,185	-121,437	
New Nat Ranking	616,293	479,014	652,111	440,840	359,648	2,547,906
% of Learners	24.2%	18.8%	25.6%	17.3%	14.1%	100.0%
Own calculations from Resource Targeting List data sets						

From the above table, a province-specific analysis was conducted:

### **North West**

The old provincial quintile ranking of schools classified the majority of schools as quintile one, which is the poorest of all quintiles. This represents 24% of the schools in the province. The remaining schools were evenly distributed across the other quintiles. The new national ranking method classified the majority of schools in the province into quintile 3. Despite schools shifting significantly to quintile 3, the poorest quintile one schools have grown by 11%. This increase in the number of schools to quintiles 1 and 3 may be attributed to decreases observed in quintiles 2, 4 and 5. The shifting of schools towards quintile 1 may be an indication that some schools were incorrectly classified in the old provincial ranking. The new national methodology treats and ranks all schools across the country the same way.

The shifting of schools has affected the distribution of learners across the five quintiles. The old ranking system had about 25% of learners in the province classified in the poorest quintile schools. The remaining learners were evenly distributed across other quintiles. However, the new national ranking indicates that 31% of learners are in quintile 3 schools, while 23% are in quintile 1 schools. The proportion of quintile one learners has declined, whereas the proportion of learners in quintile three schools has grown significantly. This is due to decreases in learners in quintiles 2 and 5 schools.

For the province, this shift of schools and learners presents a challenge, especially for schools that moved from relatively poor quintiles to well-off quintiles. This means that the allocation per learner drops for the affected schools. Whether the re-ranking is a true reflection of the school concerned is another challenge for the province. Schools that stand to gain are those that were ranked in the least poor quintiles, but are now classified as relatively poor. However, whether the funding would be adequate to accommodate those learners is a challenge.

### **Free State**

Both the provincial and new national ranking methods placed the majority of schools in the province in the poorest quintile, which is quintile 1. In the old provincial ranking, 43% of the schools were in quintile 1, while the other schools were spread across the remaining four quintiles. With the national ranking, the percentage of schools in quintile 1 has increased significantly to 67%. This is shown by a significant reduction in the number of schools in the other quintiles.

The movement of schools across quintiles has affected the distribution of learners between the five quintiles in the province. In the old provincial ranking, learners were slightly equally distributed across all the quintiles, despite the concentration of most schools in quintile 1. With the new national ranking, the majority of the learners were concentrated in quintile 1, and as a result, quintile 1 schools have the highest number of learners of all quintiles. Quintile 5 schools lost the highest number of learners to other quintiles. This may indicate that there were schools that were previously categorised as being well off, but they are actually poor, and that in turn affected the distribution of learners. The data for the province indicates that both schools and learners shifted towards the poor quintile 1. Both ranking methods yielded similar results, and this will result in huge financial pressure on the province because most schools were previously regarded as well off while they are poor. This will mean a huge increase in budgets since poor quintiles are allocated more per learner than the least poor quintiles.

NB: Are provinces conforming to the new ranking? What are the challenges? What are the implementation problems?

### **Gauteng**

According to both the provincial and national rankings, schools in Gauteng are slightly equally distributed across the five quintiles at an average of 20% per quintile. Changes in the number of schools within quintiles are largely attributed to either closing or building of schools in the province rather than a responsive shift to the amended norms. Some schools closed while new ones were built in the province.

A similar pattern of distribution is observed with regard to the shifting of learners between quintiles. The average percentage of learners per quintile is around 20%, which indicates a fair distribution of learners between quintiles in the province. In absolute terms, the least poor quintile schools have higher learner enrolments than the relatively poor quintiles.

Gauteng Province is predominantly urban and one would expect a fair distribution of both schools and learners across quintiles. Only four schools in the province were moved from a poorer quintile to a least poor quintile. Since the movement of both schools and learners is minimal, the funding implications would not be highly significant as in poorer provinces.

## Eastern Cape

The old provincial ranking in Eastern Cape Province classified most of the schools in quintiles 3 and 4, but with a significant number of schools in the poorest quintile 1. Quintile 5 had the least number of schools and this could be attributed to the rural nature of the province. The new national ranking classifies the majority of schools in the two poorest quintiles 1 and 2. About 35% of the schools in the province are in quintile 1, while 26% are in quintile 2. Schools have been shifted from least poor quintiles, namely which 5, 4 and 3. The shifting of these schools is largely attributed to some schools not being ranked correctly - they were classified as well off, but they actually belong to the first two poorest quintiles.

There was a fair spread of learners between the five quintiles in the old provincial ranking, averaging around 20% in percentage terms. However, in nominal terms, the majority of learners were concentrated in the poorest quintile, which represents 3% of the learners in the province. Quintiles 5 and 4 dropped significantly in number of learners respectively.

## Northern Cape

The majority of schools in the province are classified as quintile 1 in both the old provincial and the national ranking system. The old provincial ranking classified 31% of schools in the poorest quintile 1, while the percentage increased with the national ranking to 37%. It should further be noted, however, that the province has a significant number of schools that are in quintile 5 compared to other provinces. In both ranking methods, the number of schools in quintile 5 was higher than schools in quintiles 2, 3 and 4.

Learners in the province were concentrated in the least poor quintile 5 as per the provincial ranking. This represents 21% of learners in the province in quintile 5 schools. However, with the national ranking, the majority of learners are in the poorest quintile 1, which represents 26% of learners in the province. There has been a significant reduction in the number of learners from the other four quintiles, with quintiles 4 and 5 being largely affected.

## KwaZulu-Natal

The majority of schools in the province were classified as quintile 1 and 2, with quintile 2 having 25% and quintile 1 having 23% of schools. However, the national ranking places the majority of schools in the poorest quintile 1 at 30%, followed by quintile 3 with 25% of schools in the province.

The old provincial ranking placed majority of learners in quintiles 3 and 4. With the new national ranking, the majority of learners are concentrated in quintile 1 schools. This represents 24% of the total number of learners in the province. Quintile 5 and 4 schools have lost a significant number of learners to quintile 1 schools.

### **The Effect on Schools**

The implementation of the amended national norms has resulted in re-assignment of quintile classifications for schools in each province. However, the impact differs from province to province. Except for Gauteng and the Western Cape, the majority of the provinces have seen a significant increase in the percentage shares of schools in quintiles 1 and 2. There have also been significant decreases in the percentage shares of quintile 5 schools, which has been observed in the majority of provinces. From the observations, it is evident that the two extreme quintiles, namely quintiles 1 and 5, are highly affected in terms of schools' distribution between the five quintiles.

### **The Effect on Learners**

The spread of learners between the quintiles has also been affected by the implementation of the national quintiles. As is the case with the schools, the impact differs from province to province. Provinces such as the Eastern Cape, Free State, Northern Cape and KwaZulu-Natal displayed a similar trend with respect to the percentage share of learners between quintiles. The data indicate a significant increase in the percentage shares of learners for quintile 1 and a significant decrease for quintiles 4 and 5.

Overall, the spread of schools and learners in provinces shows similar trends. Increases in percentage shares of schools and learners for quintile 1 were observed, whereas at the other end, decreases in quintiles 4 and 5 were observed. In the majority of provinces where this trend was observed, the provinces were rural or had significant proportions of rural areas. In provinces such as Gauteng and Western Cape, which are urban in nature, a different trend was observed. In largely rural areas, a movement towards poorer quintiles was observed, while in urban provinces a movement towards least poor quintiles was observed. This indicates a need to take into consideration the provincial disparities in the urban-rural divide when funds are allocated to schools. However, the increases in share of the poorest quintiles and learners indicate that it will have an impact on the school funding system. Where schools move to the poorest quintiles, it means allocation of more funding to those schools, especially if they fall into the category of no-fee schools.

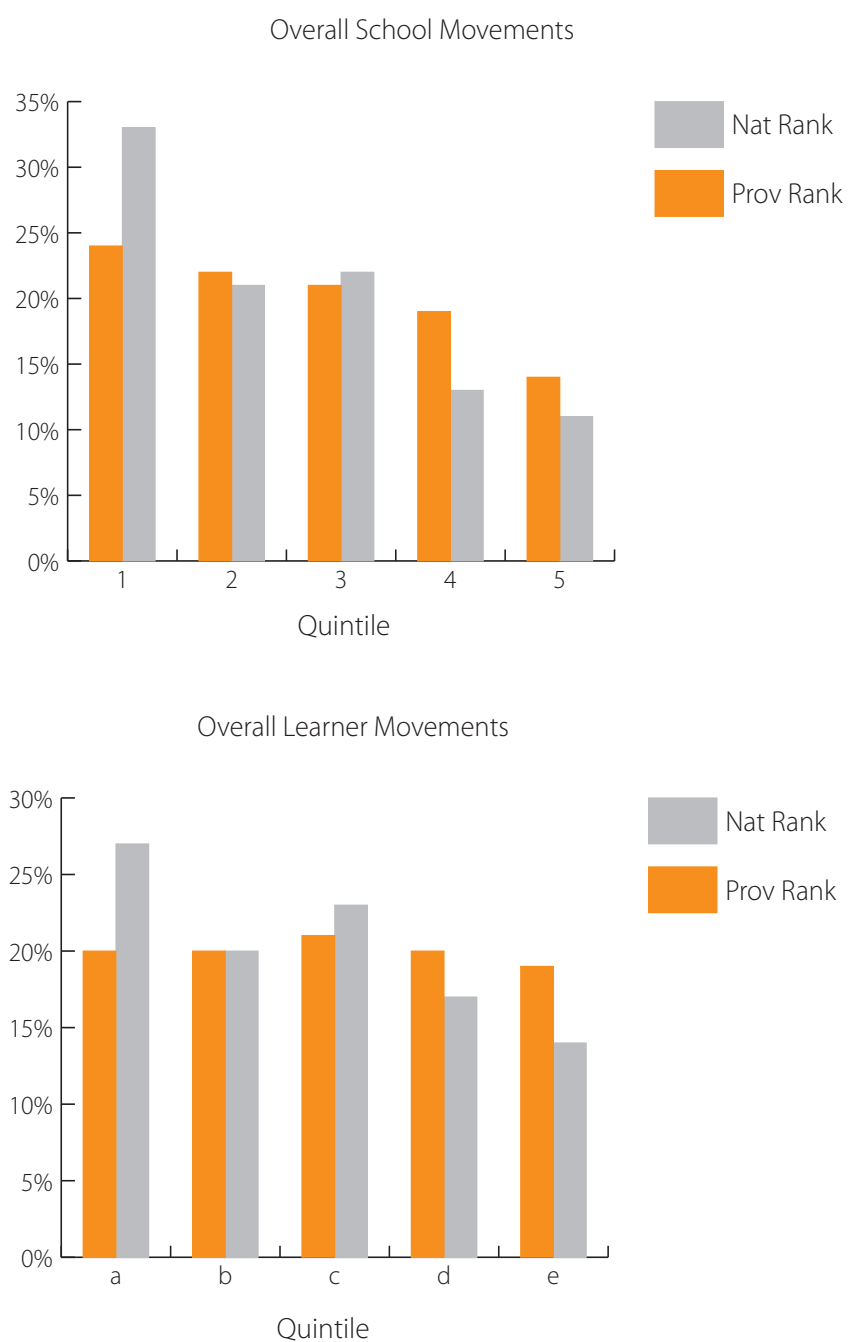


Figure 1: Overall school and learner distribution



According to the target table, schools in quintile 1 should get 30% of the total education funding, while quintile 5 schools should get 5%. Further to that are the differing per learner allocations for each quintile, with quintile 1 allocating R703 and quintile 5 allocating R235 per learner. Therefore the reclassification will have a financial impact on school funding.

The amended norms assume a national rank across the provinces, thereby classifying all schools across the country similarly and applying a uniform methodology. However, as the provinces are not homogeneous, it would not be correct to assume that a quintile 1 school in the Western Cape will be the same as a quintile 1 school in Limpopo. It is therefore important that for the national re-ranking to work effectively, provinces should be able to re-rank their schools correctly, otherwise the purpose of the re-ranking of schools would be defeated.



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## Institutional Bottlenecks Hampering Housing Delivery in South Africa

Sabelo Mtantato

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## Abstract

Although the delivery of housing in South Africa has come a long way since 1994, it is a growing challenge. Housing delivery is being carried out at the same time as a vast number of other challenges are being met, such as urbanisation, increasing unemployment, the increase in the HIV/Aids epidemic and an increase in population among other things. This paper focuses on the institutional bottlenecks affecting the speed and efficiency of the delivery of houses and the progress made in the accreditation of municipalities.

Keywords: Bottlenecks, housing delivery, accreditation

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The author gratefully acknowledges the support and inputs from the Commissioners of the Financial and Fiscal Commission, the programme managers and other colleagues. Stakeholders engaged include the Department of Housing, the Tshwane municipality and other public entities such as the National Housing Finance Corporation Ltd and Thubelisha.

## Abbreviations and Acronyms

DoRB	Division of Revenue Bill
DoRA	Division of Revenue Act
FFC	Financial and Fiscal Commission
IDPs	Integrated Development Plans
IHSDG	Integrated Housing and Human Settlement Development Grant
LES	Local Government Equitable Share
MEC	Member of the Executive Council
MIG	Municipal Infrastructure Grant
MINMEC	A forum consisting of the Minister of Housing and nine Members of the Executive Council for housing from the nine provinces
MTEF	Medium Term Expenditure Framework
nDoH	National Department of Housing
pDoH	Provincial Department of Housing

## 1. Introduction and Methodology

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The Financial and Fiscal Commission (FFC) in its annual submission to the 2006/07 Division of Revenue<sup>1</sup> made a number of recommendations relating to housing delivery. These recommendations included a proposal that government should address housing delivery bottlenecks in the provinces and that municipalities with capacity be accredited to administer housing programmes. The government supported these recommendations. This report examines the institutional bottlenecks hampering the delivery of housing and the extent to which municipalities with capacity have been accredited (progress in the accreditation of municipalities). The report examines the extent to which municipalities have been accredited, including the levels of accreditation.

To achieve the objectives of the paper, the current housing funding system was analysed. This paper closely examines how the Integrated Housing and Human Settlement Development Grant (IHSDG) is transferred between the spheres of government. It also examines the process of accreditation of municipalities and the progress made. Information on the accreditation process and the progress made was obtained from the National Department of Housing (nDoH).

## 2. The Need for Housing in South Africa

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The need for housing in South Africa emanated from the past policies of the apartheid regime, urbanisation and other factors, including HIV/AIDS and unemployment. Each category is briefly discussed below.

The democratic government of South Africa inherited a critical housing backlog from the previous government. During apartheid, the government implemented a policy of resettlement which was used to force people to move to their designated group areas. In most cases people were moved to locations far from cities with economic activities and opportunities.

There was also a deliberate policy under apartheid which prevented the building of low-income housing which was done to discourage urbanisation.

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<sup>1</sup> *Financial and Fiscal Commission, 2005 Annual Submission.*



This is one of the reasons why the demand for housing in the major cities is outstripping supply, especially for the poor or low-income group post-apartheid (Children's Institute, 2005).

Urbanisation contributes to the need for more housing, especially in the major cities, and is mainly caused by people leaving rural communities in search of economic opportunities in the cities. Cities fail to keep up with the demand for more houses and in some cases people cannot afford either to rent or buy houses and resort to informal settlements. In October 2006, the press reported that the housing backlog in South Africa had widened due to growing urbanisation and that the urban populations had been growing at a rate of 2.7% per year<sup>2</sup>.

Apart from the legacy of apartheid and its segregation policies, and the increase in urbanisation, housing delivery should be carried out bearing in mind the growing population, the increasing and high level of unemployment in the formal sector, and the ever-increasing challenges of HIV/Aids which attacks mostly the economically active population. According to a report by the nDoH (2003) concerning HIV/AIDS, it was revealed that almost 4.9% of households were child-headed households. The study further estimated that there will be approximately 1.2 million orphans by 2010. The biggest problems with orphans are expected in KwaZulu-Natal Province, with approximately 622 555 by 2010, and in Gauteng Province, with an expected 418 979 orphans. These households will definitely be more vulnerable and could eventually be homeless.

High unemployment in the formal sector is also a challenge as it has a negative effect on the demand for housing and investment in housing. Even though some people are employed in the formal sector, they are unable to get housing finance from commercial banks because of the level of their salaries. Therefore high unemployment and people earning low salaries also puts an increased burden on government's housing delivery efforts.

Given these conditions, the government of South Africa has a mammoth task ahead as it has to deliver houses at an accelerated pace in order to provide shelter for the needy who cannot afford to purchase their own houses. The government also has to ensure the delivery of sustainable human settlements that will give individuals access to economic opportunities as well as the necessary social facilities such as health and education facilities. Furthermore, housing should be provided with enough space for a typical-sized South African household and should have basic services such as water, sanitation and electricity.

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2 *"Housing backlog increases despite new homes." Sapa AFP, 18 October 2006. Accessed from the Internet on 14 January 2008*

### 3. Legislative Framework

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The Housing Act of 1997 spells out the principles applicable to housing development across all spheres of government and further defines the functions of national, provincial and local government in the delivery and development of housing. According to Section 26(1) of the Constitution of the Republic of South Africa of 1996, everyone has a right to adequate housing<sup>3</sup>. Section 26(2) of the Constitution takes this further and commits the state to take reasonable legislative and other measures within its available resources to achieve the progressive realisation of this right. Furthermore, people are protected by Section 26(3) of the Constitution from being evicted from their homes and from demolition of their homes without a court order.

According to Schedule 4, Part A of the Constitution, housing is a concurrent function between the national and provincial government spheres, and Schedule 4, Part B of the Constitution provides for municipal competence over functions associated with housing development such as municipal planning, water and sanitation services (limited to potable water supply systems, domestic waste water and sewage disposal systems and storm water management systems in built-up areas).

According to Section 156 of the Constitution, a municipality has executive authority in respect of, and the right to administer local government matters as listed in Schedule 4, Part B and Schedule 5, Part B, and any other matter assigned to it by national or provincial legislation. Schedule 156 (4) (a) and (b) provide for the national and provincial governments to assign to a municipality, by agreement and subject to any conditions, the administration of a matter listed in Schedule 4, Part A or Schedule 5, Part A, which necessarily relates to local government if the matter were effectively administered locally, and if the municipality has the capacity to administer it.

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3      *The Constitution of the Republic of South Africa, 1996*

## 4. Roles and Functions of Different Spheres of Government

The national government, provincial governments and municipalities play specific roles in the national housing development and the delivery of housing process. The functions of the national government are to:<sup>4</sup>

- Establish and facilitate a sustainable housing development process in consultation with the nine Members of the Executive Council (MECs) for housing and the organised local government
- Determine national policy and norms and standards in respect of housing development
- Set broad national housing delivery goals
- Facilitate the setting of provincial as well as municipal delivery goals where appropriate
- Monitor performance against delivery goals
- Provide assistance to provinces to develop their administration capacities
- Support and strengthen capacity of municipalities
- Promote consultations on matters regarding housing development between national government and other stakeholders
- Promote effective communication in respect of housing development.

The primary role of the provincial government is to facilitate and promote the provision of adequate housing within the province and within the framework of national policy. Its functions include:

- Determination of provincial policy in respect of housing development
- Promoting the adoption of provincial legislation to ensure effective housing delivery
- Co-ordinating housing development within the province
- Strengthening and supporting capacity of municipalities

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<sup>4</sup> *South African Housing Act, No.107 of 1997*

- Taking the necessary steps to ensure that municipalities perform their duties imposed on them by the Housing Act (No. 107 of 1997) and taking the necessary steps if they fail to do so
- Preparing and maintaining a multi-year plan in respect of the execution in the province of every national housing programme and every provincial programme; these should be consistent with national housing policy and national housing delivery goals
- Assessing applications for accreditation of municipalities and monitoring the performance of accredited municipalities
- Providing mechanisms to maintain oversight over all provincial executive organs and ensuring that they are accountable to the legislation.

All municipalities have a responsibility to ensure that all reasonable and necessary steps are taken through the process of integrated development planning and within the framework of national and provincial housing legislation and policy to ensure the realisation of a right to access to adequate housing. In fulfilling this mandate the municipality performs the following functions:

- Preventing or removing conditions which are not conducive to the health and safety of the inhabitants in the area of its jurisdiction
- Ensuring the economical provision of services such as water, sanitation, electricity, roads, storm water drainage and transport
- Setting housing delivery goals in the area of jurisdiction
- Identifying and designating land for housing development
- Creating and maintaining a public environment conducive to housing development
- Promoting the resolution of conflicts in the housing development process
- Planning and managing land use and development.

## 5. Funding for Housing

6

### Integrated Housing and Human Settlement Development Grant

Housing for the poor to a large extent is financed from the Integrated Housing and Human Settlement Development Grant (IHHSDDG). In the 2005/06 financial year the nDoH administered two grants, namely the Human Settlement Development Grant and the Integrated Housing and Human Settlement Development Grant. However, from April 2006 these two grants were merged into one grant which is now the IHHSDDG.

Some of the municipalities, especially smaller and poor municipalities, do not have the ability to raise substantial own revenue from taxes and municipal rates. Even though some, especially the metros, can raise revenue from taxes and municipal rates, competing needs make it difficult for them to obtain sufficient revenue for the provision of housing. These two reasons contribute to the dependency of municipalities on the IHHSDDG for the delivery of housing, especially for the low-income groups. The IHHSDDG flows from the nDoH to pDoHs and then to municipalities or private developers. The nDoH uses a formula to allocate the IHHSDDG to the provinces and the provincial departments of housing transfer the IHHSDDG to municipalities or to private developers. Generally, the IHHSDDG was established to:

- finance the implementation of the National Housing Programme
- facilitate the establishment and maintenance of habitable, sustainable and stable human settlements
- eradicate informal settlements<sup>5</sup>.

The IHHSDDG could therefore be used for the following:

- Land acquisitions
- Internal infrastructure such as roads, water and sewage connections, etc.
- Development of the housing chapters of the Integrated Development Plans (IDPs)
- Housing for qualifying beneficiaries.
- Allocations of the IHHSDDG to various provinces from 2003 to 2009 are shown in Table 1 below.

5 Department of Housing Annual Report 2006-2007

**Table 1: IHSDG real allocations from 2003-2009 (based on 2006 prices) in R'000<sup>6</sup>.**

Prov	2003	2004	2005	2006	2007	2008	2009
EC	1,136,650	674,402	636,020	761,994	1,003,388	1,135,792	1,273,775
FS	400,872	605,791	515,292	528,629	622,777	701,267	767,556
GP	1,163,791	1,267,835	1,048,191	1,121,057	2,094,588	2,342,3	2,544,415
KZN	1,078,506	915,627	853,965	1,048,376	1,249,337	1,430,465	1,593,901
LIM	508,202	435,243	500,667	521,331	621,263	711,105	792,083
MP	330,868	342,147	281,840	421,002	501,703	571,256	632,794
NC	127,946	107,446	87,005	104,774	124,858	146,454	167,283
NW	414,886	586,112	489,887	697,419	730,988	813,565	879,087
WC	492,069	648,878	558,329	998,143	904,240	1,093,090	1,262,711

Source: National Treasury Database. EC- Eastern Cape, FS – Free State, GP – Gauteng, KZN – KwaZulu-Natal, LIM – Limpopo, MP – Mpumalanga, NC – Northern Cape, NW – North West and WC –Western Cape

Table 1 shows that IHSDG allocation for all nine provinces has been increasing over these years. However, there was consistent under-spending on the IHSDG in most provinces over the years 2003, 2004 and 2005 which exceeded 51% in some provinces<sup>7</sup>.

### **Municipal Infrastructure Grant**

The Municipal Infrastructure Grant (MIG) is an uncommitted grant to municipalities aimed at increasing their capital budget to provide municipal infrastructure particularly in poor areas. This grant aims to assist municipalities by enabling them to implement their capital programmes as identified in their IDPs. The MIG is not project specific but was established primarily for the provision of bulk infrastructure. However, it can also be used to renovate existing municipal infrastructure. The MIG fund can also be used to promote integrated spatial and economic planning and development and complement the national housing programme through the provision of municipal infrastructure.

<sup>6</sup>

<sup>7</sup>

*National Treasury's Database.*

*For a complete picture of under/over-spending per province over these years see Table 4 in FFC technical paper - Public Housing in South Africa: A review of performance 2003-2009.*

The overall MIG allocations from 2003 to 2009 are shown in Table 2 below.

**Table 2: MIG allocations from 2003-2009**

R million	2003	2004	2005	2006	2007	2008	2009
MIG	2 442	4 481	5 436	6 756	7 549	8 053	9 130

Source: National Treasury: 2007 Budget and Review

### Local Government Equitable Share and Own Revenue

Over and above the IHSDG that the municipalities receive from the nDoH through Provincial Departments of Housing (pDoH), they also receive funds through the Local Government Equitable Share (LES). The municipalities also raise their own revenue. However, the ability of municipalities to raise their own revenue differs from municipality to municipality. Although municipalities are expected to supplement the housing grant with their own revenue, some poor municipalities are unable to raise own revenue and they are dependent on the IHSDG and the Local Government Equitable Share for the delivery of housing.

The overall Local Government Equitable Share from 2003 to 2009 is given in Table 3 below.

**Table 3: Local government equitable share allocations from 2003-2009**

R million	2003	2004	2005	2006	2007	2008	2009
LES	6 350	7 678	9 643	18 058	20 676	23 775	29 444

Source: National Treasury: 2007 Budget and Review

## 6. Institutional Bottlenecks Hampering Speed and Efficiency of Housing Delivery

---

The institutional bottlenecks hampering the speed and efficiency of the delivery of housing emanate from within the processes involved in the administration and transfer of the IHHSDG and the different spheres that are responsible for planning (municipalities) and allocation of subsidies (provinces). Furthermore, the process of accreditation of municipalities also affects the speed of housing delivery. Other bottlenecks affect the speed of housing delivery and efficiency, such as an increase in the cost of building material and an increase in inflation and interest rates. These will also be briefly discussed.

### Institutional Bottlenecks within the Spheres of Government

#### **a) The flow of the Integrated Housing and Human Settlement Development Conditional Grant**

Provinces channel the IHHSDG or subsidies, whereas municipalities are responsible for planning. This fragmentation has resulted in the following:

- Slowing down of housing delivery.
- Allocations are determined at the higher levels of the provincial sphere, whereas planning is done at the municipal level.
- Delays in the announcement of decisions on maximum subsidy that a municipality will receive.
- Difficulties for municipalities to plan and budget since allocations are not communicated timeously.
- Subsequent delays in transfers cause cash flow problems for municipalities.

The current institutional structure is bureaucratic. It creates some problems for the municipalities, hampers the process of housing delivery and leads to inefficiencies.



## b) Location of housing function

It has been mentioned that municipalities are responsible for all decisions around infrastructure and housing planning and development. In principle the appropriate location of the housing function would seem to be the local government sphere, therefore the location of the housing function in any other sphere of government other than local government will create problems in the system. The Housing Act of 1997 and the Division of Revenue Act of 2005-2007<sup>8</sup> requires provincial housing departments to accredit municipalities with capacity. Furthermore, the Minister of Housing's Cabinet-endorsed plan to expand the responsibilities of municipalities to take up the housing function in 2005 (via the process of accreditation) was aimed at leveraging the potential advantages of decentralisation – that is, increasing the efficiency of delivery by devolving the responsibility to the lowest possible level. Legislation also provides for the devolution of a function to local government if the function could be effectively administered locally, and if the municipality has the capacity to administer it. Devolution of the housing function to municipalities in this case is necessary which is in the form of accreditation. The devolution of the housing function to the municipalities or metros with capacity would result in the following benefits:

- It would enable the municipalities to have integrated planning linking the housing delivery planning function with other built environment plans such as roads, water, sanitation, etc.
- It would enhance improvement in the planning process for municipalities, setting of targets and delivery goals in line with their IDPs.
- Efficiency would be improved by removing bureaucratic inefficiencies and delays would be reduced in the transfers of subsidies from provinces.
- It would make business plans of municipalities meaningful and set more realistic targets.
- It would improve accountability which would rest with the local governments.

## c) Accreditation process

The Housing Act and the Division of Revenue Act (DORA) of 2007 allow the pDoH to accredit municipalities

Accreditation has three levels as shown in Table 4:

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8 *Division of Revenue Act of 2005, 2006 and 2007.*

**Table 4: Levels of accreditation**

Level	Description
1	Deals with beneficiary management, subsidy budget planning and allocation and priority programme management and administration.
2	Relates to full programme management and administration of all housing programmes.
3	Allows municipality to undertake financial administration.

Source: National Department of Housing.

A fully accredited municipality would be able to administer any national housing programme within its jurisdiction. Accreditation of a municipality empowers that municipality to receive, evaluate and approve or reject applications for subsidies<sup>9</sup>. Accredited municipalities would also be able to receive their transfers directly from the national government and would be able to administer and account for the grant.

The process of accreditation consists of various stages. In all there are nine stages that should be followed before full accreditation is granted to a municipality. These stages are summarised in Table 5.

Table 5: Different stages in the accreditation process

Step	Description
Step 1	Identification of municipalities to be accredited in the province by MECs and municipalities.
Step 2	Municipalities apply for a particular level of accreditation. Municipalities should also identify their pre-accreditation capacity needs in order to formulate an accreditation business plan.
Step 3	The nDoH then provides capacitating funding for the pre-accreditation phase through the pDoH to provide technical assistance.
Step 4	The municipality prepares the accreditation business plan with the technical support provided by the pDoH if necessary, and submits the business plan to the province for review.
Step 5	The pDoH reviews the business plan and endorse it if it complies.
Step 6	On the basis of the conditional accreditation approval, the nDoH provides capacity funding through the pDoH to assist the municipality to implement the capacity requirements of the business plan.
Step 7	The municipality implements the business plan and submits monthly progress reports to pDoH.
Step 8	If the municipality complies with the capacity requirements in terms of the business plan, the auditors confirm by issuing a compliance certificate for the level applied for.
Step 9a	By issuing the compliance certificate (levels 1 and 2), the MEC delegates the functions relevant to the level of accreditation applied for.
Step 9b	By issuing the compliance certificate (level 3), the MEC approves level 3 of accreditation of the municipality.

Source: National Department of Housing

Through consultations with the nDoH and some municipalities, the FFC established that the Minister of Housing and nine Members of the Executive Council (MinMec) have approved a list<sup>10</sup> of 18 municipalities for accreditation, including all the metropolitan municipalities. The 18 municipalities are at various stages of the accreditation process. Eleven municipalities are at stage 8, while the rest are at stage 7. Effectively then, no municipality has received either level 1, 2 or 3 accreditation as yet. This indicates that the pace at which the accreditation process is progressing is exceedingly slow. This has negatively affected certain municipalities which, in anticipation of receiving accreditation, had started preparing to take over the housing function by establishing dedicated units and staffing to perform this function<sup>11</sup>.

<sup>10</sup> The list consists of the City of Cape Town, City of Johannesburg, Ekurhuleni Metro, Tshwane Metro, Ethekwini Metro, Nelson Mandela Metro, Buffalo City, Mangaung, Emalahleni, Polokwane, Rustenburg, Sol Plaatje, Emthanjeni, Khara Huis, Namakwa District municipality, Pixley Ka Seme District municipality, Kgalagadi District municipality and Frances Baard District municipality.

<sup>11</sup> Tshwane Metro is one of those municipalities.

#### **d) New developments**

Some of the institutional bottlenecks discussed above seem to have been addressed in the 2008 Division of Revenue Bill (DORB)<sup>12</sup>. Chapter 4, section 31 (2) (a) of the bill compels the provincial treasury on the same day that its budget is tabled in the provincial legislature or at a later date approved by National Treasury, to publish in the gazette the indicative portion of the IHSDG allocation to each municipality among other things. This development has been noted by the FFC.

The nDoH has recently proposed an amalgamation of some public entities reporting to the nDoH such as Servcon and Thubelitsha to establish a public entity called the Housing Development Agency (HDA). Some of the rationale for the establishment of the HDA is stated by the nDoH as follows:

- To speed up housing delivery by strengthening the state's capabilities to acquire adequate land that is well located for housing purposes and releasing of well located land for integrated housing and
- To create communities with access to convenient social and economic opportunities.

The relationship, however, should be clear between the agency and the provincial and municipal governments to ensure that there will be no contradictions between the role of this agency and the requirements of both the Housing Act and successive Division of Revenue Acts in respect of accreditation of municipalities with capacity. However, the FFC has not done a complete assessment of this agency and other housing public entities, and therefore cannot make recommendations in this regard at present.

#### **e) Other challenges affecting housing delivery**

There has been an increase in the price of building materials. The building industry's costs, which include the cost of labour, building materials, plant and fuel, increased by 12.2% in the year to January 2007<sup>13</sup>. This escalation in building costs as measured by the tender price in recent years is attributable to building demand that has outstripped supply, input cost increase and a widening of building constructors' profit margins<sup>14</sup>. The increase in building costs increases the costs of delivering housing, thereby reducing the value of subsidies, and this is also a challenge to the spheres of government.

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<sup>12</sup> 2008 Division of Revenue Bill.  
<sup>13</sup> National Department of Housing 2006/2007 Annual Report.  
<sup>14</sup> See also reference in footnote 7.

Shortage of labour is also a challenge. The government needs skilled people for the delivery of housing. For these resources, the government has to compete with the big private construction firms. In a period of growth, South Africa lacks sufficient skilled personnel (nDoH Annual Report 2006-2007, p.19)<sup>15</sup>. Government therefore relies on small, emerging and unskilled contractors who are very slow. Sometimes these unskilled constructors may exacerbate the problem of stalled projects if not closely mentored. The shortage of skilled labour also put pressure on the cost of labour as the unskilled labourers may live a great distance from their place of work.

South Africa experienced a continuous increase in the interest rate during 2007. This affected the poor and low-income earners as they are at the bottom end of the qualification criteria for loans. Some of the beneficiaries of the housing subsidies (earning R3 500 to R7 000 per month) are required to make some contributions as they are only partially subsidised. This means that the costs of borrowing finance for housing has increased and some people will be negatively affected by the increased loan service costs, leading to greater chances of loan defaults.

## 7. Conclusion and Recommendations

South Africa has made progress on the housing delivery front since 1994. However, analysis shows the existence of bottlenecks within the system with respect to the flow of funding between the spheres of government, and these bottlenecks affect the speed as well as efficiency of housing delivery. The Integrated Human Housing Development and Settlement Grant, which is the main source of funding for housing delivery for most municipalities, is still subjected to bureaucracies that result in inefficiency, low level of expenditure and slow delivery of housing. The bureaucracy involved in the administration of the Integrated Human Housing Development and Settlement grant and the flows between the different spheres of government causes delays in the announcement of decisions on maximum subsidy that a municipality will receive, and this affects the planning process for housing delivery. To date, no municipality has been awarded full accreditation, although the Housing MinMec identified 18 municipalities for accreditation. Of these, only 11 have progressed beyond the first eight of the nine steps in the process.

15 *National Department of Housing 2006/2007 Annual Report.*

In light of the above discussion, the FFC recommends the following:

1. The accreditation process for those municipalities with capacity should be accelerated.
2. In addition to the accreditation process, a more permanent solution may be the shifting of the housing function to the municipal level. However, before such a shift can take place, it is recommended that an audit be conducted to determine whether municipalities have adequate capacity to administer and implement the housing function. The focus should be on the availability of essential and strategic skills such as project planning. The outcome of such an audit would in effect also have implications for the spending ability of municipalities.

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Learner Transport:  
An evaluation of Provision in the  
South African Public Ordinary  
Schooling Context

Nomonde Madubula

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## Abstract

The lack of transportation for learners in rural areas in particular is a barrier to accessing schools as learners have to walk long distances to schools. A concern has been that there is some fragmentation with regard to the provision of learner transport. For instance, when the service is provided it is fragmented and practised differently by the various departments whose responsibility it is. In some provinces transport is provided by the Department of Education, in some provinces it is provided by the Department of Transport, and in severe cases in other provinces there seems to be no transport provided at all. Where transport is provided there are some positive outcomes, such as timeliness and improvement in learner attendance, but the lack of co-ordination between the departments and the lack of transport provision has resulted in ad hoc services, in some instances resulting in learners having to walk long distances to schools. The Financial and Fiscal Commission has approached the study in this light, and has assessed the status quo of the provision of learner transport in order to understand the issues and challenges.

Keywords: Provincial Department of Transport, Provincial Department of Education, learner transport, transportation, rural areas

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## Abbreviations and Acronyms

nDoE	National Department of Education
nDoT	National Department of Transport
NLTA	National Land Transition Act (Act No. 22 of 2000)
NLTSF	National Land Transport Strategic Framework
pDoT	Provincial Department of Transport
PED	Provincial Education Department
SASA	South African Schools Act
SCoF	Select Committee on Finance
RTT	Resource Targeting Table
DoE	Department of Education
DoT	Department of Transport
FFC	Financial and Fiscal Commission

## 1. Introduction

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During the third quarter conditional grants public hearing in the National Council of Provinces in May 2007, the Select Committee on Finance (SCoF) requested the FFC to investigate some of the challenges associated with the provision of learner transport especially in rural areas. Some of the key issues that were raised included the fact that there seems to be a lack of an integrated approach with regard to the provision of learner transport. In some provinces the function is performed by the departments of education while in other provinces it is provided by departments of transport. In at least one province it is not provided at all, resulting in learners having to walk long distances to access schooling. Currently it is estimated that about 76% of learners walk to schools and that lack of transportation affects teaching and learning<sup>1</sup>. Furthermore, it should be acknowledged that if the policy on learner transport is not well implemented and adequately provided, it could constitute a barrier to access to education especially for needy learners.

The lack of transportation for learners in rural areas in particular creates a barrier in accessing schools as learners have to walk long distances, sometimes in adverse weather conditions. In those provinces where the programme is reasonably functional, results have been visible through increased enrolment, timeliness and relatively regular attendance. Simultaneously this has also had an impact on the demand and has therefore exerted funding pressures on other programmes such as the national school nutrition programme.

The objectives of this paper are threefold. The first objective is to conduct a status quo assessment of trends in the provision of learner transport across the nine provinces. The second objective is to conduct an assessment of the current legislative and implementation framework of the programme. The third objective is to evaluate current practice against legislation and government policy. The report is based on a desktop review and information received through a questionnaire that was administered on the nine provincial departments of education and of transport and also the two respective national departments.

The paper is organised as follows. Firstly an overview of the legislative framework is given, followed by a literature review, and lastly the current situational analysis with key findings regarding the provision of learner transport. The report concludes by making observations and offering advice on how equitable funding and the provision of learner transport could be improved.

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*National Department of Education Status Quo Report on the Provision of Learner Transport, 2006.*

## 2. Legislative Framework

There are a number of legislative documents that govern the learner transport obligations of government. Chapter 2 of the Constitution (1996) recognises access to basic education as a basic right of all South Africans. It requires that the state through reasonable measures should make this right progressively available and accessible. Schedules 4 and 5 of the Constitution consider public transport as a concurrent function between the national and provincial governments. The realisation of the right to education is enabled through the South African Schools Act (SASA) (No.84 of 1996). One of the key objectives of this Act is to make schooling compulsory for all learners of school-going age (seven to fifteen) or until they reach grade 9. The Act further states that it is the responsibility of the education members of the executive councils in each province to ensure availability and accessibility of schools to learners.

Section 21 of the Act details the allocated functions of school governing bodies, and among them is the responsibility to “pay for services to the school”. This can also be interpreted as paying for the services including learner transport. Section 34 states that it is the responsibility of the State “to fund public schools from public revenue in order to ensure the proper exercise of the rights of learners to education and redress of past inequities in education provision”. This could also be read to imply that the State has an obligation to provide learner transport in order that the right to education is realised.

The School Funding Norms of 1998 require the building of hostels if the travelling time to the school exceeds one-and-a-half hours. The amended School Funding Norms of 2006 state that one of the criteria for the building of hostels is that the distance travelled by learners is such that the time taken exceeds 1, 5 hours. The Amended School Funding Norms of 2006 also indicate the school allocation amount that may be used for non-personnel non-capital expenditure, which among other things may include public or scholar transport. This is consistent with the assigned functions as set out in Section 21 (d) of the South African Schools Act of 1996 (d). Another important piece of legislation is the White Paper on Transport which defines the vision of the South African transport system as to:

*“Provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of the freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable”.*

One of the important goals stated in the White Paper on National Transport Policy which is of relevance to learner transport is that of meeting customer needs. These include “the users of passenger transport services, for commuting, educational, business, tourism and private purposes, in the urban, rural, regional and international environment by all modes”. The National Land Transport Act (NLTA) (No. 22 of 2000) is intended to provide for the transformation and restructuring of the national land transport system. Section 44 of the NLTA considers the conveyance of learners, students, teachers or lecturers to and from school on a daily basis as a public transport service. Section 21 of the NLTA makes it the duty of the Minister of Transport, in consultation with Members of the Executive Council (MECs), to prepare a National Land Transport Strategic Framework (NLTSF) for the country for a five-year period. Furthermore, the Act requires that each MEC must annually prepare a provincial land transport framework for a five-year period, which must serve as a guideline for land transport in the province and must be consistent with the province’s vision, policy and objectives.

To date, the NLTSF for 2002 to 2005 requires the National Department of Transport to coordinate the issuing of clear guidelines to assist the relevant authorities to regulate the transportation of learners, sedan taxis, private hire and tourist transport. The NLTA also requires provinces to have a five-year land transport framework and that the needs of learners be incorporated in the Provincial Land Transport Framework.

The Rural Transport Strategy for South Africa was developed by the National Department of Transport in 2003 to address the challenges in rural areas. Its aim is to ensure a balanced and sustainable rural transport system with the emphasis on improving access to roads, developing passable roads, and addressing neglected infrastructure and corridors which are linked to markets and other social services. The delivery of rural transport infrastructure and services should include special needs transportation services to address the needs of learners, people with disabilities, the elderly and tourists.



### 3. Literature Review

The report by Human Rights Watch (2004) states that learners especially in rural areas (farm areas and former homelands) experience difficulties travelling to schools which, among other things, is caused by lack transportation. The reasons for the lack of transportation for learners range from farm schools being distant from the homes of many learners and the lack of services in rural areas, which results in public transport not being available to ferry learners. In most severe cases, learners walk up to thirty kilometres each way to school. This lack of transport can impact on truancy, lack of attendance and even drop-out rates. The problem may be more severe in rural areas.

With respect to the right to education on commercial farms, the report indicates that in Limpopo Province learners walk between five and seven kilometres each way. In particular, reference was made to a grade 7 learner who starts walking between 6:30 and 7:00 and only arrives at school around 9:30. Hence classes start an hour late every day to accommodate latecomers. Furthermore, the report indicates that in the Free State the case is the same, with learners walking fifteen to twenty kilometres to school in the early hours, with the result that learners have no time to do their homework because of the walking they have to do and household chores. Compounding the learner transport problem is that learners in the province are spread all over the place. This is an indication that it will not be affordable for the province to provide school transport, since learners are geographically scattered and therefore learner transport provision may not be economically feasible. In some cases where there is no budget, provinces rely on donations. For example in Limpopo Province, bicycles and some buses were given to learners, but those have not been adequate.

The School Safety and Transport Unit of North West Province presented a report that indicates that children in rural areas are faced with serious challenges of exercising their constitutional right of access to education<sup>2</sup>. This is due to the fact that schools are situated far from residential areas and that generally in rural areas there is a lack of public transport for commuting to schools. Furthermore, rural areas are sparsely populated, and most schools are located away from residential areas and there is a general lack of basic infrastructure. In response to this challenge, the North West Provincial Government shifted the function of learner transport from the Department of Education to the Department of Transport and was also informed by constitutional obligations and the national transport legislation.

<sup>2</sup> *Ibid*

The National Household Travel Survey study done in 2003 by the National Department of Transport on transport accessibility indicated that 15.7 million learners regularly travel to education centres and that 9% of learners use taxis and 8% use cars, while 76% (12 million) of learners walk. In considering those learners who walk to education centres, the results indicated that 57% of learners in metropolitan areas walk, while 71% in other urban areas walk and 91% in rural areas also walk. KwaZulu-Natal (KZN) has the highest percentage of learners who walk to school as no learner transport is provided at all.

A study conducted by the National Department of Education in 2003 on improving access to free and quality basic education for all acknowledges that infrastructure has to make schooling accessible to learners of compulsory school-going age. Learner transport should be part of making sure that the objective is achieved. In particular the study argues that no poor learners should be further than one hour's travel from the schools they attend.

A report on the review of the financing, resourcing and costs of education in 2003 by the nDoE indicated that according to the systematic evaluation done in 2001 on grade 3 learners, 81% of them walked to school, 7% used public transport and 6% spent more than an hour getting to school. Assistance to learners by provinces is based on need, especially for those learners who struggle and have difficulty reaching the school. The systematic evaluation study done by the National Department of Education in 2001 on performance measurement of grade 3 learners highlighted accessibility to schools as one of the indicators of learner performance.

A report by the Nelson Mandela Foundation in 2005 describes a scenario in which almost all learners walk long distances to school over hills, through valleys, across bridges and rivers, through muddy potholes and through bushes<sup>3</sup>. And when the river floods neither the learner nor the teacher goes to school. This is further compounded by the fact that high schools are far from villages, a reason in some instances for learners dropping out of school after the primary phase.

Furthermore, the lack of basic services such as good roads and transport systems result in learners walking long distances. For example, a scenario is painted of a learner who has to sell wood to get money for a bus coupon as the school is a long distance from the village, and has to get up at four in the morning and arrives home at four in the afternoon.

A report by the South African Human Rights Commission (SAHRC) in 2006 indicated that learners, especially those in rural areas, travel long distances to school and that transport costs are a greater burden on parents than school fees.

A report by the United Nations Committee on Economic Social and Cultural Rights in 1999 on the right to receive education states that this depends upon prevailing conditions in the respective country, with the legal frameworks surrounding the right to basic education setting out some aspects of basic education, including availability and accessibility.

Availability of basic education simply means that the necessary resources must be available in order that the right to basic education can be accessed. Accessibility means that educational institutions must be geographically accessible to learners. Physical accessibility refers to the distance that learners need to travel and their safety.

The practices and policies with regard to the provision of learner transport in the United Kingdom indicate that it is the duty of the local education authority to provide transport for learners in terms of the UK Education Act. Transport is provided free and is limited to learners of compulsory school-going age. The Education Act defines walking distances, which are two miles for a child under the age of eight years and three miles for children aged eight to fifteen years. In the United States, the local boards of education are authorised to contract and operate school buses for the transportation of pupils enrolled in public schools of the local school administrative unit. State boards of education allocate resources to the local boards of education for the transportation of learners.

The Zambian Government in 2004 was requested to introduce bus fares or concessionary rates as a result of a disaster in which learners died when were travelling to school by truck. It was found that the trucks were unsafe (and cheap), which had contributed to the accident. Part of the reason for learners using this mode of transport was that student fares were removed from the transport policy and learners had to find cheap alternatives. In order to promote greater access to education in India, in 2004 free school transport was provided from standard one to standard twelve<sup>4</sup>. In Indonesia free school buses were introduced in 2006, after complaints that public buses were refusing to take students due to the lower fares they were paying compared to the general public<sup>5</sup>.

<sup>4</sup> National Department of Education Status Quo Report on the Provision of Learner Transport, 2006.  
<sup>5</sup> Ibid

## 4. Status Quo Regarding Learner Transport Provision

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The nDoE tabled a status quo report on learner transport in 2006. The report was necessitated by the fact that there were indications that many learners, especially those in rural areas, were having difficulty accessing schools. The study focused on existing learner transport schemes. It included interviews that were conducted in all the provinces concerning the policies and practises of each of the learner transport schemes. The results of the study indicated that provinces apply different strategies and practises in providing learner transport, which differ according to the respective department providing the service, either the provincial department of transport or the provincial department of education, depending on the province.

While most provincial departments of transport do have learner transport strategies in place, the extent to which these strategies have been implemented is often uncertain and they vary widely across provinces. The nDoT developed a draft policy on learner transport in 2007, which was necessitated by, among other things, the absence of a national policy on learner transport around which provincial policies can be developed. In the absence of a national policy, there will be a fragmentation of policies operating in different provinces.

The primary objectives of the national department of transport's draft policy are to:

- provide national uniform norms and standards
- promote co-ordination and co-operation among the stakeholders and to provide a framework for monitoring and evaluation of learner transport services.

The draft policy document on learner transport further stipulates that the National Department of Transport would be the custodian of the policy and would be responsible for the regulation, funding, communication, monitoring and evaluation of the overall national learner transport policy. Provincial departments of transport would be responsible for managing the implementation of learner transport in their respective provinces, with learner transport plans developed and integrated into the PLTF (Provincial Land Transport Framework).

The Gauteng Department of Transport (GDoT) has had a strategy for the transport needs of learners since 2002. The strategy aims to promote and advance effective and affordable learner transport to and from schools. It is quite uncertain, however, to what the extent the strategy has been implemented as the provincial education department currently provides learner transport. The strategy of the Gauteng Provincial Land Transport Framework (GPLTF)

among others is to develop a transport strategy for the needs of learners as well as to formalise and legislate learner transport operators.

The Gauteng Provincial Department of Transport, Roads and Works (GDPTRW) currently has no policy on learner transport due to the fact that the provision of learner transport is managed by the Gauteng Department of Education (GDoE) as mentioned above. According to the GDPTRW, the provision of learner transport in the province is done on a fragmented basis. This is because GDoE contracts transport operators to provide learner transport services and uncontracted learner transport service providers provide door-to-door service for learners which is then paid for by parents. This situation has the potential problem of compromising the safety of learners and other statutory obligations of government.

Therefore, to enable learner transport operators to provide safe, reliable, effective, efficient and fully integrated transport services, and to provide the requisite infrastructure to meet the mobility needs of the learners, the GDPTRW has developed and embarked on initiatives. These include the facilitation of the migration of the learner transport function from the GDoE to the GDPTRW and the formalisation, regulation and registration of illegal operators. The NLTTA act stipulates among other things that the conveyance of scholars or learners and teachers to and from schools on a daily basis should be regarded as a public transport service and as such it is defined in the GPPRTA (Gauteng Public Passenger Road Transport Act) as part of the GDPTRW's responsibility.

The provision of learner transport in North West Province has since 2005 been transferred to the North West Department of Transport, Roads and Community Safety (NWDOTRCS). Until 2004, learner transport was provided on an ad hoc basis by the North West Department of Education (NWDoe). There were no formal procedures in place. This meant that tariffs depended of the respective service provider (per learner per day or kilometres per day). In order to formalise learner transport, the function and the budget were shifted to the NWDOTRCS. The two departments (NWDOTRCS and NWDoe) developed a memorandum of understanding and service level agreements that set out clear roles and responsibilities, according to which the NWDoe is the custodian of learner transport. The Department of Education conducts needs analyses and makes recommendations to the Department of Transport on the routes for the learners, and in turn the NWDOTRCS procures the services and pays the contracted service providers. Learner transport in the province is targeted at farm school learners and those in the deep rural areas.

The Northern Cape has had a learner transport policy since 2001, and a database of learner transport operators and vehicles has been developed in order to legalise the operations. In Free State Province, transport operators provide transport services to various educational institutions. There are problems regarding the transportation of learners, including vehicles that are unroadworthy and unsafe.

In the Western Cape, the Department of Transport has developed synergies with the Department of Education since the function is located within the Department of Education. The advantage is that the department is able to strategise on the best methods of supplying a transport service to learners. In Limpopo Province, learner transport is contracted to the Department of Transport by the Department of Education, and the strategy is to target farming areas. Contractors are reimbursed at a rate of R30/km, and learners are also provided with bicycles where possible. In KwaZulu-Natal the strategic framework of the Department of Transport does not make reference to learner transport.

The response by some of the bus and tax associations that offer to provide learner transport concur with the views and arguments expressed above by the departments of transport on learner transport. Some of the examples highlighted were that provision of learner transport is fragmented as there are contracted and uncontracted service providers and subsidised and non-subsidised transport services. That there needs to be a policy that clearly indicates where the responsibility of the function should lie in order to be able to deal with the aspects of financial responsibility and political accountability.

The reports by the provincial departments of education indicate that in the Eastern Cape, Gauteng, Mpumalanga, Northern Cape and Western Cape, there are formal policies and financial support, but in the Free State and Limpopo there are no such formal policies. In KwaZulu-Natal there is currently no policy on learner transport. In the North West, the learner transport unit started operating in 2004, but has no formal policies and procedures in place – what happens is that individual service providers identify learners on farms and contact the department for a permit to transport learners. The North West Department of Education indicated that learners (especially in the rural areas) were experiencing difficulties in exercising their constitutional right of access to education since most schools are long distances from residential areas. Learner transport was administered by the Department of Education on an ad hoc basis before 2004. In 2004 it was formalised and in 2005 the function and the budget were transferred to the Department of Transport in order to streamline and consolidate the public transport function into one department of specialisation. In Mpumalanga, the operation of the programme is conducted through the provincial department of education.

In Gauteng, the department currently provides learner transport to needy learners who have difficulty accessing schools especially in rural areas. The learners who benefit from the service are those who are in national quintiles 1 and 2, those who live more than 5 km from the nearest school, those who receive social grants and those who qualify for fee exemption. In the Western Cape, transport is provided to learners. Learner schemes in the province are apply to a minimum of ten learners who qualify for transportation, and for fewer than ten learners, transport allowances are considered.

Table 1 below summarises the procurement procedures and contracts of the respective department of education in each province. The majority of provinces at most support learner transport through contracts, and the Western Cape provides a further transport allowance to learners. Beneficiaries are identified through the distance travelled to school. Overall, the distance has to be at least greater than 3 km (Limpopo and Northern Cape, or 5 km in some other provinces). In most cases learners are identified by the principals and district officials. Contract rates differ per province as indicated in Table 1. Most provinces pay on the basis of a rate per kilometre per learner, with the service being provided free to the learner according to the contract. The modes of transport used to ferry learners in the provinces are mostly buses and minibus taxis. The Eastern Cape also uses sedan cars, and pick-up trucks are also used in the Northern Cape in remote rural areas. In the North West donkey carts are sometimes used.

**Table 1: Operators' remuneration and contract rates per province**

Province	Operator Remuneration	Contract Rates
Eastern Cape	Per learner by km in bands	10 – 20 km: R5 per learner per day (2 trips) 21 - 30 km: R8 per learner per day (2 trips) 31 km+: R11 per learner per day (2 trips)
Free State	Per km	Maximum rate of R16 per km (all modes)
Gauteng	Per learner per km	R0.30 per learner per km (all modes)
KwaZulu Natal	N/A	
Limpopo	Per km	R30 per km
Mpumalanga	Per learner per km	R0.20 per learner per km
Northern Cape	Per km in bands per vehicle	3.1–10 km minimum at R3 000 p/m. 11-20 km, minimum R4 500 p/m 21-30 km, minimum R6 000p/m 31-40 km, minimum R7500p/m
North West	Per km/per km per learner	Varies (price competition)
Western Cape	Per learner per km per day	Varies (price competition)

Source: National Department of Education: 2006 & FFC Request from Provinces 2007.

The budgets and expenditure for learner transport also differ per province and in most instances the budgets start at a very low base. Learner beneficiaries of the provision of learner transport also vary as summarised in Table 2.



Table 2: Budgets and expenditure per province 2005/06 and 2006/07

Province	2005/06 Budget	2005/06 Expenditure	2006/07 Budget	2006/07 Expenditure	Number of learners benefiting - 2005/06	Expenditure per learner
Eastern Cape	R8 900 000	N/A	R35 757 600		27 500	R1 300
Free State	R14 200 000	R14 661 757	R12 388 804		3 117	R4 704
Gauteng	R68 500 000	R78 516 909	N/A		49 420	R1 252
KwaZulu-Natal	N/A	N/A	N/A		N/A	N/A
Limpopo	R950 000	*	R21 000 000		3 229	*
Mpumalanga	R72 961 000	N/A	N/A		50 463	R1 446
Northern Cape	R32 408 855	R25 258 895	R28 226 000		12 421	R2 034
North West	N/A	R15 900 000	Function transferred to PDoT		N/A	
Western Cape	N/A	R93 348 056	R119 753 000		48 903	R2 272

\*No monies were claimed by the PDoT that administers contracts

Source: National Department of Education, 2006 & FFC Request from Provinces 2007.

Collaboration is also taking place between the provincial departments of education (PEDs) and the provincial departments of transport (PDoT) with regard to learner transport. This collaboration is in the form of task teams, tenders and safety issues as well as some operational matters. In assessing whether the provision of learner transport makes any contribution to learner education, there are both positive and negative results. The positive results indicated by the provinces range from improvement in access to education, improved learner performance, increased enrolment, timeliness of learners as well as a reduction in learner absenteeism.

The status quo report on learner transport in 2006 by the nDoE indicated some institutional weaknesses that have been identified with regard to the implementation of this programme. These include shortages of staff to administer and monitor the programme, weak procurement and planning systems, lack of clear communication between role-players, delays in paying operators and potential under-funding of the scheme. Transport problems experienced by learners range from not all needy learners qualifying for the scheme, unreliability of the transport, operators discontinuing the services as a result of not being paid on time or at all, learners walking long distances to pick-up points as well as unsafe and overloaded vehicles.

## 5. Conclusions and Recommendations

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The results so far indicate that although access to basic education is a constitutional right, it is still far from being fully realised in practice. Indications are that for many learners, especially in rural areas, access to school is still hampered by long travelling distances and a lack of basic infrastructure such as safe roads and pedestrian bridges.

Broad policies in support of learner transport are in place, but they have not been fully implemented or adhered to because a specific national learner transport policy has been lacking. The legislative framework for the provision of transport exists in different formats in different departments. The location of the function is not very clear, as both the Departments of Education and of Transport claim some responsibility in law. There is therefore a need to improve the integration and co-ordination of the processes between the two departments at both national and provincial level. The following recommendations are made:

- National norms and standards for the provision of learner transport should be established. This will be possible once the location of this function has been clearly demarcated between the national Departments of Education and of Transport. This responsibility should be clarified as a matter of urgency.
- In the interim, all provinces should implement the statutory provisions that ensure learners are afforded the opportunity of equal access to the right to education, irrespective of their province of residence and irrespective of whether they reside in a rural or urban area. The FFC notes that the problem of learner transport is particularly acute in rural areas.

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## Measuring the Volume of Government Output in South Africa

Denver Kallis and Ramos Mabugu

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## Abstract

This study aims to explore the development of output measures for public services to use in running the Constitutionally Mandated Basic Services Model. This phase of the project presents a literature review of the international best practice and makes some preliminary recommendations for South Africa. Historically in many countries, the output of the government sector has been conventionally measured as the value equal to the total value of the inputs, i.e. the volume of output is measured by the volume of inputs. In the international arena, the United Kingdom is a world leader in the extensive use of direct volume measures of output and has prioritised the development of this dimension of the national accounts. Australia, Italy and the Netherlands also place priority on developing direct volume measures. Several countries, including Finland, Germany, Sweden and Norway, plan to incorporate them for certain sectors in their national accounts in the next few years. South Africa has not made any significant progress in using direct volume measures to obtain government output and incorporating them into its respective national accounts as suggested by the 1993 System of National Accounts. Our research suggests that the data for compiling direct volume measures for government services in South Africa are most likely available, but are not routinely collected and are scattered in many places. Preliminary recommendations are made on what can be learnt from international experience.

Keywords: constitutionally mandated basic services model, government output, input measures, productivity, quality change, volume measures.

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## Abbreviations and Acronyms

ABS	Australian Bureau of Statistics
CMBS	Constitutionally Mandated Basic Services
FFC	Financial and Fiscal Commission
GDP	Gross Domestic Product
GFS	Government Financial Statistics
IMF	International Monetary Fund
OECD	Organisation for Economic Cooperation and Development
ONS	Office of National Statistics
SARB	South Africa Reserve Bank
SARS	South Africa Revenue Services
SASQAF	South African Statistical Quality Assessment Framework
SDDS	Special Data Dissemination Standard
SNA	System of National Accounts

## 1. Introduction

During 2006, the Financial and Fiscal Commission (FFC) embarked on research that developed a pioneering and detailed Constitutionally Mandated Basic Services (CMBS) model. The model will be used to inform the FFC in making recommendations on the equitable division of revenue. The model is useful to policy makers who wish to progressively obtain uniform access to basic services in South Africa for constitutional and economic reasons. The model is also useful in informing policy makers on what the provincial and local government equitable allocations should be if these goals are to be realised, and hence, by implication, on what the national equitable allocation should be.

At present the conceptual part of the model, and the programme that allows one to undertake grant simulations, are fully complete. However, some data issues remain to be resolved before the model can be used to produce definitive results for South Africa. Specifically, work is needed to refine the data used in the cost function exercise. More work is also needed to *develop clearly defined output proxies for the services of interest*, which is the purpose of this project.

The research therefore aims to explore the development of public sector output measures. The CMBS model requires an accurate measure of output or proxy that government is producing for each service in a given period. The policy maker then decides on an appropriate level of output at some future period and the model then maps the least cost path to achieve that future desired level of output. The importance of an accurate output measure or proxy is thus evident.

In this paper, the term '**government**' is used interchangeably with '**public sector**' and encompasses all those agencies that provide public services. Public sector or government output is a component of gross domestic product. It is the volume of goods and services provided by government to individuals or to the population at large. These goods and services are usually provided free of charge, or at a price that is not intended to cover the cost of production. It is the absence of market transactions that underlies many of the problems in measuring government output, as explained in Section 2. An increase in government output results from an increase in goods and services becoming available or from an improvement in their quality. Services such as health (clinics and hospitals), education (schools, universities, Adult Basic Education and Training (ABET)), and welfare (social security) are commonly characterised as government services or output. However, government also provides many other services such as the administration of courts, prisons and the provision of street lighting to make neighbourhoods safer.

In many countries, the relative size of the public sector has expanded and thus a considerable proportion of national resources are allocated to public expenditure. It is therefore important to know how efficiently these resources are used and what is happening in public sector output. Activities of the public sector have often been criticised as being inefficient without any reference to indicators of this inefficiency. However, one must recognise that there are some aspects of public sector activities that are difficult or even impossible to measure (Hjerpe, 1980).

The paper is structured as follows: Section 2 explains the concept and outlines the main approaches and problems of measuring the volume of government outputs. Section 3 analyses the international experience and progress in measuring government output, while Section 4 presents several country case studies. Sections 5 and 6 review the South African context and implications for the country, and Section 7 gives conclusions.

## 2. Measuring Government Output

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In itself, measuring output for public services is a major task since the outputs may be diverse and difficult to quantify, often requiring the construction of appropriately weighted indices of output. Constructing measures of output for public goods is a well known problem in empirical work in public finance and this becomes evident later in the paper. Also, for public sector output there are often no agreed-upon proxies for output. While these are problems encountered in all applications of cost functions to the public sector, there are problems that may be especially difficult to solve in a South African context because of the general relative lack of data and the restriction that this may impose on the construction of various proxies for public sector output.

### 2.1 Public Sector Output explained

The public sector is responsible for producing a significant proportion of goods and services. The real value added by the South African general government services sector increased by a seasonally adjusted annualised rate of 3,6% during the second quarter of 2007 compared with the first quarter of 2007 (StatsSA 2007). The public sector, as with any other component of the economy, produces goods and services such as education, health and welfare, also known as 'output', by using a set of 'inputs' such as capital, labour and intermediate goods and services (including materials and energy).

However, in spite of the considerable importance of government output, often quite little is known about the level of output produced. The emphasis is usually on how much is spent on inputs in a particular area or service rather than on how much output is produced as a result.

The measurement of public sector output is a vital element in the calculation of productivity and assessment of performance. Gross domestic product (GDP) is a commonly used measure of the performance of the whole economy. The national accounts give two measures of the total output of an economy, namely GDP at current and constant prices. The first measure shows the total monetary value of the output of the economy each year, using prices prevailing in that year. The second measure removes the effects of price changes and represents the actual or real volume of output produced in the economy. Constant price or real volume measures are generally of more interest from an economic growth perspective as it indicates growth in goods and services in the economy.

The preference for measuring inputs rather than outputs is also reflected in typical national accounts treatments of the public sector. For non-market government services, the measure of output volume in GDP is often approximated by measures of input volume such as the number of hours worked (output = input). This output = input treatment implicitly assumes that the amount of output produced per unit of input is not changing, or, alternatively, assumes that productivity is constant. This approach is deficient, as there is no reason to believe productivity in the public sector does not change over time. This issue is examined further in Section 3.

One important reason to have an accurate measure of public sector output is that it results in realistic and useful national accounts overall, making comparison to other countries which adopt the same national accounting standards possible. Another argument for accurate measures of public sector output is that public expenditure is to a large extent financed by tax revenue, and taxpayers have the right to accountability of the public authorities. Users of public services too have a right to information about the quantity and quality of the services they use. Public sector output measures support accountability for public expenditure.

Over the past several years, there has been a drive to improve the measurement of output from the public sector to improve the quality of national accounts and to enable measurement of productivity for these services. This has been formalised in official national accounts standards set by the European Union's statistical agency, Eurostat, and the United Nations System of National Accounts (Eurostat 1995, 2001, United Nations, 1993). Statistical agencies around the world are increasingly encouraged or required by legislation to replace input measures with real output volume measures (also known as direct measures). The following section describes the implications of the input and the direct (volume) methods of measuring government output.

## 2.2 Approaches to Measuring Public Sector Output – Input Measures versus Volume Measures

### 2.2.1 Input measures

Historically in many countries, the conventional approach to measuring government output has been the value equal to the total value of the inputs, i.e. the volume of output is measured by the volume of inputs. Alternatively it could be stated that the real value added by government is measured at cost (see Atkinson, 2005). This convention is referred to as the 'output = input' convention and has a number of shortcomings.

In the case of collective services such as national defence or public administration, it is hard to identify the exact nature of output and therefore it is easier to approximate output using the inputs, and in the case of services supplied to individuals, such as health or education, it is difficult to place a value on these services as there is no market transaction and this is why one approximates that value by the amount of inputs used.

The 'input = output' approach disregards increases in productivity. To the extent that productivity increases, the growth rate of government output is understated, and thus the overall growth rate of GDP is understated. However, it is also possible that the productivity indicator for government is constant or declining. It is also important to note that there are lags between inputs and outputs, and that a significant increase in government spending may only be evident in improved output indicators at a later date.

For the most part, output from public services is measured poorly in the national accounts, where in many cases changes in input levels (such as hours worked) are used as a proxy for changes in output levels. This implies that the growth rate for the public sector's actual production is not observed and is simply approximated by the growth rate in the number of hours worked. This framework is lacking as it does not allow for changes in the amount of output produced per input. The implication is that productivity, the amount of output per unit of input, is assumed to be constant.

The assumption of constant productivity is of concern for the following reasons. Firstly, growth in GDP is generally used to judge the wellbeing of an economy over time and compared to other economies. Analysing economic growth is particularly important in forming and adjusting economic policy.

Assuming constant productivity for a large part of an economy, such as the public sector, may cause an under- or over-statement of growth. This could subsequently result in misleading conclusions, particularly in cross-country comparisons where the size and structure of the public sectors vary widely. Secondly, without real output and productivity measurements, we do not know how well government is using its resources. Without productivity growth measures, it is impossible to determine whether efficiency in the spending of taxpayer money has improved or deteriorated.

The assumption of constant productivity is often relied on because the measurement of output and productivity in the public sector has two major difficulties. The first is defining the units of output. For some services, this is easier; for example, an output in health could be the completion of an individual operation or a consultation with a general practitioner. For others, it is more difficult; for example, South Africa's defence forces contribute to a safer environment for all South Africans but it is very difficult to quantify the output of defence. Health is an example of an individual service, as the output is delivered to individual consumers, whereas defence is a collective service where the output is consumed by the entire economy simultaneously.

Often individual public services have private sector equivalents and the same output methodology should apply to both. For example, in private sector education, the amount spent on fees would be adjusted for price inflation to get a real volume of output. This would essentially amount to a volume measure based on the number of pupils (potentially with a quality adjustment) and a similar methodology could be applied to public sector education. In the case of government departments providing consultancy services, such as providing advice to ministers, methods used for calculating real output for privately supplied consultancy services could be applied similarly.

The second key difficulty with measuring government output is the lack of market price information. This is due to government output being provided free of charge or for an economically insignificant amount (an amount that does not cover the cost of providing the service). It is therefore quite complex to derive a value for each service. In the market sector of the economy, the price of a good or service represents the marginal value to the consumer, whereas the non-market or public sector has no such information. This implies that in current price GDP, the total monetary value of public sector output is calculated from the sum of the input costs (thus assuming zero net operating surplus or profit). The lack of price information means it is difficult to add together diverse units of output. In order to generate measures of aggregate output, one needs to add together the various outputs that a service produces. For example, in calculating total output for health, one has to somehow combine the number of major operations such as transplant surgery with the number minor operations such as getting a cut stitched at the local clinic.



These two outputs have different values to the consumer and it is misleading to simply add a major transplant operation to getting a cut stitched and obtain a total of two operations. In a market situation, where the value to the consumer is represented by the price, aggregate output is calculated by multiplying the number of operations in each category by the price in each category before adding each type together. This weights each output by its value in the total aggregate output. Since public services are usually provided at no or below cost, other means of weighting each output are needed. Preferably, outputs should be weighted using a measure that corresponds to the marginal value of the service to the consumer. One option for services such as health or education is to use prices from private health care and education as proxies. The implication is that this would assume that private education and health operate in competitive markets and that the quality of private and public provision is the same.

### 2.2.2 Volume measures

Another approach to measuring output is the direct measure of the volume of government output. This measure takes the output, calculated on the basis of inputs, at a reference year, and the direct measures are used in the form of changes since that date. The direct measures are of changes in output and no monetary value is attached to the level of output. They are not used to estimate the relation between inputs at the base date, and this method does not calculate a current price measure that could be included in the measure of GDP at market prices.

Expenditure on the production of goods and services that constitute government output is a component of GDP, measured using the expenditure approach. It comprises part of the component 'final consumption expenditure'. Final consumption expenditure is generally defined as follows:

1. It is the value of goods and services that meets individual or communal needs
2. It comprises, for the most part, expenditure by households and government.

Part of households needs are derived from spending on goods and services in the market sector, e.g. retailers and service providers. The rest of households needs are provided by government output, which can be consumed collectively by all (e.g. defence) or by individuals (e.g. education and healthcare).

An increase in expenditure between periods could be a result of one of the following:

1. An increase in inputs to the production process (e.g. more labour)
2. The prices of the inputs increased (e.g. wages increased or more expensive labour employed)
3. Or a combination of the above.

It is important to note that the **volume of government output** does not necessarily move sequentially with the **expenditure on producing it**. In the absence of constant returns to scale, they are different concepts. The expenditure has paid for the inputs, whereas the output is what was created through the production process (bringing the inputs together). The volume of output is measured independently of the expenditure – it is measured in terms of what is produced for the consumer. For example, the volume of output of health treatments can be measured in terms of the number of treatments provided to patients; and the volume of output of education can be measured by the number of students passing matric – a 10% increase in the matric pass rate does not add 10% to expenditure, but to the output produced as long as the quality of the education provided remains the same.

Past experience in the 1950s and 60s (Maurice, 1968; Levitt and Joyce, 1987; and Beales, 1967) of the use of the direct measurement approach illustrates that the design of direct output measures requires considerable care and the investment of significant resources.

The physical volume and financial value of both inputs and outputs should be measured. However, while the financial value of inputs can be ascertained through spending data, the financial value of outputs is more difficult to measure where there is no market transaction against which to measure the price.

Direct measures of output should be continuously monitored to ensure that they are capturing changes in quality.

### 2.2.3 Measuring quality change

Measurement of public sector output is complicated by the changing nature of some outputs over time. Outputs often change in quality and this should be accounted for. For example, cataract operations may be augmented by new technology and techniques, resulting in better outcomes for patients. Some quality change can be accounted for by differentiating output into categories that are as homogenous as possible. Doing this means that quality adjustment is recognised in relative volume changes between output categories. When it is no longer practical to further differentiate output, then quality adjustment can be recognised by marking up or down the volume of output according to a quality index. This effectively treats higher quality output as a higher quantity of output. For example, a higher quality cataract operation could be worth 1,5 original cataract operations.

Quality adjustment is a very complex issue and remains problematic not just in this context but in the construction of price indices as well, where it is important to distinguish between changes in price due to quality changes and 'pure' price changes. Some aspects of the public service are more amenable to quality adjustment than others. For education, the amount of improvement in the matric results could be used to measure quality change, although this is complicated by the other influences on test results outside the control of the school system. Producing something of a higher quality is equivalent to producing a higher volume of output – the quality is an attribute of the output and not the inputs. In the market sector, where goods and services have prices, several options exist for measuring the amount for which improved quality adds to the volume of production since they all relate to the price in some way. Government services as noted earlier usually have no market price. However, the rate of change of quality may well be significant, which is why it is important to include quality change in the measure of output.

According to Powell and Pritchard (2002), allowing for quality change is quite a difficult aspect of output measurement in any area and the problem is even more difficult for services. For example, if the average price of an hour of a lawyer's time increases by 25%, is this a 25% price rise, a 25% increase in the lawyer's average quality per hour of output, and thus in actual output per hour of work, or a mixture of the two? In addition, market measures take the definitive indicator of quality change as being what people are willing to pay for. In a non-market setting where consumers sometimes lack a choice of alternatives and basic output measures are imperfect, quality change might be expected to be greater however less information is available. In practice data are limited to assessments that allocate some sort of grade to a given output, say a lesson. If there are three different grades of output of a given unit of services, each of those output grades becomes a separate sort of output.

However, it is exceptionally difficult to derive justifiable weights that reflect the relative amount of standard output represented by each quality grade.

The OECD Productivity Manual was produced with the objective of providing an accessible guide to productivity measurement, particularly for use in statistical offices. It identifies desirable characteristics of productivity measures and, although there is no strongly prescriptive element, it seeks to improve international harmonisation. Strong links are made to the underlying economic theory. The Manual covers the whole of the economy including the government sector. One important point is that the term 'productivity' is used in different ways, and there is a need to be precise in its application. When people refer to the input approach to the public sector 'assuming zero productivity growth', this could have several interpretations; and correspondingly the output = input approach can have several interpretations. For example, in some cases, the inputs used to estimate output are confined to employment. In this case, it is output per unit of labour input ('labour productivity') that is being assumed constant. In other cases, total inputs are used, in which case it is total input productivity that is being assumed constant. Labour productivity in the public sector may be rising because more capital per worker is being applied.

When quality levels can be measured as constant over a time period, measures can be made of the productivity of inputs into government outputs. There are several possible reasons for changes in productivity, ranging from organisational management, motivation of personnel and economies of scale and agglomeration.

## 2.2.4 United Nations System of National Accounts (SNA 1993)

The United Nations SNA is drafted by a group on which the major international bodies are represented and is approved by the United Nations Statistics Commission. It is not mandatory, but its recommendations have been taken seriously by all major statistical offices (paragraphs 3.15 - 3.22).

The SNA is a coherent, consistent and integrated set of macroeconomic accounts, balance sheets and tables based on a set of internationally agreed concepts, definitions, classifications and accounting rules. It provides a comprehensive accounting framework within which economic data can be compiled and presented in a format designed for economic analysis, decision taking and policy making. The national accounts are compiled for a succession of periods, thus providing a continuous flow of information for monitoring, analysis and evaluation of economic performance.

The SNA provides a framework for calculating GDP, gross national income (GNI), savings, capital formation and other key economic variables. National accounts data pertain to all resident units in a given economy, which is divided into five sectors. The government is one of these five sectors.

The SNA has an extensive discussion of price and volume measures for non-market goods and services (paragraphs 16.133 - 141). It recommends that the volume of non-market output should be measured in terms of 'the various goods or services produced as outputs' (paragraph 16.134). This is in contrast to the earlier version of the SNA which took the view that estimates of volume changes in non-market output should reflect those for intermediate consumption and primary inputs of government. The major difference between these two concepts is that an output-based measure will capture productivity changes whereas one based on inputs does not. Thus the most appropriate way to measure government output as suggested by the SNA is by using direct volume measures as opposed to the traditional input based method.

For collective services, the SNA recognises that measuring changes in volume of services is distinctly more demanding: "it is difficult to measure the output of preventive services, and this is an area in which further research is needed" (paragraph 16.139). It goes on to say, "In practice, it may not be feasible to avoid using changes in the volumes of inputs into such services as proxies for changes in volumes of outputs, just as it may sometimes be necessary [to do so] in certain market industries, such as agriculture or construction" (paragraph 16.139). When it is not possible to avoid using an input measure, the SNA states that the input measure should be a comprehensive one, not limited to labour inputs. The process of further revising the SNA of 1993 is currently under way and is expected to end in March 2009.

## 3. International Experience with Measuring Government Output

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### 3.1 Use of Volume Measures

According to the Atkinson Report (2005), the United Kingdom is a world leader in its extensive use of direct volume measures of output, covering two-thirds of government output. It is also a priority issue in developing their national accounts.

Australia, Italy and the Netherlands also place priority developing direct volume measures, and cover between 20 and 50% of government output. New Zealand covers 60 to 70% of government output. Canada uses direct volume measures to obtain government output in the university education sector.

Several countries, including Finland, Germany, Sweden and Norway, plan to incorporate them for certain sectors in their national accounts in the next few years, although it should be noted that Germany believes that the traditional input measures were more suitable generally, as they offer international comparability and timely data. The experience of the Netherlands suggests that GDP growth is lower using direct volume measures; Italy has seen no systematic impact; Australia, New Zealand and Canada found that estimates of GDP growth rates increased with the introduction of direct volume measures. When comparing a country's growth performance to that of another, one must consider the differences in the way in which government output is measured as it has an impact on the calculation of GDP. It is well known that input measures are inaccurate since it assumes input = output and no productivity, therefore when changing to direct measures, which are a more accurate reflection including quality change, there will be changes to governments' contribution to GDP. Over- or under-statement of GDP occurs depending on the accuracy of the prior input measures used.

### 3.2 Units of Measurement

1. Education – typically measured using the number of pupils or pupil hours, weighted by the cost of each type of education.
2. Health – the measures used are more varied; some countries use a count of hospital treatments and other services, some use numbers of in-patients, out-patients and hospital bed nights.
3. New Zealand measures public insurance services by the number of claims.
4. The UK also measures;
  - a. Social security - by the number of claims processed, weighted by the time taken
  - b. Police - by the number of crimes solved, weighted by the time spent on each type of crime

- c. Courts - by the number of different types of cases, weighted by cost
  - d. Social services - by the number of different types of services provided, weighted by cost.
5. One function for which it has been so far impossible to find an accurate direct volume measure is defence, a collectively consumed service. As far as is known, no country has yet been successful in this.

### 3.3 Use of Quality Measures

- 1. UK - uses an average annual quality change derived from a study of examination performance to adjust for quality change in education.
- 2. Australia – considering the use of exam results and class sizes as indicators of quality change.
- 3. Italy - uses a correction to account for class size.
- 4. Netherlands – uses the number of pupils moving up/graduating which implicitly captures quality change as pupils only move up when they reach the required standard.
- 5. Canada – uses a weighted sum of students by programme and level to measure varsity education output which also implicitly captures quality change.
- 6. New Zealand – adjusts its health indicator series for quality change: the indicator is based on case-mix-adjusted in-patient discharges. Each treatment is classified in one of the diagnostic-related groups, which are aggregated using base year average prices for each year.

## 4. Case Studies

This section presents several case studies in order to gain insight into their progress in using or changing to direct measures of government output. It begins with the United Kingdom, where the most recent and quite extensive progress has been made. Other countries included are Australia, USA, New Zealand, Canada, the Netherlands and Italy.

### 4.1 United Kingdom

The United Kingdom's Office of National Statistics (ONS) has made significant progress over the last ten years in improving the measurement of government output and is a world leader. Following the final report from the Atkinson Review in 2005, the ONS formed the Centre for the Measurement of Government Activity to implement the recommendations from the review, striving for improved measurement of government output and productivity. This supplemented the numerous changes that had been previously implemented.

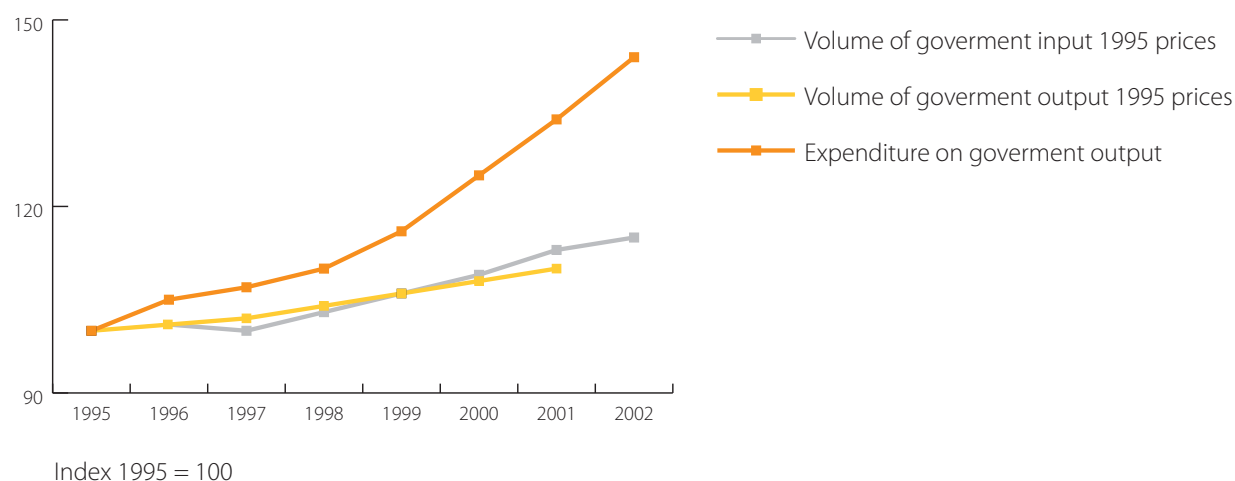
The first changes from the use of inputs to proxy outputs in the United Kingdom national accounts occurred in 1998 when new volume measures for health, education and social security were introduced using output series backdated to 1986 (Caplan, 1998). This work followed from the general agreement that the assumption of zero productivity change in the public service was no longer acceptable. Also, public service reform had enabled change by making a better range of output data available.

Health output measures were based on a combination of a cost-weighted index of hospital output for secondary care and an index of tests, prescriptions dispensed and consultations for primary care. Education volume index was based on the number of pupils at each level of education. This measure was quality adjusted by 0.25% per annum based on trend improvements in the results of the General Certificate of Secondary Education examinations taken by secondary school students aged 14 to 16. This adjustment assumed that examination outcomes were improving because of general improvement in the quality of education. For social security services, the number of claims for different types of benefits was used, the different types being weighted together using the cost of administering each type of claim. Introducing these output measures added, on average, 0.04% each year to the growth rate in the United Kingdom's GDP during the 1986 to 1997 period.



During 2000, the ONS introduced new output measures for administration of justice and agricultural intervention in the national accounts (Baxter, 2000). Output measures were cost-weighted series backdated to 1994 for prisons, legal aid, Crown prosecution service and courts. Prisons output was based on the annual average prison population. Legal aid, Crown prosecutions service and courts outputs were based on the number of cases handled by classification. The agricultural intervention output was based on the Intervention Board's own cost-weighted activity index. These changes resulted in a 0.07% increase in the level of GDP for 1999. The ONS continued to improve in 2001, adding further government output measures to the national accounts for the fire service, local authority personal services and probation (Ashaye, 2001). Direct output measurement in the United Kingdom covered just less than 70% of total government spending on output. The new output measure for the fire service was a weighted index of the number of fires attended and false alarms, the number of hours spent on fire-prevention activities, and data on road accidents and other special services. The output for personal social services was a cost-weighted index of the number of children in different types of care, the number of elderly people in homes and the number of contact hours for home help. Probation was based on the probation service's own cost-weighted activity index. The introduction of these new output series reduced the implied growth rates for these services and, over the 1995 to 2000 period, reduced GDP growth by 0.1%.

Figure 1 shows an index for the output of the United Kingdom government up to 2002 implied by the output measures described above. The implication of the measures was that output had grown much less than expenditure on output and also less than inputs. This prompted concern and criticism that the output measures were not fully capturing increases in government output. Following this, the United Kingdom's government statistician commissioned the independent Atkinson Review of the measurement of government output and productivity.



**Figure 1: United Kingdom government output, expenditure on output, and government input** Source: Pritchard (2003)

The ONS worked closely with the Atkinson Review team and in 2004, on interim recommendations, used improved output data from the National Health Service in the national accounts (Pritchard, 2004a, b). The main changes were to break down treatment categories into smaller, more homogenous categories, changing from 16 to around 1m700 categories, and to increase the coverage of the output measures. This meant that the output measure took much greater account of trends in the use of different types of treatments at a fine detail and were better able to capture changes from low-quality treatments to higher-quality ones.

The Atkinson Review at its conclusion in 2005 made a number of recommendations for improving the measurement of government output and set out several principles to be applied. The principles are:

**Principle A:** *the measurement of government non-market output should, as far as possible, follow a procedure parallel to that adopted in the national accounts for market output.*

**Principle B:** *the output of the government sector should in principle be measured in a way that is adjusted for quality, taking account of the attributable incremental contribution of the service to the outcome.*

**Principle C:** account should be taken of the complementarity between public and private output, allowing for the increased real value of public services in an economy with rising real value of public services in an economy with rising real GDP.

**Principle D:** formal criteria should be set in place for the extension of direct output measurement to new functions of government. Specifically, the conditions for introducing a new directly measured output indicator should be that (i) it covers adequately the full range of services for that functional area, (ii) it makes appropriate allowance for quality change, (iii) the effects of its introduction have been tested service by service, (iv) the context in which it will be published has been fully assessed, in particular the implied productivity estimate, and (v) there should be provision for regular statistical review.

**Principle E:** measures should cover the whole of the United Kingdom; where systems for public service delivery and/or data collection differ across the different countries of the United Kingdom, it is necessary to reflect this variation in the choice of indicators.

**Principle F:** the measurement of inputs should be as comprehensive as possible, and in particular should include capital services; labour inputs should be compiled using both direct and indirect methods, compared and reconciled.

**Principle G:** criteria should be established for the quality of pay and price deflators to be applied to the input spending series; they should be sufficiently disaggregated to take account of changes in the mix of inputs; and should reflect full and actual costs.

**Principle H:** independent corroborative evidence should be sought on government productivity, as part of a process of 'triangulation', recognising the limitations in reducing productivity to a single number.

**Principle I:** explicit reference should be made to the margins of error surrounding national accounts estimates.

## 4.2 Australia

The Australian Bureau of Statistics (ABS) has also investigated output volume measures in a number of (public) service areas.

In Australia's June 2001 national accounts, volume measures for health and education (backdated to 1993/94) were introduced to replace the previous input = output methodology (Australian Bureau of Statistics 2001). For health, the ABS uses a cost-weighted index of volumes in 660 different treatment categories to measure hospital output and cost-weighted indices for nursing homes, specialists, general practitioners and pathologists. The new output-based method increased health output growth by a considerable 2.4 percentage points per annum. The volume estimates for education were mainly based on annual student numbers, with a component for university research output based on the number of publications and student research project completions. The new education measure increased education output growth by 0.4 percentage points per annum.

In 2001, the ABS produced a discussion paper on output volume measures for police, justice services and corrective centres (Northwood, Hinchcliffe, Henderson and Rawnsley, 2001). This paper investigated the way output should be measured in the justice sector and constructed experimental indices for each part. The output of justice services was measured by the number of cases finalised, broken down by court level and jurisdiction. The output of corrective centres was measured by the number of prisoner days in various kinds of detention programmes. The measurement of output of the police was based on estimates of the number of investigations completed, but this was confounded by lack of appropriate data. Because of this difficulty of deriving an index for the police, it was decided that input-based measures should remain for the justice sector, pending better data for police output.

## 4.3 United States

The United States uses input = output methodology for the public sector, despite a long history of productivity measurement. Because health care in the United States is mostly produced by the private sector, the main focus in health output measurement has been on the correct measurement of price changes. In education, the United States government has a larger role and the Bureau of Economic

Analysis is moving toward real output measures of the education function in the United States national accounts (Christian and Fraumeni 2005). This is part of a larger research project to measure real output of federal, state and local governments (Bureau of Economic Analysis 2006).

## 4.4 New Zealand

New Zealand has followed the standards of the United Nations System of National Accounts in measuring the output of the public sector. For the entire non-market government sector, output in **current prices** is measured as the sum of the input costs (state-owned enterprises are considered to be part of the market sector and are measured accordingly). In **constant prices**, most government output measures are calculated using volume extrapolation, where base-year value added is extrapolated using a volume index. For government administration and defence, the volume index used is based on deflated wages and salaries, an input measure. For education and health, the volume measure is based on direct output measures (McGrath 1999, Statistics New Zealand 1998).

For public hospitals, direct output methods were introduced in 1996 to replace a method that was based on a mix of input and output volumes. A volume of output measure for education based on the number of pupils taught at different types of educational institutions has also been introduced. Both these output volume measures have been backdated to 1986.

## 5. South Africa's Experience

### 5.1 Introduction

The purpose of this section is to assess how South Africa measures its government output and its progress towards using direct volume measures. The aim is twofold. Firstly, to determine whether the output data as it is currently compiled can provide meaningful results for use in the Financial and Fiscal Commission's constitutionally mandated basic services simulation model of South Africa. If this is not the case, then secondly, to recommend an appropriate way forward for government to improve its methods of measuring output.

### 5.2 Data Compilation Methods

South Africa prescribes two separate data systems recommended by international organisations to assist countries to compile public sector accounts. The first is the United Nations System of National Accounts (SNA) and the second is the International Monetary Fund's Manual on Government Finance Statistics (GFS).

The SNA presents a set of guidelines that provides a comprehensive conceptual and accounting framework for compiling a macroeconomic database suitable for analysing and evaluating economic performance. The SNA seeks to measure all transactions relating to production, income, consumption, saving and investment in the domestic economy during a specific period, irrespective of whether payment for such transactions takes place within that period or in any other period. It is essentially concerned with the creation and distribution of income in the economy. The activities of economic agents are recorded in accounts such as production, income and expenditure, investment and an account for transactions with the rest of the world.

The GFS is concerned with financial transactions and focuses on cash payments to and from the public sector during a specific period. It provides a database which integrates all public sector transactions in one accounting system. The GFS summarises public sector financial flows in a manner suitable for policy design and places less emphasis than the SNA on the processes of income creation and distribution. However, information extracted from the GFS serves as a prime data source for the compilation of the general governmental accounts in the national accounting framework.

South Africa's data dissemination practices are assessed against the International Monetary Fund's (IMF) Special Data Dissemination Standard (SDDS)<sup>1</sup>. This is a 'best practice' standard and covers four sectors of the economy, i.e. the real, fiscal, financial and external sectors, as well as population, and identifies four dimensions, i.e. data, access, integrity and quality of data dissemination. South Africa has subscribed to the SDDS since 2 August 1996 and started posting its metadata on 27 September 1996. South Africa met the SDDS specifications for the coverage, periodicity and timeliness of the data, and for the dissemination of advanced release calendars on 18 September 2000. The four institutions responsible for the compilation and dissemination of the SDDS prescribed data categories are National Treasury, the South African Revenue Services (SARS), the South African Reserve Bank (SARB) and Statistics South Africa (StatsSA). National Treasury is responsible for compiling and disseminating data on the national budget (budgetary central government operations). The SARS is responsible for compiling and disseminating of data on international merchandise trade. The SARB is responsible for compiling and disseminating data on national accounts, the analytical accounts of the banking sector, the analytical accounts of the central bank, general government operations, consolidated government operations, central government debt, interest rate, exchange rates, share price indices, balance of payments, the international investment position, international reserves and foreign currency liquidity. StatsSA is responsible for compiling and disseminating data on the production index, national accounts, the production price index, consumer price index, labour market and population.

In South Africa the compilation of the national accounts is a joint responsibility of StatsSA and the SARB. StatsSA is officially responsible for estimating gross domestic product based on the production and income approaches, while the SARB is responsible for estimating gross domestic product in terms of the expenditure approach. In addition, the Reserve Bank compiles institutional sector accounts, which include estimates of national saving, household debt and net lending or borrowing among institutional sectors to and from the rest of the world. International practice requires national accounts estimates to be revised at least every five years. StatsSA implemented the 1993 System of National Accounts in 1999 in conjunction with the rebasing and benchmarking of its national accounts estimates. Prior to June 1999, StatsSA only compiled quarterly national accounts estimates. The annual estimates of GDP were derived as the sum of the GDP for the four quarters of the specific year. StatsSA revises, benchmarks and re-bases the GDP estimates on a periodic (5-yearly) basis.

StatsSA is working on a system of certification of all statistics used in the public domain in South Africa. This is encompassed in a document called the South African Statistical Quality Assessment Framework (SASQAF)<sup>2</sup>. The main purpose of the SASQAF is to provide a flexible structure for the qualitative assessment of the statistical

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<sup>1</sup> A detailed description of the SDDS can be found on the IMF's Dissemination Standards Bulletin Board on the Internet at <http://dsbb.imf.org>  
<sup>2</sup> The SASQAF document is currently in draft form and available on the StatsSA website: [www.statssa.gov.za](http://www.statssa.gov.za)

products. The Framework could be used in a variety of contexts, including the following:

- reviews performed in the context of National Statistics System (NSS) work
- self-assessments performed by NSS offices and other data-producing agencies
- assessments by data users, such as financial market participants
- assessments by international agencies such as the International Monetary Fund (IMF).

The SASQAF covers all the dimensions of quality covered in the Data Quality Assessment Framework of the IMF and contains additional quality dimensions.

StatsSA defines data quality in terms of their 'fitness for use'. Whether data and statistical information are fit for use depends on the intended use and on the characteristics of data or information. Data quality can further be defined in terms of eight quality dimensions, namely relevance, accuracy, timeliness, accessibility, interpretability, coherence, methodological soundness and integrity. These dimensions of quality have been identified within the concept of 'fitness for use'. The SASQAF comprehensively covers the various quality aspects of data collection, processing and dissemination. It covers the prerequisites and eight dimensions of quality and each dimension has to be adequately managed if information is to be fit for use; failure to comply with any one dimension will impair the usefulness of the information.

The government accounts used in South Africa differ from the government accounts drawn up in the GFS. The most important differences are highlighted in Table 1 below:



Table 1: Differences between South African reporting format and government statistics in the 1993 SNA and 2001 GFS

	Budget data	GFS	SNA
Basis of reporting	Mainly cash basis; i.e. mainly cash transactions are included in the account. Thus, estimates for consumption of fixed capital and remuneration-in-kind are not included in the account. In addition, the time of recording reflects the cash flow. For example, goods and services are recorded when they are purchased.	Accrual basis; i.e. including all non-cash transactions, for example remuneration-in-kind and consumption of fixed capital, in addition, the time of recording reflects the underlying economic event, not the cash flow. For example, goods and services are recorded when they are used in the production process, not when they are purchased.	Accrual.
Compensation of employees	Does not include compensation of employees paid out to government employees who are engaged in government own account	Does not include compensation of employees payable to government employees who are engaged in government own-account construction in association with a capital project.	Includes compensation of employees payable to government employees, who are engaged in government own-account construction in association with a capital project.
Goods and services	Does not include purchases of goods and services used in connection with a capital project within the context of government own-account construction.	Does not include the value of goods and services used in connection with a capital project within the context of government own-account construction.	Includes the value of goods and services used in connection with a capital project within the context of government own-account construction.
Sales by government	This item is explicitly shown in the government accounts.	This item is explicitly shown in the government accounts.	This item is not shown anywhere in the national accounts. Instead it is used to estimate final consumption by government.
Output, final consumption, savings, disposable income	These variables are not explicitly shown in the government accounts, but the account can be used as a framework to derive values for them.	These variables are not explicitly shown in the government accounts, but the account can be used as a framework to derive values for them.	These variables are explicitly shown in the accounts. Estimates for these variables have been made from data in the government variables.

Source: *National Treasury, Budget Review 2007* (p221).

The last column in the table suggests that government output is not explicitly shown in the reporting format of government accounts, but the account can be used as a framework to derive output values. The same applies if the GFS reporting format were used. If adopted, the SNA reporting format would require output variables to be explicitly shown in the government accounts and would require the estimation of the variables from data in the government accounts.

### *Current status of the measurement of government output<sup>3</sup>*

The national accounts division of the Reserve Bank uses the expenditure approach to compile final consumption expenditure by the general government. The value-added estimates of general government services are derived from cost, using the information obtained from the public finance division.

Statistics South Africa has a unit that collects statistics on the government industry according to the GFS guidelines. As previously noted, however, this is not the official reporting format and government output is not explicitly published.

Literature searches as well as official sources indicate that there is no significant progress being made in using direct volume measures to obtain government output and incorporating them into the respective national accounts as suggested by the SNA (1993). Findings suggest that this may not be a priority issue even though data are available for compiling the output measures.

## 6. Conclusion and Policy Suggestions

Over the past several years, there has been a drive to improve the measurement of output from the public sector to improve the quality of national accounts and to enable measurement of productivity for these services. In the international arena, the United Kingdom is a world leader in its extensive use of direct volume measures of output, and has prioritised the development of this dimension of the national accounts. Australia, Italy and

<sup>3</sup> Information is based on questionnaires directed at StatsSA, National Treasury, Resbank, as well as academics based at various universities in South Africa (see Appendix 1 and 2).

the Netherlands also place priority on developing direct volume measures. Several countries, including Finland, Germany, Sweden and Norway, plan to incorporate them for certain sectors in their national accounts in the next few years.

South Africa already prescribes to the United Nations System of National Accounts as recommended by international organisations to assist countries in compiling public sector accounts.

Statistics South Africa implemented the 1993 System of National Accounts in 1999 in conjunction with the rebasing and benchmarking of its national accounts estimates. However, the country has not made any significant progress in using direct volume measures to obtain government output and incorporating them into its respective national accounts as suggested by the System of National Accounts (1993). Research suggests that the data for compiling direct volume measures for government services in South Africa are most likely available, but are scattered in different places and their quality is still to be assessed.

## 7. Recommendations

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The recommendations made on the measurement of the volume of government output should be implemented over a period of time as it entails financial and other resource implications and institutional reform. The processes can be broken down into the following interrelated recommendations:

1. A process should be put in place by government to continuously evaluate and monitor progress in the use of direct volume measures and their incorporation in the National Accounts.
2. To support a better ability to assess policy initiatives for quality service delivery,
  - a. The national government should regularly update the Provincial Outlook, incorporating new price forecasts and volumetric output indicators that are consistent with SNA 1993.
  - b. Governments (national, provincial and municipal) should support the development of reliable and comprehensive government output data that are consistent with the System of National Accounts 1993 Guidelines.

- c. Governments (national, provincial and municipal) should improve the data on current capital stock, and its performance characteristics.
- d. Non-financial data currently being collected by governments (National, Provincial and Municipal) that are recorded in their respective annual performance plans or service delivery and budget implementation plans should be expanded, standardised and synchronised with the System of National Accounts 1993 format.
3. Government should build the capacity of those departments that have difficulty in generating data that are standardised, credible and that fail to meet the standards as suggested by the System of National Accounts as well as the South African Statistical Quality Assessment Framework. There should be a dedicated fund to assist municipal, provincial and national governments in meeting these new requirements - this avoids an unfunded mandate.
4. These processes require that Statistics South Africa, the South African Revenue Services, National Treasury and the Reserve Bank should have a framework in place in order to work together coherently and to synchronise their data compilation methods and reporting format for South Africa.

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## Appendix 1

### **Questionnaire directed at National Treasury, Statistics South Africa, and the Reserve Bank**

#### **Assessing South Africa's experience with measuring the volume of government output:**

1. What is South Africa's progress in using direct volume measures to obtain government output and incorporating them into its respective National Accounts as suggested by the System of National Accounts (1993)?
2. If none, is this a priority issue at all?
3. Is there a component in the organogram dedicated to compiling these measures, e.g. application of National Accounts Section at StatsSA?
4. Is there a position paper yet outlining, for example, the feasibility of the compilation of such government output measures (health, education, social development, etc.) – e.g. do such papers exist on the StatsSA website in the context of Natural Resource Accounting for Water, Minerals and Energy?
5. If such papers exist for the government output, what is the status, e.g. drafting phase, comments phase or other?
6. If not, are there any plans to do this?
7. Are there any government output proxies developed at StatsSA/NT/RBSA up to the present that may not yet be incorporated in the System of National Accounts? Can these be made available to us yet?

## Appendix 2

8

### Questionnaire directed at academics in various universities in South Africa

1. Have you, or anyone whom you are aware of, done work in using direct volume measures to obtain government output in South Africa?
2. If your answer to question 1 was yes, please indicate below which government services were covered:
  - Health
  - Education
  - Housing
  - Transport
  - Water
  - Electricity

May we get access to the report/s and reference them in our review? (Please tick below and if the answer is yes kindly send the report or the reference)

\* yes/no

- 3 If your answer to question 1 was no, what do you think are the major hurdles inhibiting such work?



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## Primary Health Infrastructure and Health Treatment

Marlé van Niekerk & Servaas van der Berg

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## Summary

### Background

This study deals with primary health infrastructure, more specifically an attempt to ascertain its impact on health outcomes. This is undertaken against the background that primary health care is universally acknowledged to be a far more cost-effective and appropriate way of improving health care for the poor than secondary and specifically tertiary health services.

However, the focus here is on primary health care infrastructure. An important issue is the extent to which infrastructure interacts with other facets of primary health care. In particular, primary health infrastructure, specifically clinics, can only be potentially effective if they are well equipped, staffed and maintained. The question of infrastructure is thus here largely focused on access to primary health services. It should not be forgotten that many primary health services are also provided by the private sector, in particular by general practitioners, whose services often substitute for public clinics. There is evidence that the demand for health services in South Africa, even among the poor, reflect a strong bias towards private health care because of quality concerns with public health services. Providing more clinics if they are not used will accomplish little in the absence of a greater focus on quality of health service provision in clinics.

### Methodology

This study uses two methods to determine the likely impact of primary health infrastructure on health outcomes. The literature overview draws from the international empirical literature that is much influenced by Grossman's health production model (Grossman, 1972). This literature is substantial, but the focus is less often on health infrastructure per se and more on the whole package of primary health care. Moreover, the literature covered is mainly that in the developing country context, particularly as access to primary health care is mainly a developing country deficit, while such care is already well established in developed countries.

The second method used in the study deals with estimating empirically, using probit and multinomial logit (logistic) regression models, the impact of distance from public health facilities on the likelihood that people who had been ill or injured sought treatment (or in the case of the multinomial logits, that they did not seek treatment), while statistically holding constant other possible explanatory variables such as income or membership of a medical aid fund. Even if treatment is related to distance, this would not of course guarantee that such treatment would

improve health outcomes. But if treatment is unrelated to distance, it would imply that health outcomes, insofar as they depend on treatment, would not be dependent on the distance to public facilities. Two types of models are estimated, simple probit models and multinomial logit models, allowing for different treatment responses.

## **Findings**

The findings from the literature are fairly convincing. There is substantial evidence that health outcomes throughout the world are only moderately responsive to public health spending. The reason for this lies in the fact that there are so many other determinants of health outcomes (nutrition, clean water, sanitation, housing, hygiene, education, personal incomes and lifestyle), so that public health spending can only play a subsidiary role. Moreover, inefficiencies in health care services often further weaken the impact of such spending.

In the poorer countries, there is some evidence that expanding access by the provision of more public clinics improves the likelihood of treatment, but even in these cases there is little evidence that more public clinics per se improve health outcomes. In such countries, though, it appears that investing more in quality of health care brings higher returns in terms of health outcomes. In more developed countries, where the public clinic network is already more advanced, there is not even evidence that providing more clinics improves treatment.

The application of the methodology referred to above to a very recent South African dataset (the General Household Survey of 2006) shows no evidence that distance from public clinics acts as a major constraint on the treatment of ailments. Even in the Eastern Cape, where the public clinic network is least developed, distance does not determine treatment seeking; patterns of getting treatment actually hardly differ between those close to and those far from clinics, even though the latter are often poorer and less likely to have medical aid. If treatment does not differ, this dataset indicates that distance, through its impact on treatment, is not a major factor in the quality of care received and thus on health outcomes. The results are similar whether one uses a simple outcome variable, the probability of seeking treatment, in the probit models, or the outcome of not seeking treatment as the reference outcome compared to the alternatives of various providers from whom treatment can be sought.

Admittedly, this dataset is relatively poor in variables measuring health outcomes; the richer dataset provided by the Demographic and Health Survey of 2003 was still not available when this study was undertaken. But earlier studies in South Africa confirm that demand for health services (treatment) was no longer much influenced by distance after the expansion of the clinic network after the transition to democracy. The only study using data from an earlier period (1993) did find evidence that distance still played a role in treatment at that time. The change in

the effect of distance may be related to the expansion of the clinic network as one of the major health initiatives of the new dispensation. Moreover, the findings are in accord with the international evidence, that distance does not seem to play a role in health outcomes once the public clinic network is largely in place.

## **Conclusion**

Health outcomes are thus not influenced by the availability of public clinics in South Africa. Far more important is the quality of health services provided, which depends on the quality, maintenance, staffing and equipping of clinics, and how well staff do their job. Capacity constraints and other shortcomings in some provinces lead to situations where the quality of clinics is very poorly rated by clients, and an improvement in these dimensions is more important than a further expansion of the clinic network.

## **Recommendations**

The equitable share for provinces already makes provision for an infrastructural component, and this study finds no evidence arguing for more substantial provision of funding to provinces for building clinic infrastructure. One possibility for calculating the infrastructure share of the provinces can be derived from the data in the General Household Survey of 2006 (GHS2006), viz. that the population which has far to travel to clinics be weighted heavily in a clinic infrastructure need index. However, the caveat remains that funding should not encourage provinces to build more clinics, but rather to use infrastructural and other funds in combination to improve the quality of the clinic network.

## 1. Introduction

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It is widely acknowledged that primary health care is the form of health care that makes the biggest difference to mortality rates, particularly for the poor and rural populations. At the heart of primary health care lies clinics. Their construction, distribution, staffing and equipping are central to improved health performance and to meeting the health needs of that part of the population largely dependent on public health services.

The quality of the health care provided at clinics also has a major influence on how well primary health care functions. This depends on staffing and equipping as well as the actual quality of the service provided. However, for purposes of this paper the focus is on the infrastructure, taken here to be the distribution of clinics across geographical space, which provides access to primary health services. The quality of the services will not be discussed in any great detail, though it should be noted that access to clinics means little if it is not also associated with well staffed, well equipped facilities and friendly and efficient service, aspects in which South African public health services are quite deficient, as surveys have shown and as will be indicated in this report.

The report is structured as follows: First, an overview from the literature is presented on the role of primary health care facilities, and infrastructure in particular, in health care in developing countries. This is followed by a discussion of health services in South Africa, focusing on primary health care and particularly access to services and health spending, drawing on both some international experiences and on earlier research by the present authors and colleagues at the University of Stellenbosch. Thirdly, an empirical investigation on access to health services in South Africa was undertaken, using a very recent household level dataset, the 2006 General Household Survey (GHS2006). Unfortunately it was not possible to obtain the Demographic and Health Survey for 2003 from the Department of Health. The GHS survey contains some information on health treatment and related issues, but not directly on health outcomes. Finally, the conclusion draws some inferences on the foregoing analysis and discusses implications for inter-governmental funding of health infrastructure in South Africa.



## 2. The Role of Primary Health Care and Infrastructure in Developing Countries

### 2.1 Conceptual Issues

#### 2.1.1 Background to the measurement of health outcomes

The experience of good health by an individual is a multi-faceted phenomenon. It refers to several dimensions of physical functionality, quality of life, consumption of health-enhancing goods and services, and prospects with regard to future health status. The measurement of health status is further confounded by the fact that good or bad health is a latent construct that is not easily observable. Objective measurement of individual health status (e.g. anthropomorphic measurements, physical examinations and bio-medical testing) can provide reliable information, but comes at a high cost. For this reason most health surveys rely on self-reported measures of health (e.g. incidence of health conditions over a recall period, access to closest health services, treatment sought over a recall period). In some surveys it also includes some self-assessment of health (e.g.: How would you rate your current health status?). These self-assessed measures of health should not be used as a short-cut measure in surveys (Lokshin & Ravallion, 2005: 22), as they are not very suitable for interpersonal comparisons. Yet these measures often correlate quite well with other objective and observable measures of health (Lokshin & Ravallion, 2005: 4). For cross-sectional international studies of health, some descriptive statistic is needed for the aggregated health status of citizens of a country. The most useful macro indicator of health status is infant or child (under 5) mortality (Filmer & Pritchett, 1999).

#### 2.1.2 Definition of primary health care

Primary health care refers to a set of services that is commonly thought of as a minimum consumable input to achieve the eradication of wide-spread ailments. The specific dimensions of such health interventions may differ from study to study. Filmer, Hammer & Pritchett (1999) refer to "curative care in primary facilities<sup>1</sup>, preventative actions aimed at health improvement and public health campaigns."

<sup>1</sup> *Primary facilities referred to health care facilities that were easily accessible at the local level.*

The World Development Report 1993 (World Bank 1993) defines primary health care as programmes related to family planning, all pregnancy-related services, treatment of tuberculosis, prevention and treatment of sexually transmitted diseases and common serious illnesses of children (e.g. diarrhoeal infections, acute respiratory infections, measles, malaria, acute malnutrition).

The National Health Act (No. 61 of 2003) describes primary health care as interventions deemed as primary care by the minister of health. The interventions that this paper will be focusing on are in accordance with the classification of programmes by the Department of Health (DoH) Norms and Standards (DoH, 2000). The following are relevant demarcations set forth by these norms and standards:

- A specified minimum level of services for 24 identified primary health care interventions (e.g. woman's reproductive health, TB, etc.).
- Core standards, which include minimum levels of functioning equipment, supplies, competencies of staff and services available. Explicit infrastructure norms include means of communication, toilets, storage facilities, procedure rooms with washable surfaces, consultation rooms with water basins, etc.
- Management standards, which include up-to-date inventory of equipment and a list of required repairs.
- Core norms include increasing access to primary health care facilities.

### 2.1.3 Definition of infrastructure

Several forms of infrastructure co-exist. Although the impact of several types of public infrastructure (e.g. water and sanitation services) on health outcomes is well documented, this paper focuses on public infrastructure that is purpose-built for the delivery of primary health care services. It is important to note that the aim is not to extend the scope to the delivery of secondary (provincial hospitals and clinics) and tertiary (training and research hospitals) health care services. These services have a very specific role to play in public health care that warrants a different approach to the one this paper takes. As will be demonstrated later, these interventions are ineffective at targeting the poor and primary health outcomes. For this reason the analysis is confined to local clinics and health centres.

## 2.2 Theoretical Aspects of Health Production

Macroeconomic studies often include the stock of human capital as a productive resource in the economy. Health is an important input into human capital. The growth literature focuses on the effect of public health expenditure on economic growth. Most microeconomic studies track the influence of income on health (Baldacci et al., 2003:1) or try to determine the direction of causality between the two. Other inputs into individual health status also form part of this literature. This paper is concerned with the nexus between the macroeconomic and microeconomic literature on health.

### 2.2.1 Grossman's model

Microeconomic analyses of health production are founded on the theoretical base provided by Grossman (1972). Utility is derived from the production of health in the form of greater productivity and quality of life. This utility function is subject to a budget constraint, usually a proportion of household income that can be devoted to the consumption of health-enhancing inputs. The utility function is also subject to the way in which good health can be achieved. Grossman proposes that social, economic and environmental factors affect health production. Rivera (2004) extends these factors to biological, socio-economic, life style and medical resources. The process of transforming these input factors into health outcomes can be expressed in a functional form with elasticities for different inputs. This is commonly referred to as the health production function:

$$\delta HS_i = HS_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where  $HS_i$  refers to an individual's health status;  $HS_0$  to initial health status that is both genetically determined and influenced by environmental factors;  $\beta_1 X_1$  is a vector of demographic descriptors;  $\beta_2 X_2$  is a vector of private health resources,  $\beta_3 X_3$  is a vector of public health resources and  $\varepsilon$  is an error term.

By optimising the aforementioned three functions (the utility, budget and health production functions), the demand for health services can be derived. Of the determinants of health status, the impacts of income and education are the strongest and most widely researched.

Furthermore, there is a strong mutually enforcing interaction between an individual's health status and level of education (Agenor & Moreno, 2006:23). The focus of this study falls on the publicly provided services that impact on health status. In the majority of studies of this nature the consumption of public health goods is proxied by per capita health expenditure. For this case, the interest is in the differential impact of the capital and recurrent components of public health expenditure.

### 2.2.2 Public versus private inputs

Health outcomes rely on a range of inputs that can be provided by either the public or the private health sector. A case for public provision emerges under the following conditions (Jimenez, 1994; WDR, 1993:18):

- Externalities in consumption and/or production of health
- Scale economies in the public health sector that cannot be realised in the private sector
- Market failures in the credit, insurance and labour market<sup>2</sup>
- Lack of insurance market for primary health outcomes (Filmer, Hammer & Pritchett 1999: 37)
- The non-exclusionary nature of service provision (e.g. infectious disease control)
- Asymmetries of information (especially about benefits of health care)
- Equity and poverty concerns.

A trade-off exists for the consumer between the public and the private sector health services, but the relationship between these two sectors is not limited to that trade-off. Firstly, the conventional effects of public economic infrastructure on growth are well documented in the infrastructure literature. Agenor & Moreno (2006: 6) identify three conventional channels of influence: public infrastructure raises the productivity of private inputs; it has complementary effects on private investment; but it can also have crowding-out effects. They also propose four new channels (Agenor & Moreno 2006: 11): indirect effects on labour productivity; lowering adjustment costs in

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<sup>2</sup> *The health labour market is a highly skilled segmented labour market that relies on public demand for some specialised areas, as private agents would not have a big enough demand for these services.*

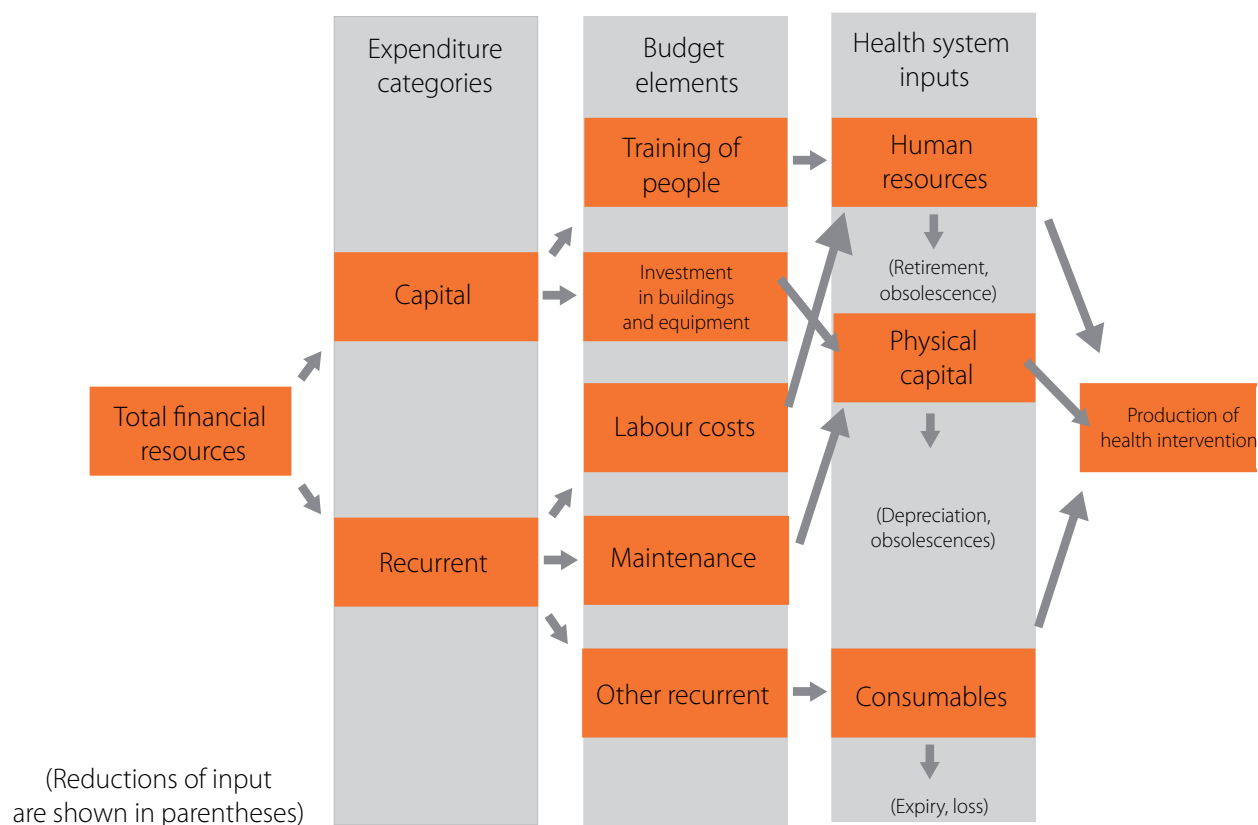
the private sector; effects on the durability of private investment; and improved health, nutrition and educational outcomes. Although their study focuses on the general case for public infrastructure, the same arguments apply to the specific case of public health infrastructure.

Secondly, public spending on health lowers the price of health inputs to the consumer of these services through a subsidy effect. The impact of this subsidy depends on:

- the composition of public spending
- public sector efficacy
- the net impact on use of public services (as reflected in the effective demand for health care of the consumer)
- the extent to which different inputs make different contributions to health production (Filmer, Hammer & Pritchett 1999).

### 2.2.3 Classification of different public inputs

Health infrastructure forms part of a greater network of public infrastructure in an economy. For this reason the efficient functioning of health infrastructure is contingent on investment in other forms of economic infrastructure (Agenor & Moreno 2006: 25). Public investment in roads and transport services, water and sanitation facilities and electricity provision has a large impact on access to health care facilities and efficient service delivery. Within the health care sector there are also interdependencies between different levels of health care facilities (e.g. general hospitals and health centres), as the possibility of referral between levels exists (Mitropoulos et al., 2006: 2).



**Figure 1: Classification of public health expenditure categories**

Source: World Health Report 2000

Figure 1 offers a scheme to classify public expenditures according to economic, budgetary and functional categories. It is important to note that all of these classes (e.g. investment in buildings and equipment) are interdependent on other classes (e.g. maintenance or training) to ensure health care provision<sup>3</sup>. How these expenditure items interrelate is specific to the nature of services provided by the health care facility. Furthermore, technological innovations often change these interactions over time. Soares (2007) cites the positive access effects of technology (e.g. by lowering cost of immunisation) which have a significant impact on mortality. Advances like these can shift resources to other expenditure categories.

## 2.2.4 Evidence on the relationship between inputs and health outcomes

Most studies focus on the effect of total public health expenditure on health outcomes. In this regard health expenditure proxies for the availability of health production facilities (Fayissa & Gutema, 2005). The conclusions that follow were made by various authors.

### **Cross-country evidence**

Filmer & Pritchett (1999) show that cross-country differences in health spending have low explanatory power for health outcomes (although other social and economic variables do a good job of explaining health outcomes). They find a small and insignificant effect of public expenditure on infant mortality. They also note that the incidence of health spending (how beneficiaries are distributed across the population) is very important in developing countries, as poor health outcomes are strongly correlated with low income.

Baldacci et al. (2003) use a latent variable model and find that the effect of public health spending on health status is not clear: the relationship is of the right sign but statistically insignificant. Using their approach the calculated elasticities of government spending on health outcomes are higher than in conventional production functions for a sub-sample of low-income countries.

Fayissa & Gutema (2005) undertook a panel study of 31 African countries (1990 – 2000) and found a very strong effect from income to health. Health expenditure has a negative coefficient, which points to inefficient health spending.

### **Country-specific evidence**

In Hungary, counties with the worst health status were also the ones with the lowest level of health resources, and the converse was true (Orosz & Burns, 2000: 14). It was not clear whether both these factors were driven by the effects of socio-economic variables.

Rivera (2004) employed an ordered probit model on self-assessed health and a Heckman two-step for the probability of being bedridden. He found significant positive effects of average public health expenditure per capita on self-assessed health status in Spain (Rivera, 2004: 106).

Rivera & Currais (2004) conducted a dynamic panel study on 17 Spanish regions (1973 – 1999) to investigate the effect of public investment expenditure on health and (via better health outcomes and human capital) total factor productivity. They found no significant effects, even with lags.

In their review study of the subject, Filmer, Hammer & Pritchett (1999: 16-20) found no consistent evidence that infrastructure projects that create new facilities lower infant mortality.

A number of possible explanations emerge for the evidence stated above.

- Filmer and Pritchett (1999) hypothesised that the transformation of public health spending into improved health outcomes was dependent on a series of linkages (see Figure 2) Their explanation for the weak relationship was that inefficiencies were possible at any point (or number of points simultaneously) in this process.
- It is possible for consumers to switch between the public and the private sector. By-passing public facilities means that expenditure on those facilities did not have a significant impact on health outcomes (Filmer, Hammer & Pritchett, 1999: 25). For this reason it was important to distinguish between the effect of public spending on use of **public** facilities and the effect on the use of **total** facilities (Filmer, Hammer and Pritchett, 1999: 33).
- Another candidate explanation is that the elasticity of demand for treatment in public health services could be very small. This is true for less serious conditions, depending on pricing of services, timing of symptoms and treatment, the severity of symptoms and effectiveness of treatment (Filmer, Hammer & Pritchett, 1999: 35-36).
- The larger the private health sector, the smaller the impact of public expenditure (Filmer, Hammer & Pritchett, 1999: 37).
- Rivera (2004:100) found that life expectancy and mortality were not very sensitive to short-run changes (e.g. changes in public inputs).



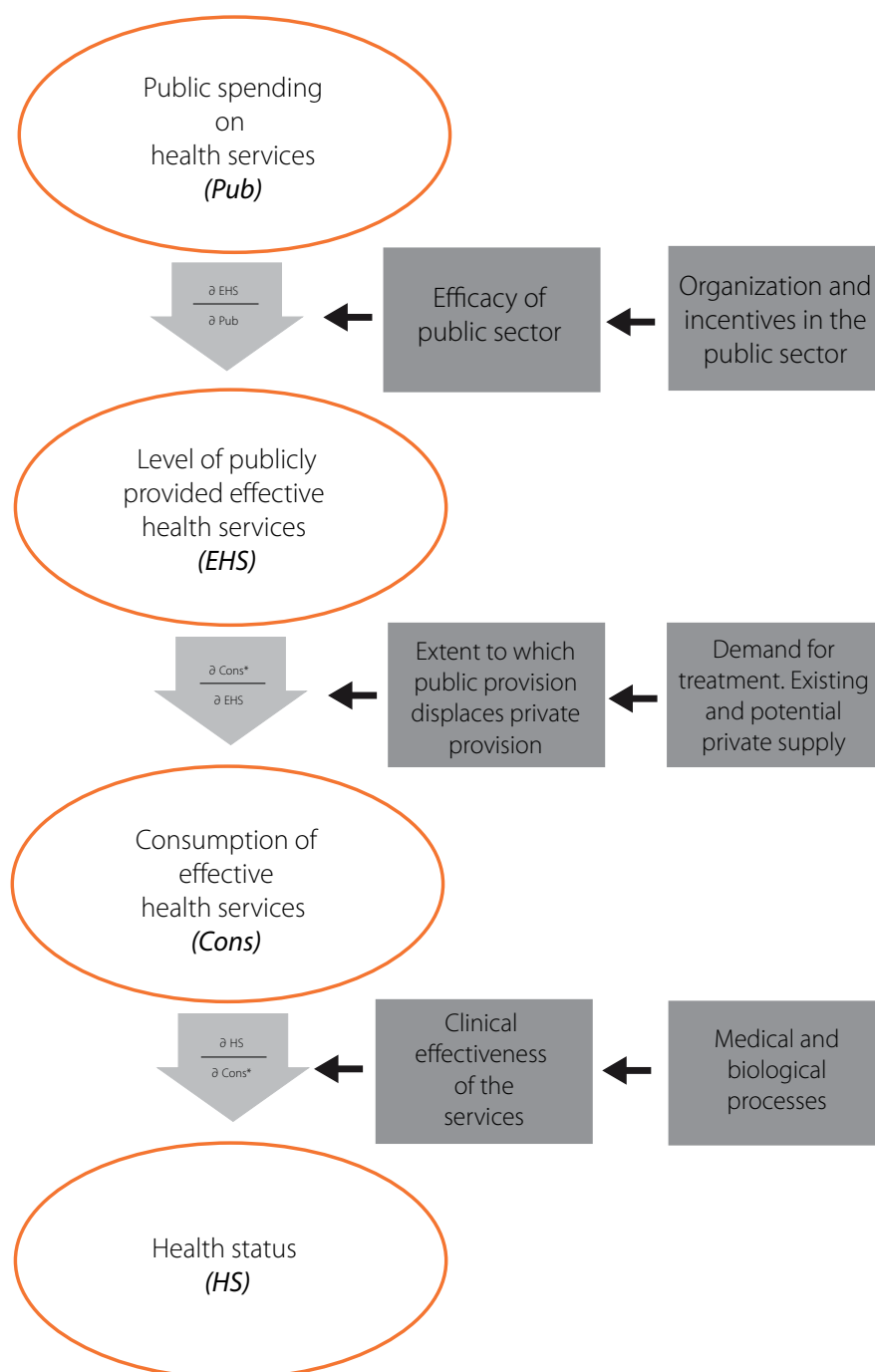


Figure 2: From public spending to better health

Source: Filmer & Pritchett, 1999

### 2.2.5 Supply versus demand of services

Mahmood & Ali (2002:754) found in their investigation of health care in Pakistan that despite increases in the number of health care facilities and the subsidisation thereof, a move towards private health care facilities took place.

It is important to keep in mind that supply interventions will not necessarily have the desired effect on net uptake of public health care services. If demand-side factors (e.g. consumer preferences for competing private services) are driving low utilisation of public services, interventions to increase the supply thereof will not have the desired effect. In this sense Agenor & Moreno (2006:38) proposed that countries should invest in demand-driven infrastructure needs, taking possible rehabilitation and improvement of old facilities into account.

### 2.2.6 Evaluating productivity: Efficiency versus equity concerns

So far the focus fell on the efficiency of the public health sector. Yet equity concerns should also be addressed. Although allocations to hospitals made up a large share of budgets in most African countries (Castro-Leal et al., 1999), government subsidies were not well targeted at the poor. This was measured by means of a benefit incidence study. The unit cost or subsidy was calculated or imputed to a household (or individual). These households were then aggregated for groups with similar characteristics (e.g. income groups) to make comparisons. The distributional impact of health spending at higher levels (secondary and tertiary) was perverse (Filmer, Hammer & Pritchett, 1999:49), as it benefited wealthier households disproportionately. Furthermore, primary health care programmes effectively targeted vulnerable groups such as children, women and the elderly (World Bank 1993: 72). This provided a strong motivation for improvement of primary health care services.

## 2.3 South African Health Infrastructure in an International Context

In order to do meaningful analyses of health outcomes in South Africa, representative data sets that contain the necessary variables are needed. In this sense no single data set has all the relevant information, and for that reason the analysis presented here is supplemented by other sources.

The most comprehensive survey on health outcomes in South Africa is the Demographic and Health Survey (DHS). However, this survey does not capture income very well. It is only available for 1998; the 2003 data set has not yet been released by the DoH. The General Household Survey (GHS) is undertaken annually from a large, representative

sample of households. It also includes a number of questions on the utilisation of health services, but not on health outcomes. As it forms part of a survey which explores the situation of households in depth, it enables good analyses of correlates to public services. Data on the public health care system can be obtained from a number of sources: public health expenditure data can be found in the relevant Provincial Budgets and Expenditure Reviews of National Treasury, and data on facilities can be found in the Health Systems Trust Health Facilities Audit and the Health Systems Trust District Health Barometer (Barron et al., 2006). The Health Systems Trust Facilities Audit gives a detailed account of the state of infrastructure and equipment at health care facilities. This can be related to the guidelines set out by the DoH in the Norms and Standards. In their study of the efficiency of Gauteng hospitals, Kibambe & Koch (2007) lamented the lack of good quality data at frequent and regular intervals for studies of this sort. The same can be said of public clinics.

Respondents in the GHS in 2006 were asked whether they or members of their household had been ill in the past month and to identify the illness from a given list (see Table 1 below). Sadly it did not provide good information on preventative health services or perinatal services, as these were not included in the list.

**Table 1: Incidence of listed illnesses under respondents who were ill in the last month**

		% of pop	% of ill
Flu	3 352 132	7.08%	51.38%
Diarrhoea	273 856	0.58%	4.20%
Severe trauma	175 056	0.37%	2.68%
Tuberculosis	276 660	0.58%	4.24%
Substance abuse	22 309	0.05%	0.34%
Depression	171 971	0.36%	2.64%
Diabetes	283 853	0.60%	4.35%
Bloodpressure	582 100	1.23%	8.92%
HIV / AIDS	74 604	0.16%	1.14%
STD's	19 406	0.04%	0.30%
Other	1 291 880	2.73%	19.80%
Total	6 523 827	13.78%	

When perusing the international literature to find levers to improve primary health care, six factors emerge: greater access to health care facilities, higher utilisation of health care services at the facilities, health finance reforms to promote service uptake, health sector reforms and improvement of the quality of health care. The remainder of this chapter will look at some international experiences and the current South African situation in each of these dimensions.

### 2.3.1 Access

Access to facilities is the first hurdle that potential users of public health care services face: if the facilities cannot be reached then the services rendered by those facilities cannot be consumed. Collier et al. (2002:7) found in a study on Ethiopia that a reduction of 1 km distance from a clinic increased usage of services from that clinic by 1.2 - 1.7%. A simulation study for Mozambique showed that improving access to minimal distances to health care facilities substantially improved treatment and outcomes (Lindelow, 2004:74).

In South Africa the choice of facility usually used by an individual was highly influenced by the type of facilities that were easily reached. In this regard, public hospitals were utilised more predominantly in provinces that had a larger proportion of urban households, whereas public clinics were visited extensively in provinces with a greater rural population (see Table 2 below). Overall, 58% of households usually called on a public clinic when a household member fell ill, with another 20% using other public health care facilities. Therefore, the public health sector, especially the clinics, played a very important role in extending health care services across the provinces in South Africa.

Table 2: Patterns of usual health care facility by province

	Province									
Usual HCF	WC	EC	NC	FS	KZN	NW	GP	MPU	LIM	Total
Public Hospital	1 103 384 23.28%	1051 559 14.93%	1 14 220 12.59%	362 136 12.26%	2 480 293 25.52%	307 620 7.98%	1 770 383 19.23%	428 040 13.18%	1 249 213 22.05%	8 866 848 18.73%
Public Clinic	1 679 118 35.43%	4 762 169 67.70%	609 525 67.19%	1 672 083 56.59%	5 809 800 59.79%	2 629 486 68.23%	4 231 529 45.96%	2 094 552 64.48%	3 867 188 68.26%	27 355 450 57.79%
Public Other	228 286 4.82%	9 553 1.33%	296 0.03%	1 222 0.04%	4 779 0.05%	15 588 0.40%	26 818 0.29%	6 919 0.21%	11 304 0.20%	304 765 0.64%
Private Hospital	244 551 5.16%	93 635 1.33%	15 044 1.66%	94 381 3.19%	380 578 3.92%	96 573 2.51%	563 801 6.12%	68 507 2.11%	59 516 1.05%	1 616 586 3.41%
Private Clinic	123 827 2.61%	29 851 0.42%	11 384 1.25%	66 414 2.25%	93 615 0.96%	103 852 2.69%	380 452 4.13%	34 633 1.07%	34 635 0.61%	878 663 1.86%
Private Doctor	1 326 682 27.99%	1 049 287 14.90%	152 439 16.80%	716 555 24.25%	847 677 8.72%	688 742 17.87%	2 155 874 23.42%	561 957 17.30%	396 205 6.99%	7 895 418 16.68%
Traditional Healer	2 736 0.06%	11 719 0.17%	0 0.00%	12 919 0.44%	30 238 0.31%	2 687 0.07%	16 835 0.18%	14 515 0.45%	41 891 0.74%	133 540 0.28%
Pharmacy	24 947 0.53%	17 140 0.24%	2 780 0.31%	13 636 0.46%	17 565 0.18%	8 291 0.22%	33 767 0.37%	26 893 0.83%	2 373 0.04%	147 392 0.31%
Employer	3 331 0.07%	0 0.00%	0 0.00%	9 355 0.32%	0 0.00%	1 068 0.03%	444 0.00%	0 0.00%	0 0.00%	14 198 0.03%
Private Other	0 0.00%	2 749 0.04%	560 0.06%	0 0.00%	802 0.01%	0 0.00%	0 0.00%	6 680 0.21%	139 0.00%	10 930 0.02%
Don't Know	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	6 731 0.07%	0 0.00%	0 0.00%	6 731 0.01%
Unspecified	3 027 0.06%	16 722 0.24%	932 0.10%	6 137 0.21%	52 462 0.54%	0 0.00%	19 640 0.21%	5 802 0.18%	2 754 0.05%	107 476 0.23%
Total	4 739 889 100.00%	7 044 384 100.00%	907 180 100.00%	2 954 838 100.00%	9 717 809 100.00%	3 853 907 100.00%	9 206 274 100.00%	3 248 498 100.00%	5 665 218 100.00%	47 337 997 100.00%

How these facilities were reached gives a further indication of the accessibility of primary health care services (see Table 3 below). As public hospitals were predominantly situated in urban areas, they were usually reached by car (either taxi or private car). Public clinics were reached on foot or by taxi by 92% of households who usually visit them. The high percentage of households that were within walking distance (62%) indicated that these facilities were easily reached by a majority of the potential users, although some had to walk far to reach a health care facility.

Table 3: Transport to health care facilities usually used

	On foot	Taxi	Bus	Train	Own	Other	Unspec	Total
Mode of transportation to hospital								
Public Hospital	1 223 746 13.80%	5 635 359 63.56%	646 009 7.29%	28 898 0.33%	1 026 465 11.58%	286 240 3.23%	20 131 0.23%	8 866 848 100.00%
Private hospital	146 867 9.09%	385 954 23.87%	22 363 1.38%	3 770 0.23%	1 039 493 64.30%	16 179 1.00%	1 960 0.12%	1 616 586 100.00%
Mode of transportation to clinic								
Public Clinic	16 955 070 61.98%	8 223 083 30.06%	958 920 3.51%	18 539 0.07%	664 226 2.43%	447 120 1.63%	88 492 0.32%	27 355 450 100.00%
Private Clinic	347 048 39.50%	101 335 11.53%	15 706 1.79%	0 0.00%	404 103 45.99%	7 611 0.87%	2 860 0.33%	878 663 100.00%
Private Doctor	2 791 779 35.36%	1 345 965 17.05%	89 173 1.13%	19 829 0.25%	3 547 266 44.93%	95 333 1.21%	6 073 0.08%	7 895 418 100.00%

The same patterns can be found when looking at the travelling time to different health care facilities. Travelling times to hospitals were consistently longer, as one would expect because there are fewer hospitals and they are concentrated in cities or towns (see Table 4 below). Of the households that usually attended a public clinic, 24.24% were more than an hour from a public hospital. Should they be referred to a hospital by the clinic, this could prove to be a serious impediment.

Table 4: Travelling time to hospital (mins)

Usual HCF	0-14	15-29	30-44	45-59	60+	Don't know	Unspec	Total
Public Hospital	1 013 615 11.43%	2 737 296 30.87%	2 725 394 30.74%	853 519 9.63%	1 460 139 16.47%	46 842 0.53%	30 043 0.34%	8 866 848 100.00%
Public Clinic	1 332 761 4.87%	6 691 188 24.46%	8 177 312 29.89%	4 143 183 15.15%	6 630 976 24.24%	262 813 0.96%	117 217 0.43%	27 355 450 100.00%
Public Other	17 422 5.72%	150 086 49.25%	104 175 34.18%	11 747 3.85%	18 216 5.98%	3 119 1.02%	0 0.00%	304 765 100.00%
Private Hospital	410 721 25.41%	630 515 39.00%	364 477 22.55%	141 167 8.73%	69 453 4.30%	168 0.01%	85 0.01%	1 616 586 100.00%
Private Clinic	170 512 19.41%	307 201 34.96%	272 061 30.96%	80 195 9.13%	42 512 4.84%	2 370 0.27%	3 812 0.43%	878 663 100.00%
Private Doctor	1 653 633 20.94%	2 972 529 37.65%	1 990 554 25.21%	625 167 7.92%	615 721 7.80%	22 297 0.28%	15 517 0.20%	7 895 418 100.00%
Traditional Healer	5 525 4.14%	10 991 8.23%	76 613 57.37%	12 208 9.14%	27 073 20.27%	424 0.32%	706 0.53%	133 540 100.00%
Pharmacy	29 733 20.17%	46 654 31.65%	42 617 28.91%	24 626 16.71%	3 762 2.55%	0 0.00%	0 0.00%	147 392 100.00%
Employer	8 048 56.68%	3 730 26.27%	1 443 10.16%	977 6.88%	0 0.00%	0 0.00%	0 0.00%	14 198 100.00%
Private Other	139 1.27%	1 228 11.24%	1 085 9.93%	6 680 61.12%	1 798 16.45%	0 0.00%	0 0.00%	10 930 100.00%
TOTAL	4 642 109 9.83%	13 551 418 28.70%	13 755 731 29.31%	5 899 469 12.49%	8 869 650 18.78%	338 033 0.72%	167 380 0.35%	47 223 790 100.00%



Clinics were fairly well distributed to minimise the travelling time for potential users: 63% of the population was within 30 minutes of a clinic. Attention should be given to the 10.8% of households that usually consulted a public clinic when illness struck, but were situated more than an hour from a clinic. Of the households that were more than an hour from a clinic, 72% still cited the public clinic as the health care facility that they usually consulted. This was probably because there were no closer facilities available to them.

Table 5: Travelling time to clinic (mins)

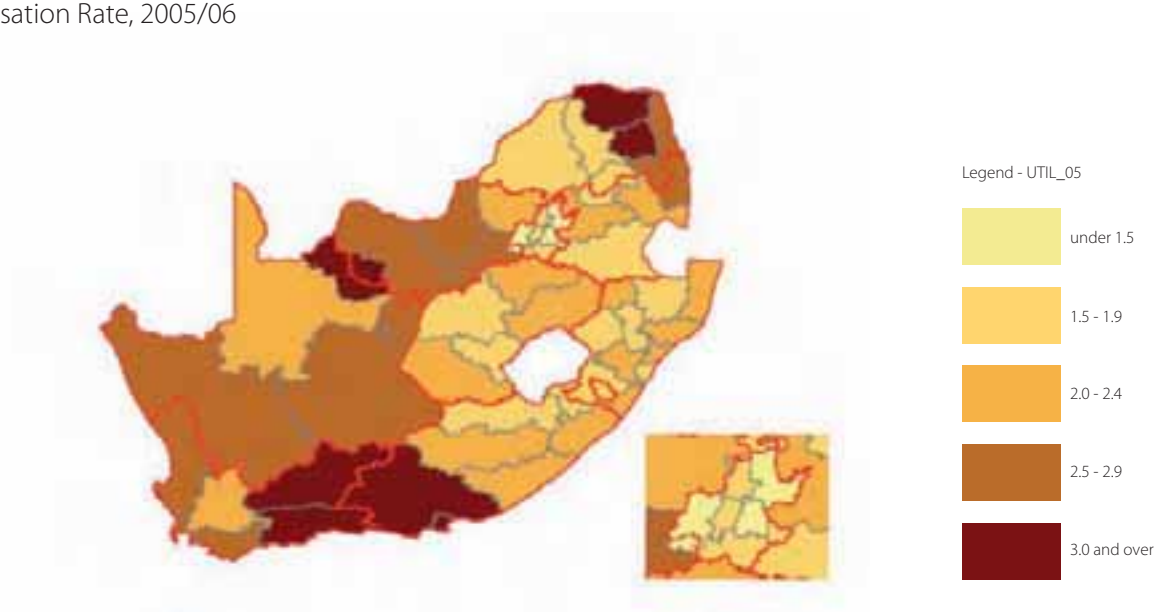
Usual HCF	0-14	15-29	30-44	45-59	60+	Don't know	Unspec	Total
Public Hospital	2 464 183 27.79% 18.97%	2 873 057 32.40% 17.44%	2 096 563 23.64% 20.61%	543 755 6.13% 17.17%	789 834 8.91% 19.27%	45 802 0.52% 30.69%	53 654 0.61% 31.30%	8 866 848 100.00% 18.78%
Public Clinic	6 363 404 23.26% 48.98%	9 371 580 34.26% 56.89%	63 11 912 23.07% 62.04%	22 21 596 8.12% 70.15%	29 54 942 10.80% 72.09%	53 198 0.19% 35.62%	78 818 0.29% 45.98%	27 355 450 100.00% 57.93%
Public Other	139 127 45.65% 1.07%	1 18 168 38.77% 0.72%	15 685 5.15% 0.15%	18 651 6.12% 0.59%	6 934 2.28% 0.17%	2 706 0.89% 1.81%	3 494 1.15% 2.04%	304 765 100.00% 0.65%
Private Hospital	629 870 38.96% 4.85%	589 871 36.49% 3.58%	294 776 18.23% 2.90%	40 842 2.53% 1.29%	34 560 2.14% 0.84%	11 329 0.70% 7.59%	15 338 0.95% 8.95%	1 616 586 100.00% 3.42%
Private Clinic	312 853 35.61% 2.41%	333 236 37.93% 2.02%	172 594 19.64% 1.70%	46 193 5.26% 1.46%	10 696 1.22% 0.26%	0 0.00% 0.00%	3 091 0.35% 1.80%	878 663 100.00% 1.86%
Private Doctor	3 004 019 38.05% 23.12%	3 096 739 39.22% 18.08%	1 179 893 14.94% 11.60%	280 012 3.55% 8.84%	283 757 3.59% 6.92%	33 966 0.43% 22.76%	17 032 0.22% 9.94%	7 895 418 100.00% 16.72%
Traditional Healer	13 777 10.32% 0.11%	36 758 27.53% 0.22%	58 993 44.18% 0.58%	6 423 4.81% 0.20%	15 333 11.48% 0.37%	2 256 1.69% 1.51%	0 0.00% 0.00%	133 540 100.00% 0.28%
Pharmacy	57 913 39.29% 0.45%	48 529 32.93% 0.29%	38 411 26.06% 0.38%	181 0.12% 0.01%	2 358 1.60% 0.06%	0 0.00% 0.00%	0 0.00% 0.00%	147 392 100.00% 0.31%
Employer	5 795 40.82% 0.04%	2 052 14.45% 0.01%	5 276 37.16% 0.05%	1075 7.57% 0.03%	0 0.00% 0.00%	0 0.00% 0.00%	0 0.00% 0.00%	14 198 100.00% 0.03%
Private Other	139 1.27% 0.00%	2 179 19.94% 0.01%	134 1.23% 0.00%	8 084 73.96% 0.26%	394 3.60% 0.01%	0 0.00% 0.00%	0 0.00% 0.00%	10 930 100.00% 0.02%
Total	12 991 080 27.51% 100.00%	16 472 169 34.88% 100.00%	10 174 237 21.54% 100.00%	3 166 812 6.71% 100.00%	4 098 808 8.68% 100.00%	149 257 0.32% 100.00%	171 427 0.36% 100.00%	47 223 790 100.00% 100.00%

### 2.3.2 Utilisation

Health infrastructure is very inefficient if it is not utilised by the potential users. Several causes may result in low utilisation of facilities. Low occupancy rates of hospitals in Mexico are by and large due to inadequate staffing and maintenance (World Health Organisation, World Health Report, 2000:101). Castro-Leal et al. (1999) found in a cross-country study of several African countries that the use of health care facilities was influenced by income, quality differences between different facilities, access and opportunity costs (especially distance), price and gender (especially with regard to perinatal care).

South African utilisation rates are still very low. The target for an adult is to have at least 3.5 visits per year, whereas the national average for 2005 was 2.11 visits per person per year. This has remained constant since 2003 (Barron et al., 2006:61). The targeted utilisation rate for under-five-year-olds was much higher at 4 - 6 visits per child per year. Figure 3 shows the geographic patterns of primary health care utilisation.

Utilisation Rate, 2005/06



**Figure 3: Primary health care utilisation in South Africa, 2005/6**

Source: Barron et al., 2006 (District Health Barometer 2005-2006)

In South Africa 12.5% of the population claimed to have suffered from an illness or injuries over a recall period of one month (GHS 2006), of whom 83% consulted a health worker. Distance (as a proxy for access) only featured as the third most prevalent reason for not consulting a health worker. Altogether 8.6% of those who were not visiting a health worker gave distance as the reason for not doing so, although as most of those who had been ill did indeed consult a health worker, it means that only 1.5% of all those who were not ill did not consult a health worker because of the distance. This may indicate that other factors (especially cost) may inhibit utilisation of health care services in South Africa.

Given that so few of those who had been ill or injured did not visit health workers, it was clear that the low levels of public clinic utilisation was not because of unsatisfied demand for such facilities. Rather, it reflected the fact that many preferred to visit private health workers, or there may have been additional scope for expanding clinic attendance for other purposes (e.g. perinatal care).

**Table 6: Reasons for not consulting a health worker**

	Freq.	Percent
Too expensive	169 570	19.43%
Too far	74 581	8.55%
Not necessary	577 376	66.16%
Don't know	6 039	0.69%
Other	45 079	5.17%
	872 645	

The type of illness contracted by the individual also played a large role in whether and where medical treatment was sought (see Table 7). Filmer, Hammer & Pritchett (1999: 35-36) assumed that the severity of symptoms of a specific ailment determined the propensity to seek treatment. Influenza and diarrhoea were the listed illnesses that were more likely to go untreated<sup>4</sup>, whereas severe chronic ailments were likely to be treated. Moreover, the majority of patients sought treatment from the public sector.

<sup>4</sup> We use the term 'untreated' in this regard to refer to treatment by a medical worker, from whom consultation must be sought from one of the listed facilities.

Table 7: Patterns of consultations per illness

	Flu	Diarrhoea	Severe trauma	TB	Substance abuse	Depression	Diabetes	BP	HIV	STD's	Other	TOT	% of Total
Public Hospital	310 657	41 415	67 482	81 123	2 611	42 867	81 765	133 534	30 905	2 833	292 100	1 087 292	16.67%
Public Clinic	1 122 559	110 777	43 783	132 937	8 898	59 402	105 238	273 935	29 867	11 124	404 984	2 303 504	35.31%
Public Other	21 897	2 957	717	580	0	819	1 642	2 881	0	0	8 419	39 912	0.61%
Private Hospital	79 723	6 125	8 867	3 930	1 076	2 771	14 134	11 781	1 199	0	70 632	200 238	3.07%
Private Clinic	77 818	6 032	528	2 132	1 665	931	3 929	7 764	587	0	17 881	119 267	1.83%
Private Doctor	910 988	66 297	33 710	25 993	3 463	44 017	60 159	113 659	5 979	4 089	326 157	1 594 511	24.44%
Traditional Healer	21 313	493	486	1 305	598	4 242	0	1 091	416	464	22 095	52 503	0.80%
Pharmacy	82 194	4 550	602	2 833	278	1 387	770	1 827	491	0	10 597	105 529	1.62%
Employer	2 986	0	0	381	0	0	0	0	0	0	1 182	4 549	0.07%
Alternate Medicine	587	0	0	309	0	0	0	717	0	0	958	2 571	0.04%
Private Other	685	470	0	0	0	0	803	244	0	0	3 520	5 722	0.09%
Don't know	0	0	0	0	0	0	0	833	0	0	0	833	0.01%
No Consultation	709 333	34 506	17 359	25 543	3 720	15 535	15 229	32 562	4 253	896	131 426	989 362	15.17%
Unspecified	11 392	234	1 522	594	0	0	184	1 272	907	0	1 929	18 034	0.28%
TOTAL	3 352 132	273 856	175 056	276 660	22 309	171 971	283 853	582 100	74 604	19 406	1 291 880	6 523 827	100.00%
RATIOS													
Public Sector	43.41%	56.65%	63.97%	77.58%	51.59%	59.94%	66.46%	70.49%	81.46%	71.92%	54.61%	52.59%	
Public Clinics	33.49%	40.45%	25.01%	48.05%	39.89%	34.54%	37.07%	47.06%	40.03%	57.32%	31.35%	35.31%	
Other Health Services	35.09%	30.66%	25.25%	13.33%	31.74%	31.02%	28.11%	23.55%	11.62%	23.46%	35.07%	31.96%	
No Consultation	21.16%	12.60%	9.92%	8.87%	16.67%	9.03%	5.37%	5.59%	5.70%	4.62%	10.17%	15.17%	

### 2.3.3 Health finance reform

After decades of primary level infrastructure expansion had gone unutilised in Thailand, major reforms in the financing of health care resulted in greater uptake of services. Currently health care services are financed through capitation, which is funded by a general tax (Towse et al., 2004). The result has been greater utilisation of services and improved health status.

In South Africa, the National Health Act (No. 61 of 2003) transferred many responsibilities to district clinics. The Provincial Budgets and Expenditure Review (2002/03 – 2008/09) indicates that the bulk of spending has been directed towards the District Health Services. Yet it is not evident from that source whether appropriations through the budgets to infrastructure were indeed spent within the financial year. Furthermore, Thomas et al. (2004:27) noted that the financing of primary health care in South Africa was highly fragmented. This was because priorities were set by the National Department of Health and financing was provided by National Treasury. Provincial departments of health received allocations from the provincial treasuries, which then made allocations to different local councils. Non-hospital PHC services were financed from all these sources, while their policy goals were determined by the National DoH.

### 2.3.4 Health sector reform

When Gansu province, China benefited from a World Bank project, Health VIII, which aimed to invest in township-level health infrastructure and to establish a referral system between primary health care facilities and hospitals, other intermediate health care centres (mostly private clinics) closed as a result (Wagstaff & Yu, 2005). There were significant increases in the number of doctor visits and in self-assessed health and a decrease in child illness because of the programme.

The 2003 South African National Health Act re-assigned a number of services to be delivered by the newly devised District Health System. The respective responsibilities of the provincial health authorities and the local health managers were not well assigned, and in many cases finality has not been reached (Blecher & Harrison, 2006: 45). A further problem is the fact that endogeneities exist between primary health care services and secondary health care services, especially with regard to the referral of patients with conditions not covered by primary health care services. These overlaps in mandates need to be clarified. Finally, the rising importance of services rendered by the private health care sector should be taken into account in projections of demand for health care.

### 2.3.5 Historical overinvestment

Orosz & Burns (2000) found very high levels of health infrastructure available in Hungary, but low levels of health outcomes. To a large extent hospitals and clinics were lying dormant. They ascribed this to poor management and poorly equipped primary health care facilities. In Ontario, Canada major hospital consolidations resulted from historical overinvestment (Preyra & Pink, 2006: 3).

There is no evidence to suggest that overinvestment in clinics has occurred in the South African public health system. Over the period between 2001 - 2005 only 95 of the more than 3 000 clinics nationally have been closed down (District Health Information System, Department of Health). There is some anecdotal evidence of overinvestment in hospitals, and these concerns were addressed by a series of mergers.

### 2.3.6 Improving the quality of health care

Several studies have found the quality of care to be an important determinant in whether health infrastructure investment translates into improved health outcomes. The Bolivian Social Investment Fund aimed to improve infrastructure for education and health. A study by Newman et al. (2002) found very significant effects of health infrastructure (as proxied by the number of beds and number of patient rooms per capita) in reducing child mortality, but no similar significant results for education. Newman et al. (2002: 19) hypothesised that the reason for the significant effect on health, as opposed to education, was because the investments were accompanied by changes in service provision and adequate medicine and supplies. A simulation by Collier et al. (2002: 442) for Ethiopia found that bringing clinics up to a 'fully satisfactory' level of service had the same impact as reducing mean distance to clinics by 5.9 km in terms of usage. Finally, Lavy et al. (1996) analysed the influence of community-wide factors on child height for age and weight per height in Ghana. They found that individual characteristics of health care facilities were not very significant as determinants, but joint significance was very high with a large positive coefficient (Lavy et al., 1996: 12). In a related study of the same data, Alderman & Lavy (1996) found through a series of simulations that the effect of joint quality improvements (i.e. infrastructure improvement, service level, drug availability and personnel increases) far outweighed the effects of separate quality improvements (aggregated together) on facility usage. They found a similar result when simulating willingness to pay for joint quality improvements versus separate quality improvements.

Several grievances exist with regard to the quality of health care services in South Africa. Long waiting times were extremely prevalent in the public sector, with 43% of public sector patients complaining about long waiting times. Furthermore, the unavailability of drugs at clinics seriously hampered service delivery at local level, as 15% of patients at public clinics found the supply of drugs wanting. Kibambe & Koch (2007) noted that better inventory data were needed for hospitals in Gauteng, and the same case should be made for public clinics.

Table 8: Incidence of problems with service by place of consultation, as reported by patients

	Not clean	Long wait	Time inconvenient	Too expensive	Drugs unavailable	Rude staff	Wrong diagnosis	Other
Public Hospital	10.70%	42.06%	6.59%	7.67%	9.93%	9.26%	2.08%	0.79%
Public Clinic	6.13%	43.13%	6.62%	2.38%	15.43%	9.41%	1.85%	0.47%
Public Other	2.55%	20.19%	1.89%	4.87%	0.00%	5.40%	0.00%	0.00%
Private Hospital	4.08%	8.90%	0.95%	14.78%	2.82%	4.46%	0.85%	0.00%
Private Clinic	4.24%	13.35%	2.72%	8.34%	3.61%	3.30%	1.34%	0.88%
Private Doctor	2.94%	12.18%	3.19%	15.55%	2.74%	1.44%	1.04%	0.41%
Traditional Healer	6.34%	26.29%	10.17%	27.75%	2.44%	0.43%	0.48%	1.81%
Pharmacy	1.39%	1.05%	0.32%	16.46%	1.39%	0.32%	0.67%	0.00%
Employer	0.00%	52.87%	16.75%	0.00%	0.00%	0.00%	0.00%	0.00%
Alternate Medicine	15.87%	24.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Private Other	0.00%	12.41%	0.00%	0.00%	3.43%	0.00%	0.00%	0.00%
Don't know	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Unspecified	0.00%	0.15%	0.00%	0.00%	0.15%	0.15%	1.15%	0.00%
TOTAL	5.73%	30.10%	5.08%	8.27%	9.16%	6.27%	1.53%	0.49%
Public Services	7.54%	42.50%	6.55%	4.09%	13.49%	9.31%	1.90%	0.57%
Other Services	3.13%	11.83%	3.00%	15.33%	2.71%	1.74%	1.00%	0.41%



Services delivered by public sector health care facilities consistently resulted in lower levels of satisfaction than private services<sup>5</sup>. Of note is the 11.49% of public clinic patients who were dissatisfied with the services received.

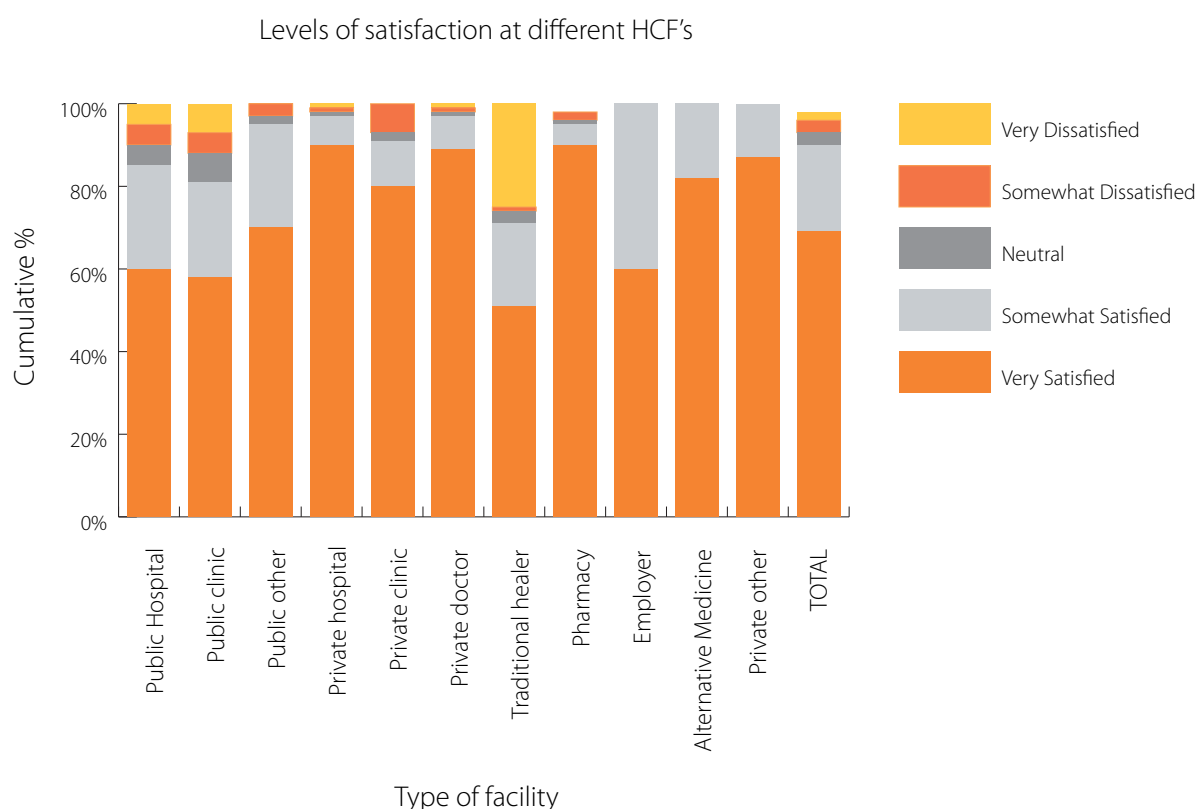


Figure 4: Levels of satisfaction at different health care facilities

The problem of low quality of service at South African public health care services is well documented (see Palmer 1999; Burger & Swanepoel, 2007; Grobler & Stuart, 2007). The DoH issued a 'Policy on Quality in Health Care in South Africa' in 2007, which is too recent to have affected outcomes yet. Quality improvement programmes (especially oversight, quality assurance and management initiatives) were proposed to improve utilisation of existing facilities, but no explicit mention was made of infrastructure outlays or improvements.

5 With the exception of traditional healers.

### 3. Primary Health Care in South Africa

This part of the research draws heavily on four studies on this and related issues by the researchers and colleagues who have been working with us. The first part of this section investigates the targeting of spending, the second the link between spending and outcomes, and the third the demand for health services.

#### 3.1 Expenditure Incidence and Service Delivery, 1995 to 2000

Expenditure incidence investigates who benefits from public expenditure. Enormous differences in the subsidisation of services between groups existed under apartheid. These are still evident. The largest remaining differences were in the subsidies per child at schools, but shifts of teachers to historically disadvantaged schools have almost completely eliminated them (see Gustafsson & Patel, 2006). The remaining minor differences arise from poorer schools not attracting well-qualified teachers, a common problem in societies with shortages of qualified teachers. Due to differences in qualifications, black teachers in Gauteng, for example, earn on average 16% more than those in Limpopo. Overall school costs are currently distributed more or less equally. This implies that cost differentials between the more and less affluent are no longer of major consequence. Complete equity in costs would only benefit poor schools by about 3% of spending per learner.

**Table 9: Fiscal magnitudes and shifts, 1995 to 2000 (in constant 2000 rand)**

	Total spending 1995 (R'm)	Total spending 2000 (R'm)	Per capita spending 1995	Per capita spending 2000	Per capita increase	Per capita growth (%)
School education	35 571	37 410	R863	R851	-R12	-1.4%
Tertiary education	5 633	6 541	R137	R149	R12	8.8%
Health <sup>6</sup>	17 685	22 147	R429	R504	R75	17.4%
Health: Hospitals	17 002	18 487	R413	R421	R8	1.9%
Health: Clinics	1 279	4 012	R31	R91	R60	194.1%
Social grants	12 674	19 001	R308	R432	R125	40.5%
Housing	931	3 040	R23	R69	R47	206.1%
Total	72 495	88 138	R1 760	R2 006	R246	14.0%

<sup>6</sup> In net terms, after also considering health fees.

Earlier work by one of the authors (Van der Berg, 2005) finds that overall social spending increased by 20.5% or R15.1 billion (2000 Rand) over the period 1995 to 2000, a 14% increase per member of the population. The major expenditure shift between programmes was a reduced share for school education and an increase in spending on social grants, housing and clinics, three relatively well-targeted spending items.

The concentration curve and concentration index measure how well spending is targeted at the poor. A concentration curve shows the cumulative proportion of spending going to cumulative proportions of the population, ranging from poorest to richest (for this study, based on pre-transfer income). It is therefore similar to a Lorenz curve, but can lie above the diagonal: Although the poorest 20% of the population cannot earn more than 20% of income, they can get more than 20% of public spending. A concentration curve above the diagonal indicates that spending is strongly equity-enhancing or per capita progressive, i.e. that it is targeted at the poor, who benefit more than proportionately to their numbers.

The concentration index, similar to the Gini coefficient, summarises targeting accuracy. A value of zero indicates complete equality of public expenditure. (Although it is theoretically possible for values to range from -1 to +1, in practice they range in a much narrower band around zero. A negative value indicates good targeting, where the poor receive more than their share of spending). Where a concentration curve lies above the diagonal, the area between the curve and the diagonal contributes to negative values.

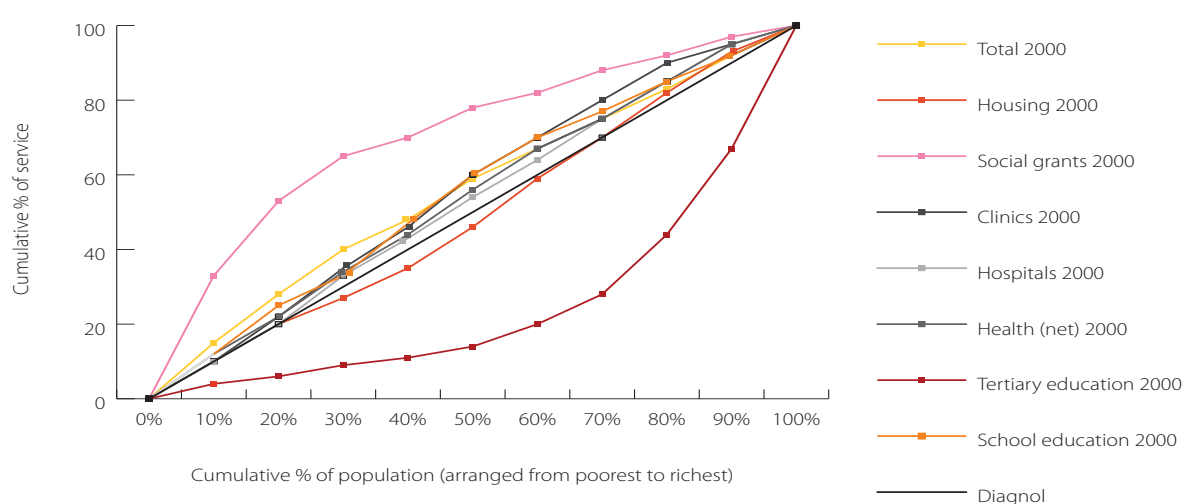
Table 10 shows that the overall concentration index declined noticeably from an already negative value of -0.057 in 1995 to -0.120 in 2000. This is remarkably good targeting for a middle-income country and results from the broad access to social services by the poor, as well as the large magnitude and wide reach of the social grants system. Social grants are best targeted, while tertiary education is at the bottom of the spectrum. The successful targeting at the poor is a major achievement, considering that South African public spending was notoriously unequally distributed under apartheid. Regarding health, health spending is in overall terms quite well targeted for a developing country, mainly as a result of the very good targeting of primary health services (clinics), although even hospital care is targeted, largely because the rich have largely withdrawn from using public hospitals, thus this spending reaches mainly the poor.

As mentioned above, the largest pro-poor shift has taken place in school education. The substantial shift of teacher costs between 1995 and 2000 reduced the concentration index considerably, from -0.016 to -0.104.

The health sector also showed strong improvement in equity, driven by improved targeting and the relative shift towards clinic-based (primary) health services. In particular, for purposes of this paper, it is to be noted that the targeting of clinic spending itself has also improved. The concentration curves shown below in Figure 5 show aggregate social spending and some major components thereof to illustrate the extent of changes in targeting.

**Table 10: Concentration indexes by programme, 1995 and 2000**

	1995	2000	Change 1995 -2000
School education	-0.016	-0.104	-0.088
Tertiary education	0.484	0.497	0.013
Health (net)	-0.045	-0.082	-0.037
Hospitals	-0.014	-0.057	-0.043
Clinics	-0.103	-0.132	-0.029
Fees	0.656	0.647	-0.009
Social grants	-0.434	-0.431	0.003
Housing	-0.018	0.007	0.025
Total	-0.057	-0.120	-0.063



**Figure 5: Concentration curves for all social spending programmes, 2000**

The results of the study of targeting of government spending can be summarised as follows:

- Overall, social spending increased markedly, benefiting all recipients.
- The poor gained mainly from shifts in spending from not so well targeted programmes to programmes or sub-programmes that were particularly well targeted, such as social grants and clinics, and from spending shifts between schools that were particularly beneficial to the poor.
- The richest two deciles experienced reduced real spending per capita, while the bottom four deciles gained, mainly from social grant spending. Black people gained considerably, but all other population groups experienced a small decline in per capita social spending, mainly through equalisation of teacher-pupil ratios. Metropolitan areas experienced a slight decline in social spending per person, driven by the objective of establishing equity in school education. Rural regions gained significantly with an increase of one third, amounting to R543 per person. School education, social grants and health spending all contributed to the increase.

Spending is therefore now extremely well-targeted. Recent policy initiatives (such as roll-out and expansion of the child support grant, free basic municipal services and post-provisioning favouring poorer schools) improved targeting of the poor even more. Further significant improvements in targeting, however, become increasingly difficult, emphasising the need for more equity of outcomes through improved efficiency in social delivery to the poor.

### 3.2 The Link between Spending and Delivery: Preliminary Evidence regarding Health Services

The above analysis focuses on the distribution of public spending. Underlying such analyses is the implicit assumption that spending is relatively efficient, or that efficiency is relatively uniform across people and regions. The government is, however, still trying to address systematic differences in the efficiency of social delivery to different areas, population groups and income groups. Even meticulously equitable spending will not necessarily lead to equity in social outcomes. Large differences in social outcomes, despite the massive shifts in spending documented above, indeed illustrate the limitations of expenditure incidence analysis. A brief analysis of this issue relating to health may be illuminating here.

International evidence indicates that government health spending has a limited impact on health outcomes (see e.g. Filmer, Hammer & Pritchett 1999; Gupta, Verhoefen & Tiongson 1995; Inter-American Development Bank, 1998). Increased spending is not always converted into the delivery of more effective health services, because of slippage between spending and delivery. Health services are furthermore often not the major factor determining health outcomes and conditions: Clean water and sanitation, nutrition and personal hygiene may play an even larger role.

Attempts to improve public health services have focused on improving access. Shifts in health spending and primary health care to historically poorly endowed provinces (e.g. Collins et al., 2000) were accompanied by the provision of free health care to pregnant women and young children. Consumers nevertheless show overwhelming preference for private care, where it is available and affordable (e.g. Palmer et al., 2002; Havemann & Van der Berg, 2003; Grobler & Stuart, 2006). In economic terms public health care is an inferior good – as an individual's income increases, there is a shift away from using public health services in relative terms. Calculations utilising the 1998 Demographic and Health Survey based on research by Booysen (2002) show that, even among the poorest 60% of the population, a third of visits to health facilities were to private providers. This is especially the case for more serious health conditions. A large proportion of unskilled and semi-skilled workers and their families use private health care far more than public care, even though only one in five belong to a medical aid fund.

Palmer (1999) identified four reasons why even the poor preferred private health services and often avoid public services. The reasons were derived from focus group discussions in rural towns: Respondents felt paying for a service meant there was an incentive for good service delivery, and that the public sector did not provide effective care. According to the respondents the public sector nurses “merely prescribe pills” and also treat patients badly, in contrast to the friendly attitude of private doctors. There is a conception that public clinics are primarily for pregnant women, babies and people with tuberculosis. From the perspective of potential users, the quality of public health care requires attention to ensure that expanded provision of public health resources is positively evaluated by the intended beneficiaries.

The national responses to the General Household Survey of 2004 is proof that the situation has not improved: A large proportion of the public (at least 40% for public clinics and 20% for public hospitals) complained that public hospitals and especially public clinics are not clean, have long waiting times and inconvenient operating times, that medication is not available, that the staff are incompetent and that they have been incorrectly diagnosed. The respondents did not have similar complaints about private health services (Grobler & Stuart, 2006: 20).

This illustrates that fiscal resource inputs do not guarantee the desired social outcomes. There are two possible areas of slippage between the inputs and outcomes. On the one hand, fiscal resources do not necessarily translate into the scarce real resources (qualified nurses, etc.) required to improve social delivery. More funding for clinics at schools for instance does not necessarily convert into attracting more qualified nurses to deep rural schools. Secondly, even where the real resources are available, they are not always effectively utilised.

Government recognises the urgent need for improved service delivery. Successful targeting of expenditure – one of the major achievements of the democratic period – only ensures that expenditure is equitably applied, not that it is effectively spent. In the education sector resources were shifted to the poor, but outcomes, when measured in terms of quality, remained largely unchanged. Regarding health care, the services provided by the public health sector are not highly rated by the population – even the poor often opt for paying more to get higher-quality private health care.

### 3.3 The Demand for Public Health Services

Research on the demand for health services by Burger (2007), Grobler & Stuart (2007) and Havemann & Van der Berg (2003)<sup>7</sup> came to the main conclusion that even the poor in South Africa regarded public health services as an inferior good and rather visited private providers, irrespective of the greater cost, when they had more serious ailments. Rising incomes thus led to an even greater flight from public health services. This implies that improvement of such services is seriously needed, but it would require more than only increasing spending on primary public health service infrastructure (i.e. building clinics). Other more deep-rooted changes are required to overcome this situation. Roughly two-thirds of the black population usually visit public clinics in the event of an illness, while 10.73% usually visit a private doctor<sup>8</sup>.

<sup>7</sup> Havemann & Van der Berg (2003) did find a significant effect of distance on the demand for health care. However, the PSLDS data set used reached back to 1993. By 1996 user fees had been scrapped in the public sector, and for that reason the (opportunity) cost of seeking health care dropped dramatically. All later work on the demand for health care was done on more recent GHS surveys.

<sup>8</sup> This represented 51.1% of all people who usually visit a private doctor.

Table 11: Percentages of race groups that usually visit listed health care facilities

	Black	Coloured	Indian	White	Other	Total
Public Sector	85.58%	71.24%	51.93%	17.36%	32.93%	77.16%
Private hospitals, clinics and doctors	13.61%	28.15%	47.82%	80.61%	67.07%	21.95%

Looking at the pattern of *actual* visits (rather than *usual* place visited) by race shows that a third of even the poorest race groups, blacks and coloureds, who visited health facilities, visited private health care facilities.



Table 12: Place of last consultation by race

HCF	Black	Coloured	Indian	White	Other	Total
Public Hospital	788 330	112 958	20 198	38 330	0	959 816
Public Clinic	1 868 961	95 061	26 443	32 478	296	2 023 239
Public Other	18 502	17 107	1 824	209	0	37 642
Private Hospital	94 234	12 005	7 113	67 668	0	181 020
Private Clinic	73 045	5 802	2 964	23 611	0	105 422
Private Doctor	1 025 829	102 472	41 651	285 825	0	1 455 777
Traditional Healer	47 258	0	0	0	0	47 258
Pharmacy	81 025	4 376	1 535	10 802	0	97 738
Employer	4 349	0	200	0	0	4 549
Alternate Medicine	1 722	717	0	132	0	2 571
Private Other	4 675	81	0	0	0	4756
Don't know	833	0	0	0	0	833
Unspecified	68 969	4 359	612	16 718	586	91 244
TOTAL	4 077 732	354 938	102 540	475 773	882	5 011 865
Not Applicable	33 514 748	3 833 488	1 059 681	3 883 120	35 095	42 326 132
TOTAL	37 592 480	4 188 426	1 162 221	4 358 893	35 977	47 337 997
%						
Public Services	65.62%	63.43%	47.26%	14.93%	33.56%	60.27%
Other Services	32.67%	35.35%	52.14%	81.56%	0.00%	37.89%

Table 13 shows that actual visits were somewhat different from usual preferences: more than a quarter of those who said they usually first visited public clinics had actually visited private health facilities in their last visit in the past month. Nevertheless, the pattern of actual visits versus which health care facility respondents reported that they usually visited showed a lot of similarity.

Table 13: Usual HCF versus last HCF visited

HCF visited in last month, if such a consultation took place (Percentages in rows)

Usual HCF	Pub Hosp	Pub Clin	Pub Other	Priv Hosp	Priv Clin	Priv Doctor	Trad Healer	Pharmacy	Employer	Alternative	Priv Other	Total
Public Hospital	56.25	20.94	0.5	0.98	1.23	17.62	0.65	1.5	0	0	0.07	100
Public Clinic	15.74	65.51	0.39	0.42	1.17	13.94	1.09	1.2	0.06	0.07	0.13	100
Public Other	12.73	23.32	39.99	0	2.42	13.61	0	7.93	0	0	0	100
Private Hospital	4.94	0.77	0	43.28	4.4	43.82	0	0.92	0	0	0	100
Private Clinic	8.91	13.34	0.29	6.03	23.5	40.84	0.76	5.39	0.36	0.58	0	100
Private Doctor	4.85	6.14	0.6	5.85	2.65	77.22	0.26	2.25	0.08	0	0.01	100
Traditional Healer	1.13	15.57	7.89	0	0	10.94	60.35	3.26	0	0.85	0	100
Pharmacy	1.77	14.18	0	0	5.87	12.36	0	65.82	0	0	0	100
Employer	9.28	0	0	0	0	47.15	0	0	43.57	0	0	100
Private Other	30.69	0	10.63	0	0	30.69	0	0	0	0	27.99	100
Unspecified	22.16	30.23	0	30.12	0	13.9	0	3.59	0	0	0	100
TOTAL	1945	40.99	0.76	3.67	2.14	29.51	0.96	1.98	0.09	0.05	0.1	100

Respondents reported that 50.13% received services free of charge from public hospitals, whereas 92.84% of individuals who visited public clinics did so with no service payment. South Africa has a very large section of the population that is not covered by medical insurance: only 13.73% of the population belongs to some form of medical aid. One would expect that individuals who can afford medical insurance would prefer private health care, and that the public health care system would render services to those without medical insurance. When disaggregating the health care facility that households usually consult by their membership of a medical aid, one finds that 5.74% and 2.39% of individuals who usually go to public hospitals and clinics respectively are covered by medical aid. This is not surprising: one would expect those with medical aid to visit private facilities, as the costs are usually covered, whether in part or in full. More surprising is that the majority of individuals who usually visit private clinics and doctors are *not* covered by medical aid (57.28% and 52.41% respectively). Thus their preference for private health facilities even overcomes the substantial private outlays attached to visiting such facilities.

## 4. An Empirical Investigation into the Role of Primary Health Care in South Africa

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To model health-seeking behaviour, it was decided to use the General Household Survey (GHS2006). Unlike in earlier studies on the demand for health services, the focus here was on the impact of distance to address the major question of this report, viz. whether distance to clinics or hospitals acts as an impediment to access to health care for South Africans, and particularly for poor South Africans.

The analysis was done in two stages. In the first part, a description in the form of tables and narrative was compiled from the data in GHS2006. The focus is naturally upon the effect of distance on health care. In the second part, this univariate and bivariate analysis is expanded to a multivariate analysis. Given the nature of the outcome, limited dependent variable models (probits and multinomial logits) are appropriate, as the dependent variable is not a continuous one, but a binary one (whether people seek health care or not when they are ill), or a categorical one (the choices of people who are ill between self-treatment, public clinics, public hospitals, or private health services).

Table 14 shows the proportion of ill or injured respondents who self-treated, according to the province and distance from the nearest public clinic or hospital. It is noticeable that for all such respondents in South Africa as a whole, the proportion who had more than one hour to travel to facilities and who self-treated (17%) was lower than for all respondents, including many of those who had far lesser distances to travel.

**Table 14: Proportion of respondents who were ill or injured and self-treated by province and distance from public health facility**

	0-14 mins	15-29 mins	30-44 mins	45-59 mins	60 mins or more	Total
Western Cape	15%	15%	17%	23%	11%	15%
Eastern Cape	14%	14%	15%	16%	15%	15%
Northern Cape	18%	18%	16%	17%	23%	18%
Free State	16%	23%	24%	28%	7%	21%
KwaZulu-Natal	23%	15%	18%	16%	19%	18%
North West	22%	18%	22%	13%	26%	20%
Gauteng	25%	21%	29%	21%	8%	24%
Mpumalanga	25%	20%	25%	13%	26%	23%
Limpopo	16%	16%	19%	24%	16%	18%
South Africa	20%	18%	22%	17%	17%	19%

So it is clear that the more distant respondents were not less inclined to use health facilities, even before taking into consideration that many of those further from clinics or hospitals may be the type of people who are less likely to seek health care (e.g. the rural poor, less educated households, etc.). This also appears to apply to most provinces, considered individually.

## 4.1 Modelling the Effect of Distance on Health-Seeking Behaviour

The focus could be on investigating the health-seeking behaviour of all those who have been ill or injured, or only that of those who should be the real target of primary health services, i.e. those who reported illnesses or injuries that are usually regarded as appropriate for treatment at primary health facilities. Thus four models have been estimated, two multinomial logits and two probits.

For purposes of the multinomial analysis, health-seeking behaviour was divided into four categories of places where consultations took place: public clinics; public hospitals; private formal health services (hospitals, clinics, private practitioners and employers' health facilities); and what will be called self-treatment (all those who did not report seeking care as well as those visiting traditional or faith healers, or pharmacies)<sup>9</sup>. For the probits, only self-treatment as defined here was contrasted with those who did seek health care.

The four models have one important thing in common from the perspective of this report. None of them show any indication that people having further to travel to health facilities are any worse off in terms of treatment sought than those closer to such facilities. Compared to the reference category - people who live closer than 15 minutes travelling time from the closest public clinic or public hospital - people who live further away do not exhibit any trend to self-treat more often, or put differently, are not less inclined to visit health facilities once their other characteristics have also been considered. While there is a clear preference for private rather than public health facilities among higher income groups and among those who are on medical aid, there is interestingly also more self-treatment (which includes for this purpose pharmacies, or non-treatment) among the richer groups. On the other hand, this may perhaps be because the rich are more likely to report being in poor health than others, as many international studies also show.

In some cases, distance does enter as a significant determinant of behaviour. However, the sign is in the *wrong* direction, i.e. indicating that those further away are *more* likely to seek treatment. This may be the result of an endogeneity problem: those who had to travel far to receive more treatment may have been more likely to report having sought treatment than those who may not have required such a conscious decision to seek treatment.

Table 15 shows the two probit models (the same model, applied firstly to all respondents reporting an ailment, and then only to those whose ailment was one usually requiring primary care). For our purposes, the other variables are

<sup>9</sup> *Pharmacies were treated in this way as very few people, only 245 out of more than 13 000 in the survey who reported being ill or injured in the month preceding the survey, reported visiting pharmacies, probably because of the way the question was formulated to ask people "what kind of health worker" they consulted. It appears that many respondents did not think of pharmacies in this way and therefore under-reported visiting pharmacies. A similar situation probably applies to traditional healers (only 96 respondents reported visiting them) and homeopaths (only 7 respondents). The formulation of the questionnaire was probably also responsible for so few people reporting visits to dentists: This question was only asked of people who had earlier responded yes to the question whether they had suffered illness or injuries in the previous month; many may not spontaneously have considered dental problems in this category.*

not of concern. What is of concern is that the variables reflecting the reported time of travel to public health facilities enter the model in all cases without any statistical significance, with no pattern in terms of the magnitude of the coefficients, and mainly with the perverse sign (one would expect the dependent variable, more self-treatment, to be positively affected by greater distance from facilities, but the sign is in most cases negative). This probit model offers no evidence of distance hindering health-seeking behaviour.

It should be noted here that behaviour such as visiting a traditional healer or a pharmacist is included in this definition of self-treatment. Thus it is not the case that the lack of significance in the models results from respondents seeking such care in the absence of formal health facilities, as this specification already regards that as self-treatment.

**Table 15: Probit model explaining self-treatment among those reporting being ill or injured in past month**

	All ailments	Only ailments needing primary care
Coloured	0.133	0.126
	[1.09]	[0.82]
Indian	-0.234	-0.252
	[1.04]	[0.98]
White	0.234	0.245
	[1.78]	[1.74]
Female	-0.087	-0.124
	[2.59]**	[3.13]**
Female household head	-0.075	-0.117
	[1.53]	[2.10]*
Member of medical aid fund	-0.36	-0.332
	[4.94]**	[3.94]**
Distance to nearest public health facility 15 – 29 min	-0.067	-0.093
	[1.09]	[1.29]
Distance to nearest public health facility: 30 – 44 min	0.033	0.013
	[0.46]	[0.15]
Distance to nearest public health facility: 45 – 59 min	-0.099	-0.128

# Probit model explaining self-treatment among those reporting being ill or injured in past month

	All ailments	Only ailments needing primary care
	[1.15]	[1.23]
Distance to nearest public health facility: 60+ min	-0.099	-0.085
	[1.00]	[0.78]
Distance to nearest public health facility: unknown	0.246	0.469
	[0.48]	[0.81]
Age 5-9	0.269	0.405
	[2.95]**	[4.05]**
Age 10-14	0.315	0.404
	[3.33]**	[4.02]**
Age 15-19	0.484	0.737
	[5.43]**	[7.18]**
Age 20-24	0.489	0.667
	[6.12]**	[7.30]**
Age 25-29	0.281	0.397
	[3.05]**	[3.69]**
Age 30-34	0.278	0.489
	[3.08]**	[4.91]**
Age 35-39	0.226	0.348
	[2.58]**	[3.48]**
Age 40-44	0.233	0.351
	[2.51]*	[3.33]**
Age 45-49	0.113	0.21
	[1.19]	[2.02]*
Age 50-54	0.037	-0.022
	[0.38]	[0.19]
Age 55-59	0.135	0.234
	[1.38]	[2.12]*
Age 60-64	-0.022	-0.059
	[0.20]	[0.50]
Age 65-69	-0.072	-0.071
	[0.65]	[0.54]
Age 70-74	-0.031	0.005

### Probit model explaining self-treatment among those reporting being ill or injured in past month

	All ailments	Only ailments needing primary care
	[0.28]	[0.04]
Age 75-79	0.021	0.092
	[0.16]	[0.61]
Age 80-84	-0.076	-0.221
	[0.46]	[1.10]
Age 85+	0.04	0.091
	[0.29]	[0.56]
Age unknown	0.499	1.316
	[0.86]	[3.06]**
Household size	-0.009	-0.002
	[0.92]	[0.20]
Household expenditure: R400-R799 per month	-0.067	-0.061
	[1.03]	[0.78]
Household expenditure: R800-R1 199 per month	0.048	0.092
	[0.60]	[1.00]
Household expenditure: R1 200-R1 799 per month	-0.161	-0.155
	[1.74]	[1.54]
Household expenditure: R1 800-R2 499 per month	-0.215	-0.192
	[1.78]	[1.37]
Household expenditure: R2 500-R4 999 per month	-0.191	-0.221
	[1.65]	[1.66]
Household expenditure: R5 000-R9 999 per month	-0.184	-0.251
	[1.19]	[1.46]
Household expenditure: R10 000 or more per month	-0.198	-0.279
	[0.81]	[1.13]
Household expenditure: unknown	0.018	0.327
	[0.04]	[0.80]
Household expenditure: refused to answer	0.203	0.245
	[0.38]	[0.45]
Western Cape	-0.141	0.029
	[0.90]	[0.15]



### Probit model explaining self-treatment among those reporting being ill or injured in past month

	All ailments	Only ailments needing primary care
Eastern Cape	-0.107	-0.123
	[1.06]	[1.08]
Northern Cape	-0.038	0.072
	[0.24]	[0.41]
Free State	0.105	0.214
	[0.98]	[1.73]
KwaZulu-Natal	0.042	0.122
	[0.42]	[1.06]
Gauteng	0.101	0.204
	[0.90]	[1.64]
North West	0.191	0.294
	[1.82]	[2.44]*
Mpumalanga	0.141	0.22
	[1.34]	[1.77]
Constant	-0.876	-0.974
	[6.64]**	[6.34]**
Observations	12 887	9 323

Absolute value of t statistics in square brackets; \*significant at 5%; \*\* significant at 1%. Reference group: Black, male, male head of household, not a member of a medical aid fund, age 0-4, household expenditure per month <R400, living in Limpopo. Stata's survey probit regression was used to take cognisance of sample stratification and clustering of observations. These are reflected in standard errors.

An alternative way to model behaviour is to fit a multinomial logistic regression (multinomial logit). In this case, provision is made for varying outcomes. The reference outcome (i.e. the one not reported in the tables below) is visiting a public health clinic. The focus here is again on whether those not seeking formal care ('self-treatment') are affected by distance. Again, the results show no indication that distance from public health facilities encourages more self-treatment (including visiting a traditional healer or pharmacist).

**Table 16: Multinomial logit model explaining health care seeking behaviour among those reporting being ill or injured in past month, all illnesses or injuries (reference outcome: visiting public clinics)**

	Self-treatment		Public hospitals		Private health care	
Coloured	0.569	[2.24]*	0.94	[3.83]**	0.238	[0.86]
Indian	-0.297	[0.54]	0.148	[0.33]	0.459	[0.91]
White	1.126	[3.44]**	0.407	[1.19]	0.862	[2.73]**
Female	-0.226	[3.38]**	-0.277	[3.70]**	-0.018	[0.24]
Female household head	-0.168	[1.71]	-0.027	[0.29]	-0.116	[1.19]
Member of medical aid fund	1.179	[4.94]**	0.701	[2.72]**	2.607	[11.88]**
Distance to public health facility: 15-29 mins	-0.177	[1.45]	-0.187	[1.63]	-0.05	[0.43]
Distance to public health facility: 30-44 min	0.015	[0.11]	-0.098	[0.69]	-0.157	[1.22]
Distance to public health facility: 45-59 min	-0.279	[1.61]	-0.368	[2.04]*	-0.115	[0.70]
Distance to public health facility: 60+ min	-0.134	[0.66]	-0.181	[1.01]	0.275	[1.29]
Distance to public health facility: unknown	0.338	[0.37]	0.221	[0.35]	-1.672	[1.71]
Age 5-9	0.402	[2.33]*	-0.329	[1.55]	-0.12	[0.77]
Age 10-14	0.615	[3.32]**	0.353	[1.73]	-0.065	[0.34]
Age 15-19	0.84	[5.00]**	0.348	[1.59]	-0.262	[1.54]
Age 20-24	1.079	[6.62]**	0.886	[4.78]**	0.116	[0.61]
Age 25-29	0.771	[4.31]**	0.556	[2.99]**	0.409	[1.88]
Age 30-34	0.811	[4.50]**	0.988	[5.13]**	0.26	[1.47]
Age 35-39	0.818	[4.69]**	1.135	[6.26]**	0.486	[2.36]*
Age 40-44	0.651	[3.56]**	0.858	[4.87]**	0.173	[0.97]
Age 45-49	0.444	[2.39]*	0.937	[5.15]**	0.15	[0.86]
Age 50-54	0.246	[1.30]	0.905	[4.36]**	-0.026	[0.14]
Age 55-59	0.407	[2.15]*	0.851	[4.51]**	-0.043	[0.22]
Age 60-64	0.171	[0.81]	0.646	[3.30]**	0.222	[1.20]
Age 65-69	0.118	[0.52]	0.844	[4.22]**	0.212	[1.09]
Age 70-74	0.309	[1.37]	1.008	[4.88]**	0.532	[2.57]*
Age 75-79	0.333	[1.30]	0.935	[3.95]**	0.386	[1.63]
Age 80-84	0.239	[0.68]	1.229	[4.04]**	0.43	[1.24]
Age 85+	0.838	[2.59]**	1.417	[4.14]**	1.317	[4.30]**
Age unknown	1.682	[1.42]	1.243	[1.29]	1.088	[1.37]
Household size	-0.034	[1.67]	0.011	[0.68]	-0.084	[5.18]**

	Self-treatment		Public hospitals		Private health care	
Household expenditure: R400-R799 per month	-0.025	[0.21]	-0.051	[0.43]	0.561	[3.87]**
Household expenditure: R800-R1 199 per month	0.246	[1.66]	-0.019	[0.14]	0.844	[5.58]**
Household expenditure: R 1 200-R1 799 per month	0.032	[0.18]	-0.055	[0.31]	1.372	[7.98]**
Household expenditure: R1 800-R2 499 per month	0.139	[0.56]	0.509	[2.29]*	1.576	[6.91]**
Household expenditure: R2 500-R4 999 per month	0.439	[1.51]	0.403	[1.42]	2.063	[7.69]**
Household expenditure: R5 000-R9 999 per month	0.928	[2.25]*	0.601	[1.26]	2.643	[6.31]**
Household expenditure: R10 000 + per month	0.517	[0.50]	0.221	[0.22]	1.998	[2.02]*
Household expenditure: unknown	0.94	[1.01]	1.776	[1.78]	1.817	[2.12]*
Household expenditure: refused to answer	1.381	[1.42]	-29.304	[43.94]**	2.558	[2.65]**
Western Cape	-0.368	[1.09]	0.157	[0.51]	-0.441	[1.09]
Eastern Cape	-0.205	[0.99]	-0.166	[0.94]	0.106	[0.58]
Northern Cape	-0.563	[1.68]	-0.805	[2.73]**	-0.93	[3.28]**
Free State	0.264	[1.23]	-0.423	[2.40]*	0.431	[2.32]*
KwaZulu-Natal	0.084	[0.41]	0.347	[2.07]*	-0.289	[1.53]
Gauteng	0.161	[0.74]	-0.15	[0.82]	0.05	[0.25]
North West	0.455	[2.16]*	0.182	[0.93]	0.186	[0.98]
Mpumalanga	0.222	[1.04]	-0.162	[0.74]	-0.017	[0.09]
Constant	-1.008	[3.93]**	-1.269	[5.62]**	-1.279	[5.24]**
Observations: 12 887						

Absolute value of the statistics in square brackets; \*significant at 5%; \*\* significant at 1%Reference outcome: Visit to public clinic

Reference group: Black, male, male head of household, not a member of a medical aid fund, age 0-4, household

expenditure per month <R400, living in Limpopo

Stata's survey multinomial logit regression was used to take cognisance of sample stratification and clustering of observations. These are reflected in standard errors.

The coefficients from this multinomial logit showed no evidence of the expected effect that greater distance from public health facilities boosted self-treatment rather than visiting health facilities. To better interpret these coefficients, the relative risk ratios of self-treatment derived from this model for different distances from public health facilities are shown in Figure 6 below. As can be seen, once all other factors in the model have been considered, there was clearly no greater likelihood that those respondents with further to travel tended to self-treat. On the contrary.

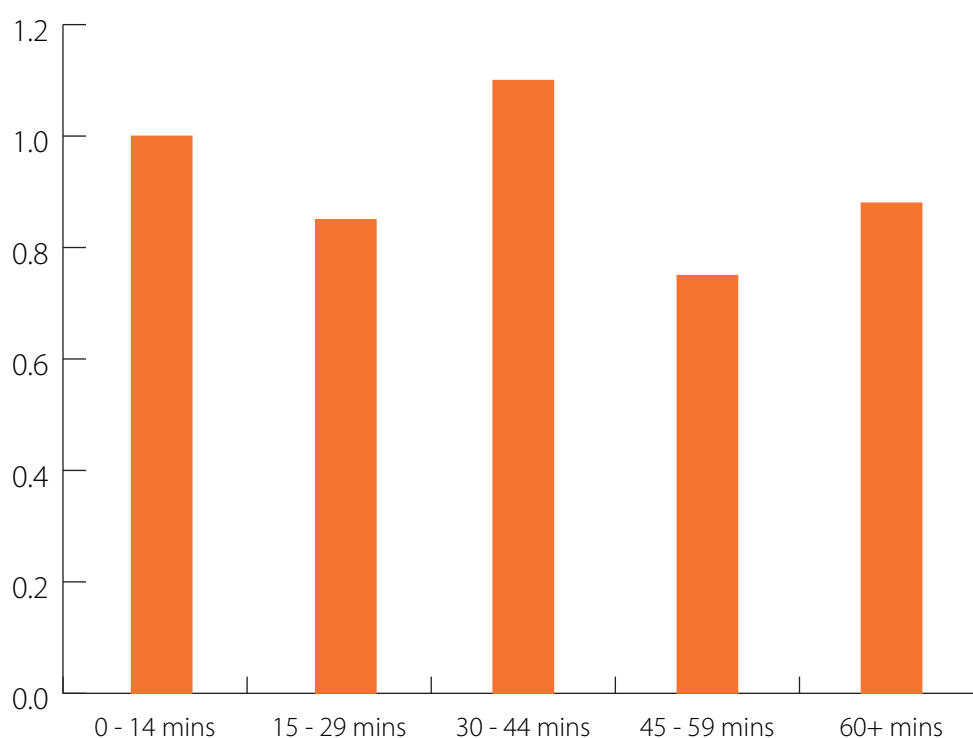


Figure 6: Relative risk ratio of self-treatment by travel distance from nearest health facility, GHS2006

To determine whether the situation changes when only respondents who suffered illnesses or injuries normally requiring *primary* health care are considered, another multinomial logit was run with the same model, but confined to only those respondents. As Table 17 shows, there was again no indication that greater distance from facilities led to more self-treatment.

**Table 17: Multinomial logit model explaining health care seeking behaviour among those reporting being ill or injured in past month, only for those illnesses or injuries requiring primary health care (reference outcome: visiting public clinics)**

	Self-treatment		Public hospitals		Private health care	
Coloured	0.671	[2.23]*	1.122	[3.36]**	0.418	[1.49]
Indian	-0.305	[0.52]	0.124	[0.26]	0.554	[1.07]
White	1.087	[3.11]**	0.339	[0.81]	0.814	[2.34]*
Female	-0.267	[3.38]**	-0.174	[1.75]	-0.034	[0.40]
Female household head	-0.284	[2.57]*	-0.067	[0.54]	-0.217	[1.94]
Member of medical aid fund	1.299	[5.43]**	0.506	[1.72]	2.69	[12.21]**
Distance to public health facility: 15–29 min	-0.196	[1.39]	-0.193	[1.32]	0.003	[0.03]
Distance to public health facility: 30–44 min	0.029	[0.18]	-0.12	[0.67]	-0.037	[0.25]
Distance to public health facility: 45–59 min	-0.293	[1.43]	-0.354	[1.65]	-0.005	[0.03]
Distance to public health facility: 60+ min	-0.068	[0.32]	-0.083	[0.38]	0.219	[1.05]
Distance to public health facility: unknown	0.288	[0.29]	-31.474	[50.24]**	-31.085	[46.95]**
Age 5-9	0.657	[3.52]**	-0.413	[1.64]	-0.069	[0.40]
Age 10-14	0.852	[4.41]**	0.297	[1.27]	0.188	[0.92]
Age 15-19	1.189	[6.25]**	0.129	[0.46]	-0.346	[1.72]
Age 20-24	1.246	[6.96]**	0.462	[1.87]	0.033	[0.15]
Age 25-29	0.853	[4.01]**	0.356	[1.43]	0.224	[0.91]
Age 30-34	1.253	[6.12]**	1.024	[4.47]**	0.487	[2.33]*
Age 35-39	0.894	[4.54]**	1.113	[5.15]**	0.177	[0.86]
Age 40-44	0.796	[3.87]**	0.707	[3.25]**	0.137	[0.69]
Age 45-49	0.598	[3.01]**	0.867	[3.93]**	0.202	[1.01]
Age 50-54	0.12	[0.53]	0.998	[3.92]**	-0.036	[0.17]
Age 55-59	0.52	[2.42]*	0.789	[3.52]**	-0.138	[0.65]

Age 60-64	0.03	[0.13]	0.509	[2.26]*	0.106	[0.54]
Age 65-69	0.048	[0.18]	0.82	[3.46]**	0.066	[0.28]
	Self-treatment		Public hospitals		Private health care	
Age 70-74	0.29	[1.13]	0.97	[4.05]**	0.442	[1.88]
Age 75-79	0.315	[1.07]	0.481	[1.59]	0.262	[0.94]
Age 80-84	-0.096	[0.22]	1.127	[3.13]**	0.465	[1.27]
Age 85+	0.835	[2.42]*	1.22	[2.96]**	1.25	[3.75]**
Age unknown	2.158	[2.36]*	0.723	[0.60]	-0.7	[0.90]
Household size	-0.022	[0.97]	0.01	[0.53]	-0.085	[4.61]**
Household expenditure: R400–R799 per month	-0.001	[0.00]	0.024	[0.16]	0.563	[3.44]**
Household expenditure: R800–R1 199 per month	0.398	[2.38]*	0.16	[0.96]	1.009	[5.75]**
Household expenditure: R1 200–R1 799 per month	0.027	[0.13]	-0.136	[0.64]	1.403	[7.33]**
Household expenditure: R1 800–R2 499 per month	0.242	[0.87]	0.583	[2.15]*	1.731	[6.66]**
Household expenditure: R2 500–R4 999 per month	0.408	[1.24]	0.396	[1.16]	2.127	[7.01]**
Household expenditure: R5 000–R9 999 per month	0.925	[2.15]*	0.842	[1.64]	2.769	[6.53]**
Household expenditure: R10 000 + per month	0.235	[0.21]	-0.334	[0.28]	1.95	[1.85]
Household expenditure: unknown	0.856	[0.89]	0.454	[0.38]	1.849	[1.77]
Household expenditure: refused to answer	1.463	[1.62]	-30.21	[44.08]**	2.731	[2.63]**
Western Cape	-0.21	[0.54]	0.132	[0.34]	-0.754	[1.90]
Eastern Cape	-0.18	[0.79]	-0.174	[0.81]	0.221	[1.04]
Northern Cape	-0.45	[1.19]	-0.886	[2.07]*	-1.088	[3.23]**
Free State	0.538	[2.09]*	-0.369	[1.57]	0.566	[2.46]*
KwaZulu-Natal	0.214	[0.90]	0.358	[1.80]	-0.296	[1.35]
Gauteng	0.366	[1.56]	-0.141	[0.63]	0.053	[0.24]
North West	0.684	[2.85]**	0.104	[0.41]	0.338	[1.56]
Mpumalanga	0.398	[1.58]	-0.21	[0.84]	0.059	[0.25]
Constant	-1.29	[4.33]**	-1.497	[5.46]**	-1.451	[5.17]**
Observations: 9323					9323	

Absolute value of the statistics in square brackets; \*significant at 5%; \*\* significant at 1%Reference outcome: Visit to public clinic

Reference group: Black, male, male head of household, not a member of a medical aid fund, age 0-4, household

expenditure per month <R400, living in Limpopo

Stata's survey multinomial logit regression was used to take cognisance of sample stratification and clustering of observations. These are reflected in standard errors.

The formal modelling thus shows that health-seeking behaviour was not seriously affected by distance from public health facilities. This was different from the cases of Ethiopia and Mozambique reported above. The reason may be that in the South African context health facilities were already relatively well distributed, so that distance was no longer a serious obstacle. More important now may be cost, the opportunity cost of time, and the perceived quality and therefore utility of the facility to users.

The one province in South Africa that does have a large proportion of the population with long travelling times is the Eastern Cape. Separate modelling for this province also confirmed that even in this province, distance did not seem to affect health-seeking behaviour.

Thus for the South African case, there is no evidence that distance from public health facilities affects access. This means that, even if public health services were effective (though both the international literature and respondent dissatisfaction with public health facilities raise serious doubts about that), a better distribution of public health facilities would not affect health outcomes, as it would not affect health visits.

## 5. Conclusion

This section draws inferences from the analysis above on the need for expanded or better targeted primary health clinics, and based on that discusses the possible implications for the inter-governmental transfer of funds.

This paper has shown that there is little evidence in the international literature that the greater availability of primary health care infrastructure has a significant effect on health outcomes. On the contrary, a substantial number of international studies that there is seemingly no relationship between making more health clinics available, and health outcomes. The reason for this lack of a relationship probably lies mainly in three factors:

- Health outcomes are the result of a large number of factors, of which public primary health services are but one. Other factors may be more important for health outcomes, such as the availability of clean water, sanitation, nutrition, housing and household fuel, incomes (which form an input into some of the foregoing factors), hygiene and education, particularly of mothers.
- Infrastructure is just one factor in primary health care. More clinics without the complementary inputs bring little improvement in primary health care.
- Poor quality of public services may further weaken the link between the availability of public primary health care facilities and health outcomes.

In South Africa, the rapid expansion of public primary health care facilities was undoubtedly one of the gains from the post-transition period. Health care became far more available to the poor, particularly in rural areas. Yet there is still a major problem with the quality of public health care, as is attested by numerous studies and the strong preference even among the poor to use private rather than public services.

The analysis of data from the 2006 General Household Survey illustrated that access to health care facilities was no longer a major problem. In fact, modelling showed that once other factors such as income, age and gender had been considered, there was no indication that those who had further to travel to public health facilities were actually less likely to use such facilities. This is in line with results from earlier studies and with the international literature. So, even if **access** to treatment were an important factor in health outcomes (and for the reasons mentioned above, it may not have been), it would still have meant that those more distant from health facilities were not at a disadvantage.

Further analysis showed that only in one province (the Eastern Cape) did a substantial proportion of the population not have access to clinics within a reasonable travelling time. This may be the result of both a less widespread availability of clinics, and the fact that most Eastern Cape respondents travelled on foot to clinics, thus lengthening the time required to reach clinics. But even in the Eastern Cape, once other factors had been considered, there was no indication that access to health care was lower for those further from clinics.

What are the policy implications of the above?

Firstly, the international literature shows that quality of health care may be more important than just the distribution of clinics, though distance can obviously act as an impediment to access in more extreme cases. Thus there is



widespread dissatisfaction with public health facilities among the South African poor who did visit such facilities: those who did not may have done so precisely because their previous experiences had indicated to them that private facilities offered a far better service, albeit at greater cost, and they appeared to vote with their feet for the private sector. This indicates the need to focus on the quality of public clinics, which requires both accountability and ensuring that the necessary inputs are available. This is acknowledged in new policy documents of the DoH.

Secondly, there is little indication that additional resources for primary public health infrastructure (building, or even maintenance, of clinics) would affect access to treatment in South Africa.

Even those far from facilities did not have greater difficulty getting treatment when ill or injured, as the data showed.

Thirdly, there may be a separate **equity** argument for nevertheless improving the distribution of clinics, even though this may not improve health access or especially health outcomes. To some extent, health services are a consumption good, for which the poor also have claims. More clinics would reduce the travel time for the poor to access health. However, this requires not only building clinics, but also providing complementary resource inputs. National grants for clinic infrastructure make little sense without a provincial government commitment to maintain, staff and equip such clinics on a continuous basis. Funding for clinics can best be done within the budgets of provincial health departments. There are already funds made available to provinces within the equitable grant that are based on infrastructure backlogs; these could be used for clinics where both the need and the capacity exist to build, staff, equip and maintain such clinics. The known difficulties of service delivery and absorption of funds already limits the capacity of some provinces to effectively provide additional infrastructure, and this study has shown that more clinics would not lead to more treatment of illnesses and injuries.

Some information to quantify infrastructural backlog can be derived from the General Household Survey. Respondents' reported travelling time to the nearest health facility offers an indication of the relative need. A simple way of doing so would be to consider the population numbers who report being further away from a public clinic or hospital, and to weight this according to reported distance from such a facility. A simple weighting scheme could be 3 per million people for those more than 1 hour from facilities, 2 per million for those 45 - 59 minutes away, and 1 per million for those 30 - 44 minutes away. An alternative weighting scheme could be to consider only the last two travelling distance categories, weighting them 2 per million people with more than 60 minutes to travel, and 1 per million for those with 45 - 59 minutes to travel. Those with less than 45 minutes would then receive no credits.

Table 18: Alternative estimates of clinic infrastructural need

Province	Reported travelling time to nearest public health facility (for those travelling 30 minutes or more)			Implied distribution of clinic infrastructural need	
	30–44 min	45–59 min	60+ min	Weighting A*	Weighting B*
Western Cape	312 990	41 364	37 816	1.9%	1.1%
Eastern Cape	1 234 267	796 123	1 572 865	27.4%	37.0%
Northern Cape	157 133	45 294	51 279	1.5%	1.4%
Free State	414 290	105 969	60 088	2.9%	2.1%
KwaZulu-Natal	2 932 368	807 705	971 389	27.1%	25.8%
North West	800 271	317 293	315 601	8.7%	8.9%
Gauteng	1 616 400	217 923	163 147	9.2%	5.1%
Mpumalanga	790 348	210 134	164 622	6.2%	5.1%
Limpopo	1 746 269	497 430	475 665	15.1%	13.6%
Total	10 004 336	3 039 235	3 812 472	100%	100%

Weights used to determine points: For Weighting A: 3 points per million people 60 mins or more from health facility, 2 points per million for those 45-59 minutes away, and 1 per million for those 30-44 minutes away. For Weighting B: 2 points per million people 60 mins or more from health facility, 1 point per million for those 45 - 59 minutes away, and 0 points for those less than 45 minutes away.

As Table 18 clearly shows, the main difference between the two weighting systems is to give the Eastern Cape a far larger share of the infrastructural backlog if only further travelling distances are considered (Weighting B). This seems appropriate: It is the province where health facilities and other public infrastructure have been most neglected in the past.

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Public Health Care in South Africa:  
A Review of Performance:  
2003–2009

Sasha Poggenpoel



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## Abstract

This paper presents an analysis of provincial health budgets from 2003 up to 2009. The analysis shows that on average, provincial health budgets are projecting sound, yet slower growth over the 2006 Medium Term Expenditure Framework period, relative to performance over the 2003 Medium Term Expenditure Framework period. This is mainly the effect of slower growth within the equitable share allocation to provincial health departments, which in turn is a result of greater emphasis being placed on infrastructure-related departments. In terms of economic classification, personnel and goods and services are prioritised relative to capital and transfers and subsidies. In terms of the division of provincial budgets across programmes, the Emergency Medical Services programme is projected to be the fastest-growing programme over the 2006 Medium Term Expenditure Framework period, thus reinforcing the constitutional priority attached to this service. The higher growth and greater proportion of provincial health budgets allocated to the Emergency Medical Services and District Health Services programmes occur within the context of the deprioritised Central Hospital Services programme. Of concern with respect to both the Central and Provincial Hospital Services programmes is the persistent overspending illustrated in the majority of provinces, raising the question of whether the strong emphasis on District Health Services and Emergency Medical Services is crowding out adequate funding for these two programmes. Concerns around the lack of disaggregated data regarding service delivery to vulnerable groups, such as women, children, people living with disabilities and the elderly, are raised.

Keywords: Public health; service delivery, budgets, spending performance; intergovernmental fiscal relations

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## Abbreviations and Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ASGISA	Accelerated and Shared Growth Initiative for South Africa
DHS	District Health Services Programme
DOE	Department of Education
EC	Eastern Cape
EMS	Emergency Medical Services Programme
FFC	Financial and Fiscal Commission
FS	Free State Province
GDP	Gross Domestic Product
GP	Gauteng Province
HIS	Health Information System
HIV	Human Immunodeficiency Virus
IDIP	Infrastructure Development Improvement Programme
KZN	KwaZulu-Natal Province
LP	Limpopo Province
MP	Mpumalanga Province
MTEF	Medium Term Expenditure Framework
NC	Northern Cape Province
NDoH	National Department of Health
NW	North West Province
PBER	Provincial Budgets and Expenditure Review
RSA	Republic of South Africa
TB	Tuberculosis
WC	Western Cape Province

## 1. Introduction

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This paper analyses the manner in which provincial health departments allocate and spend the resources at their disposal. Where data permit, budget allocations, spending and specific health inputs (for example personnel figures) are linked to health-related output indicators in order to gauge the extent of improvements in public health care delivery. The analysis is based on seven years of data ranging from 2003/04 up to 2009/10. Financial data were sourced from National Treasury's Provincial Budgets and Expenditure Review (PBER) for 2007. Data on conditional grant funding were obtained from National Treasury's 2007 provincial database. In converting nominal figures to real gross domestic product (GDP), deflators were used with 2006 as the base year<sup>1</sup>.

This paper is divided into six sections. Section 2 provides a context to the current public health care situation in South Africa. Section 3 looks at the priority attached to health care at the national and provincial levels of government. Section 4 provides an aggregate view of performance of provincial health departments with the emphasis on the manner in which resources are divided across the various provincial health programmes. Section 5 analyses the dominant sources of funding and the division of resources across the economic classification components. Section 6 provides an analysis of the performance of the selected service delivery programmes. Section 7 presents a high-level summary and recommendations.

## 2. Placing Public Health Care in Context

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The provision of public health care is a shared responsibility between the national department and its nine provincial counterparts. At the provincial (implementation) level, health departments are projected to consume approximately 28% of provincial resources, making it the second largest department after education. In essence, the national department is responsible for policy development, monitoring of implementation and providing technical support to provincial health departments. The provincial sphere, on the other hand, is responsible for actual implementation and service delivery (National Health Act (Act No. 61 of 2003)) Access to health care services, including reproductive health care and emergency medical services, is entrenched in Section 27<sup>1</sup> of the Constitution (Act No.108 of 1996). Unlike the right to education, the right to health care is contingent upon the availability of state resources to fund service delivery.

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<sup>1</sup> The GDP deflators used are as follows: 2003=1.16; 2004=1.10; 2005=1.05; 2006=1.00; 2007=0.95; 2008=0.91 and 2009=0.86

Efficient and effective spending is thus important in ensuring that those who depend on the public health care system are adequately catered for.

Since 1994, the public health sector, in accordance with governmental developmental plans, has undergone various reforms. Core amongst these changes was the adoption of a primary health care approach and the establishment of a district health system (Department of Health, 1997). The logic behind this approach was the need to transform the health care sector from one that serviced a minority of the population to one that would be all-inclusive. This shift prompted the introduction of free primary health care services and a large clinic-building programme (National Treasury, 2001, 2005). According to National Treasury (2001), whereas South Africa's total health expenditure as a proportion of its gross domestic product is high relative to other similar countries, its health outcomes are poor when compared to those of other countries. Table 1 illustrates selected health outputs/indicators across South Africa's nine provinces for 2006.

**Table 1: Selected health status indicators, 2006**

INDICATOR - 2006	EC	FS	GP	KZN	LP	MP	NC	NW	WC	RSA
Adult Mortality <sup>2</sup>	58.5	63.7	54.5	71.1	46.9	65.1	44.4	58.5	36.4	56.3
Life Expectancy at Birth <sup>3</sup>	48.8	46.7	52.2	43	56	46.4	57.3	50.2	61.5	50.7
Infant Mortality Rate <sup>4</sup>	62	58	37	62	37	53	34	44	26	48
AIDS <sup>5</sup> Deaths <sup>6</sup>	38	51.3	55.7	57.1	39.1	56.6	29.1	51.6	22.2	47.5
HIV <sup>7</sup> Prevalence <sup>8</sup>	10	13.9	14.5	15.7	6.9	13.4	6.9	12.7	5.4	11.2
Incidence of Tuberculosis (TB) <sup>9</sup>	705	789.2	500.7	1 075.8	305.2	463.3	949.9	737.9	1 030.7	722.4
Immunisation (<1 year)	73.2	87.5	91.8	83.3	83.7	82	98	71.4	98.4	84

Source: Health Systems Trust, 2007. [EC = Eastern Cape Province; FS = Free State Province; GP = Gauteng Province; KZN = KwaZulu-Natal Province; LP = Limpopo Province; MP = Mpumalanga Province; NC = Northern Cape Province; NW = North-West Province; WC = Western Cape Province]

These indicators provide a background against which budgets and spending can be assessed.

For example, where it is evident that a particular area is consistently performing poorly against the national average of a specific indicator<sup>10</sup>, it would be interesting to examine the manner in which health resources are allocated and

- 2 Probability of dying between the ages of 15 and 60 years  
3 Per 1 000 live births  
4 The number of children less than 1 year of age who die in one year per 1 000 live births  
5 Acquired Immune Deficiency Syndrome  
6 Percentage of total deaths attributed to AIDS-related causes  
7 Human Immunodeficiency Virus  
8 Percentage of population estimated to be HIV positive  
9 Number of cases of TB reported to Dept. of Health in a year per 100 000 of the population  
10 The national average is used in the absence of minimum norms and standards to benchmark performance



whether health as a sector is prioritised within the broader provincial objectives. As is evident from the table above, KwaZulu-Natal, Mpumalanga and Free State provinces perform poorly relative to the national average in a number of the indicators looked at. The below-average performance of provinces with respect to many of these indicators is indicative of inequalities that persist with respect to health status by population group and the rural versus urban disparities which persist.

A clear lack in terms of the availability and/or reporting of comprehensive indicators besets the South African public health care sector. While numbers of patients are provided, the disaggregation of these statistics according to care provided to specific vulnerable groups (women, children, the disabled) are either not being recorded or not being made publicly available<sup>11</sup>. The FFC thus recommends that health data for vulnerable groups such as women, children, older persons and persons with disabilities be collected.

## 3. Prioritisation of Public Health Care in South Africa

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### 3.1 Identified Spending Priorities at a National Level

To guide the allocation of resources, the National Department of Health (NDOH) clarifies what the national health priorities for a specific financial year are. Although provincial health departments do have their own province-specific policies/priorities, these are decided upon and broadly aligned with nationally specified goals and objectives.

During 2007, the following aspects within the public health care system were emphasised by the President in his State of the Nation Address and the Minister of Finance in his national budget speech:

- Health workers/professionals: issues of retention and remuneration
- HIV/AIDS and tuberculosis: expanding the treatment base
- Hospital Revitalisation Programme
- Modernisation of Tertiary Services (Manuel, 2007; Mbeki, 2007).

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11 This occurs despite the fact that the National Health Act of 2003 specifically makes reference in Section 2(c) (iv), to "...protecting, respecting, promoting and fulfilling..." the rights of, "...vulnerable groups such as women, children, older persons and persons with disabilities."

According to National Treasury, the priorities listed above will remain in place in 2008, with the inclusion of two additional areas of focus. The added priority areas are the establishment of a health information system (HIS) and a focus on ensuring stable budgets (National Treasury, 2007a). The inclusion of these additional priorities is to enable improved monitoring and evaluation of the effectiveness of health programmes (in the case of a well-functioning HIS) and to ensure continuity of service delivery by ensuring stable budgets. These objectives are key in commenting on aspects of policy performance when assessing budgets and spending trends within provincial health departments.

### 3.2 Relative Provincial Prioritisation of Health

In absolute terms, provincial education departments consume the largest proportion of total provincial budgets over the entire period under review. Provincial priorities over the 2003 MTEF, and continuing into the 2006 MTEF period, show the highest prioritisation for education, followed by health, public works, roads and transport and housing (see Table 2.)

**Table 2: Proportion of provincial budgets allocated to four key provincial competencies**

Province	Education			Health			Housing and LG			Public Works, Roads & Transport		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
EC	47.49%	47.64%	47.68%	26.26%	25.67%	25.23%	5.08%	5.18%	5.57%	9.21%	9.10%	9.23%
FS	42.77%	42.12%	41.91%	27.38%	27.02%	27.18%	6.60%	6.75%	6.88%	11.95%	12.79%	12.45%
GAU	36.08%	36.50%	36.47%	29.90%	29.17%	30.27%	7.11%	7.34%	7.68%	16.03%	15.99%	14.70%
KZN	42.69%	41.60%	41.22%	30.82%	29.31%	28.87%	5.26%	5.58%	5.84%	8.27%	8.34%	8.74%
LIM	47.20%	47.61%	47.31%	24.08%	24.14%	24.30%	4.13%	4.18%	4.31%	11.51%	10.72%	10.81%
MP	49.08%	48.25%	47.92%	22.17%	23.18%	23.83%	5.18%	5.38%	5.42%	10.95%	10.19%	10.12%
NC	40.03%	39.95%	39.44%	25.78%	25.87%	26.34%	5.20%	5.27%	5.37%	9.17%	9.23%	9.37%
NW	36.94%	36.32%	35.58%	26.05%	25.51%	25.54%	6.93%	6.93%	7.05%	13.93%	14.86%	15.19%
WC	37.09%	36.52%	37.30%	34.25%	34.14%	33.59%	5.78%	6.18%	6.81%	10.65%	9.98%	9.65%

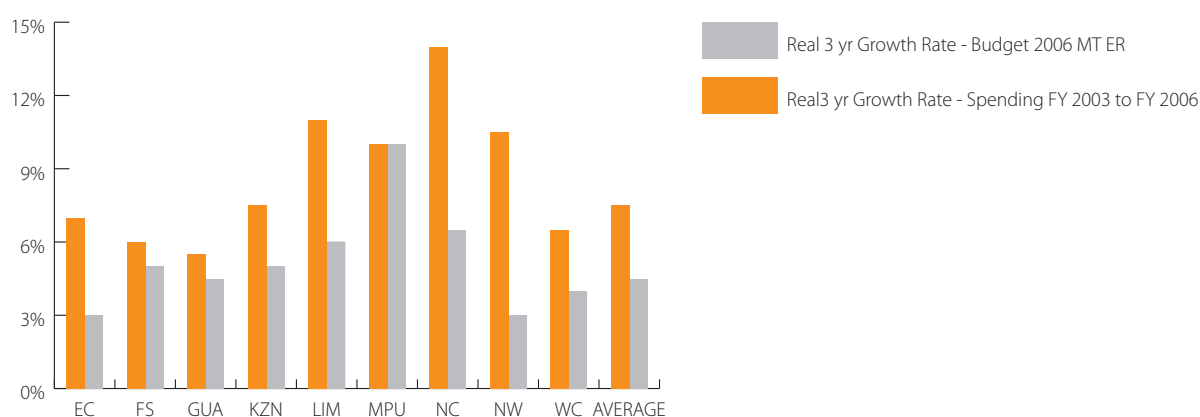
Source: Own calculations based on data from National Treasury (2007b)

## 4. Growth of Provincial Health Budgets

Figure 1 provides an illustration of real<sup>12</sup> growth rates of provincial health budgets for two periods, that is, the 2003 and 2006 MTEF periods. In general, growth within provincial health budgets is set to decelerate from 7.66% to 4.73%. This deceleration is evident across all nine provinces. The extent of the slower growth is most evident in the Northern Cape and North West provinces where growth decelerated from 13.86% to 6.53% and 10.62% to 3.32% respectively.

Mpumalanga projects the most rapid growth over the period 2006 to 2009, and the Eastern Cape projects the slowest growth. Given the levels of poverty and the large number of people dependant on the public health system in the Eastern Cape, slow real growth raises concerns over whether the provincial health department will be able to deliver on its mandate. Based on Tables 2 and 4, the reason behind this outcome may lie in greater priority being attached to Housing and Local Government and Public Works, Roads and Transport.

Figure 1: Growth in provincial health budgets



Source: Own calculations based on data from National Treasury (2007b)

<sup>12</sup> GDP deflators used with 2006 as the base year. They are as follows: 2003=1.16; 2004=1.10; 2005=1.05; 2006=1.00; 2007=0.95; 2008=0.91 and 2009=0.86

## 4.1 Performance of provincial health budgets by programme

Within the health sector, there are four core service delivery programmes, namely the District Health Services (DHS), the Provincial Hospital Services, the Central Hospital Services and the Emergency Medical Services (EMS) programmes. In terms of proportion, provincial health departments allocated 83% of the provincial health resource envelope to these four programmes in 2006.

While the DHS programme receives the lion's share of provincial health budgets, the fastest grower within the core delivery programmes over the 2006 to 2009 period is by far the EMS Programme. It is projected to grow, on average, by 11.70%. It should, however, be borne in mind that allocations to EMS are growing from a very low base, thus magnifying growth rates, relative to bigger programmes such as the DHS Programme. Nevertheless, it is hoped that the priority being given to this programme represents a move by provincial health departments to better fulfil their constitutional mandate of not excluding anybody from receiving emergency medical treatment as well as preparations towards readiness for the 2010 FIFA World Cup event. The DHS Programme – which is responsible for the delivery of primary health care services – projects the second-fastest growth over the period at 5.66% per annum in real terms.

The DHS Programme is growing more rapidly than both the provincial and central hospital services programmes. This is in line with the policy shift towards the development of a district health care system mentioned earlier. However, of concern is the extremely marginal growth of below 1% in real terms of the Central Hospitals Programme. Given the role of central hospitals in filling the need for more specialised levels of health care and providing a training ground for future health professionals, its apparent deprioritisation (as reflected in lower growth rate and percentage share of total provincial health budget projections), should be investigated.

In terms of spending relative to the budget, in aggregate terms, provincial health departments performed well with only marginal overspending of 0.71% recorded for 2006 (see Table 3). Health Care Support Services illustrate a significant level of overspending which falls within the cautionary range of exceeding 5% recommended by the Auditor-General. On aggregate, provinces are recording a 6.14% overspend within the Central Hospitals Programme. It should be noted that this level of overspending would not usually be considered excessive. However, given the strategic importance of this programme and the very marginal growth projected over the rest of the MTEF period, these trends raise concerns over the adequacy of current funding levels.

**Table 3: Division of provincial health budgets across programmes**

PROVINCIAL HEALTH PROGRAMMES (R'000)	Real 3-year Growth Rate - Spending FY 2003 to FY 2006	Adjusted Appropri. 2006/07	Under/ overspending 2006/07	Medium Term Estimates			Real 3-year Growth Rate - Budget 2006 MTEF
				2007/08	2008/09	2009/10	
Administration	0.89%	2,020,533	4.62%	2,043,650	2,152,134	2,252,286	3.69%
District Health Service	8.67%	21,296,303	1.04%	23,192,052	24,191,469	25,118,163	5.66%
Emergency Medical Services	11.35%	1,997,249	(3.11%)	2,468,765	2,604,427	2,783,699	11.70%
Provincial Hospital Services	4.27%	12,771,173	(2.22%)	13,382,418	14,383,640	14,711,055	4.83%
Central Hospital Services	5.68%	8,221,120	(6.14%)	8,225,855	8,004,528	8,364,126	0.58%
Health Sciences and Training	14.20%	1,766,013	3.18%	1,944,978	2,033,940	2,076,923	5.55%
Health Care Support Services	4.78%	782,758	(7.83%)	816,602	802,830	829,615	1.96%
Health Facilities Management	20.78%	4,414,134	3.69%	4,409,563	4,784,896	5,062,867	4.68%
TOTAL	7.66%	53,269,283	(0.71%)	56,483,884	58,957,863	61,198,734	4.73%

Source: Own calculations based on data from National Treasury (2007b)

## 5. Composition of Provincial Health Budgets

### 5.1 Funding: Equitable Share Allocation to Provincial Health Departments

The equitable share allocation is the largest source of revenue for provincial health departments. Table 4 illustrates the growth rate of health equitable share funding to provincial health departments. Figure 1 confirms that the general deceleration in growth illustrated by provincial health departments over the 2006 MTEF period is being driven by decelerations in the equitable share allocation to health departments.

The majority of provinces reflect this deceleration of growth. Exceptions to this general trend include the Eastern Cape, the Free State and Northern Cape. Whereas the Eastern and Northern Cape illustrate marginal increases in the growth attached to the health equitable share allocations, the Free State records a substantial 2.8% increase in growth between 2003/05 and the outer years of the 2006 MTEF period. Referring back to Figure 1 above, it is this sizable increase in the equitable share allocation to the Free State Provincial Health Department that made it the only province to show an acceleration in the growth of its health budget.

**Table 4: Analysis of growth rates of equitable share allocation: aggregate and province-specific analysis**

Item: Equitable Share Allocation	Real Annual Growth Rate (FY2003- FY2005)	Real Annual Growth Rate (FY2007- FY2009)
Aggregate	7.4%	4.0%
EC	1.2%	2.1%
FS	3.3%	6.1%
GAU	8.5%	2.5%
KZN	6.7%	2.6%
LIM	15.7%	7.7%
MP	10.0%	6.5%
NC	4.5%	5.3%
NW	9.6%	5.5%
WC	7.5%	4.3%

Source: Own calculations based on provincial budget statements, 2007/08

## 5.2 Funding: Aggregate Conditional Grant Allocations

Conditional grant/non-discretionary funding forms a significant portion (after equitable share funding) of total provincial health budgets. What this implies is significant national input (regulation) regarding the manner in which provincial health budgets are spent. Table 5 below illustrates the growth of aggregate as well as specific conditional grants.

**Table 5: Conditional grant funding**

ITEM: Conditional Grants	Real Annual Growth Rate (FY2003-FY2005)	Under/overspending (FY2003-FY2005)	% of Departmental Adjusted Budget (FY2006)	Real Annual Growth Rate (FY2007-FY2009)
Total budget sourced from conditional grants	8.26%	1.86%	19.83%	4.57%
Hospital Revitalisation Grant	18.09%	16.56%	3.37%	10.51%
National Tertiary Services	2.44%	(1.34%)	9.35%	3.22%
Health Professions Training & Development	0.66%	3.04%	2.89%	-0.28%
Comprehensive HIV/AIDS	63.11%	(1.39%)	3.07%	11.38%
Forensic Pathology Services	31.53%	9.77%	1.15%	-16.95%
Malaria & Cholera Prevention Grant	-100.00%		0.00%	
Hospital Construction Grant	-5.10%		0.00%	

Source: Own calculations based on data from National Treasury (2007d)

In accordance with the general slower growth of provincial health budgets, conditional grant funding to provinces also slows down over the outer years of the 2006 MTEF period. Whereas this type of funding grew by 8.26% between 2003 and 2005, growth decelerated to 4.57% in real terms over the outer years of the 2006 MTEF period. As illustrated, this type of funding constituted just under 20% of total provincial health funding in 2006.

In terms of size and relative to all other health conditional grants, the National Tertiary Services grant comprises the largest portion of provincial health budgets (9.35% of adjusted provincial health budgets in 2006). The fastest-growing grant is the Comprehensive HIV/AIDS grant, which is projected to grow by 11.38% in real terms over the 2007 to 2009 period. This is closely followed by the Hospital Revitalisation Grant which is set to grow by 10.51% over the same period. This is in accordance with the priority attached to the hospital revitalisation programme in both the State of the Nation and Budget speeches.

Notwithstanding that part of the Health Professions Training and Development grant was absorbed into the National Tertiary Services grant (which is projected to grow in real terms) and that the former is in the process of

being reformed, the declining growth of this grant, particularly within the context of the current skills dilemma facing this sector, is cause for concern. Following marginal growth over the 2003 to 2005 period, the Forensic Pathology Services grant is projected to decline by approximately 17% over the outer years of the 2006 MTEF period. According to National Treasury, the underspending of this grant is a result of delays in tendering for capital projects and in recruiting personnel (National Treasury, 2007b).

## 5.3 Inputs

### 5.3.1 Personnel

The biggest input in the provision of health care is personnel. The delivery of health care services is labour intensive, consuming well over half of provincial health budgets. Table 6 below provides an aggregate view of personnel budgets and spending. Within the context of slower growth evident across the majority of provincial health budgets, sound growth of 5.26% in real terms is projected over the 2006 MTEF period.

**Table 6: Personnel budget and spending (FY 2003–FY 2005)<sup>13</sup>**

ITEM	2004/05 to 2005/06	2005/06 to 2006/07	Under/over-spending 2006	Real 3-year Growth Rate – Budget 2006 MTEF
Personnel	3.23%	7.72%	0.27%	5.26%

Source: Own calculations based on data from National Treasury (2007b).

Considering the trends illustrated in Table 6 above and Table 7 below, it appears that, between 2004 and 2005, personnel budgets grew at a slower rate relative to the increase in the staff complement. This could explain the marginal growth (of 0.52%) in spend per staff member over the same period (see Table 7). In absolute terms, the sizable and growing shortage of skills available in the public health sector (as evidenced by the growing vacancy rate) is cause for concern.

<sup>13</sup> The years over which growth rates were calculated for this item were changed slightly to match the periods for which the non-financial, personnel-related data were available



**Table 7: Personnel complement, vacancy rate and average annual remuneration per staff**

	FY 2004	FY 2005	Annual Growth Rate (FY2004-FY2005)	FY 2006	Annual Growth Rate (FY2005-FY2006)
Total Staff Complement	231,683	242,222	4.55%	256,650	5.96%
Vacancy Rate	28.6%	29.6%	1.0%	34.1%	4.5%
Real Av. Annual Remuneration per Staff Member (R'000)	R 112	R 110	0.52%	R 112	-0.56%

Source: Own calculations based on PERSAL database

Table 8 below provides a provincial dissection of personnel trends within health departments. If one examines vacancy rates across the provinces, Mpumalanga, the Free State, North West, the Eastern Cape and Northern Cape fare poorly relative to the other provinces. Not only are these the poorer provinces, but if one recalls the health indicators provided in Table 7 above, these are also the provinces that did not compare favourably relative to the national average. In all three years for which data are available, these provinces show the highest vacancy rates (also above the national average) of the nine provinces. This may suggest that a missing ingredient in ensuring an improvement in health outcomes is adequate numbers of appropriately skilled personnel. Some provinces, for example the Eastern Cape, intend implementing a turn-around strategy in the form of *Project 5000*, which aims to recruit and employ 5 000 staff members (professional and administrative) over the next three years (Eastern Cape Provincial Treasury, 2007).

The Western Cape, on the other hand, has the lowest vacancy rate in all three years, but also the highest staff turnover rate. This could be due to the fact that it is home to three popular training hospitals (Groote Schuur, Tygerberg and Red Cross) and as a result turnover is high.

Table 8: Provincial disaggregation: personnel numbers, vacancy and turnover rates

Provincial Health Department Vacancy and Turnover Rate									
Province	2004/05			2005/06			2006/07		
	No. of Employ.	Vacancy Rate	Turn-over Rate	No. of Employ.	Vacancy Rate	Turn-over Rate	No. of Employ.	Vacancy Rate	Turn-over Rate
EC	32,153	31.9%	10.6%	32,345	35.8%	8.9%	34,802	41.0%	9.0%
FS	16,137	36.9%	8.7%	16,482	36.6%	7.4%	16,605	38.3%	6.9%
GAU	39,434	27.3%	9.6%	43,525	25.5%	8.1%	45,414	28.5%	9.6%
KZN	56,058	27.6%	9.4%	58,721	32.9%	8.2%	63,617	34.0%	11.3%
LIM	26,610	17.0%	7.8%	27,951	18.9%	9.6%	31,810	22.4%	10.8%
MP	13,960	44.2%	9.0%	14,422	40.2%	9.1%	15,491	40.1%	10.3%
NC	5,256	32.2%	12.5%	5,665	35.6%	12.8%	5,904	40.5%	14.3%
NW	17,590	34.3%	7.6%	18,116	24.5%	6.9%	17,235	44.3%	7.2%
WC	24,485	5.9%	16.8%	24,995	16.7%	17.7%	25,772	18.0%	17.2%
AVERAGE	231,683	28.6%	10.2%	242,222	29.6%	9.9%	256,650	34.1%	10.7%

Source: Own calculations based on PERSAL Database

A good reflection of the importance that the health sector attaches to skills development can be found in its Health Sciences and Training Programme. In general, training of health personnel is funded by national health and education departments, mainly through the Health Professional Training conditional grant and transfers to medical faculties of universities (National Treasury, 2001). Table 9 examines the trends within the conditional grant and the programme aimed at growing health-related human resources.

The Health Professions Training and Development grew marginally over the 2003 to 2005 period and is projected to decline by 0.28% in real terms over the outer years of the 2006 MTEF period. This implies fewer resources from the national sphere to provinces to fund skills development.

**Table 9: Health Professions Training and Development Conditional Grant**

ITEM:	Real Annual Growth Rate (FY2003-FY2005)	Under/overspending (FY2003-FY2005)	% of Departmental Adjusted Budget (FY2006)	Real Annual Growth Rate (FY2007-FY2009)
Health Professions Training & Development CG	0.66%	3.04%	2.55%	-0.28%

Source: Own calculations based on data from National Treasury (2007d)

An assessment of trends within the Health Sciences and Training Programme within provincial health budgets is given in Table 10. While projected real growth over the period illustrates a deceleration relative to the level of growth experienced over the 2003 to 2005 period, the projected 5.55% growth is sound if one considers that this is occurring in a sector that is experiencing a general slow-down in growth. Furthermore, it should be noted that the sound growth in the aggregate despite declining conditional grant funding implies that provinces are beginning to fund this item from the equitable share. The Eastern Cape, Western Cape and Free State are projecting the largest increases in allocations to this programme. Northern Cape is the only province projecting a decline in the growth attached to this programme.

Table 10: Budget and spending within the Health Sciences and Training Programme

HEALTH SCIENCES & TRAINING	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/over-spending 2006	Medium-term Estimates			Real 3-year Growth Rate - Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	36.66%	387 382	5.89%	398 394	417 976	423 757	19.87%
FS	1.83%	91 658	(7.08%)	106 734	123 878	136 106	14.09%
GAU	13.56%	269 452	(1.00%)	322 993	325 412	323 403	6.27%
KZN	4.09%	445 219	5.42%	479 999	488 957	497 511	3.77%
LIM	21.25%	235 997	(2.84%)	273 136	285 119	301 047	8.45%
MP	16.13%	91 293	9.93%	94 507	95 337	96 434	1.84%
NC	33.29%	30 977	1.27%	22 847	23 133	23 156	-9.24%
NW	13.16%	107 337	7.18%	110 797	113 372	114 341	2.13%
WC	6.14%	106 698	7.35%	135 571	160 755	161 168	14.74%
Average	14.20%	1 766 013	3.18%	1 944 978	2 033 940	2 076 923	5.55%

Source: Own calculations based on data from National Treasury (2007b)

According to the Department of Labour's 2006 'AsGISA<sup>14</sup>-aligned Scarce Skills List', general medical practitioners, primary health care nurses, registered nurses, pharmacists, pathologists, forensic scientists and radiographers have been classified as scarce (Department of Labour, 2006). In an attempt to stem the loss of skills to the private sector and other countries, the Department of Health has implemented a range of potential solutions. These include:

- the launch of a national Human Resources Plan (April 2006)
- a scarce skills and rural incentives policy (July 2003)
- agreements with various countries to regulate the recruitment of South African health-related professionals.

Despite these strategies, provinces continue to experience personnel problems. For example, in the Northern Cape, the scarce skills allowance did not have the envisioned effect since it was also available in most urban provinces – as a result health workers chose to work in a rural area in, for example, the Western Cape as opposed to a fully rural province (Gomolemo, 2007). One option is that the health department should structure its incentives in a more targeted fashion so as to ensure a more desirable outcome that substantively benefits provinces in need and not better resourced provinces. Consideration should also be given to including the provision of accommodation for health professionals willing to relocate to more rural areas.

### 5.3.2 Capital

In 1996 a health facilities audit concluded that approximately a third of hospital facilities required either replacement or repairs. Furthermore, it was estimated that the cost of eliminating the backlog would be R12 billion over eight to ten years (National Treasury, 2001). Lack of maintenance of capital assets can have serious financial and service delivery repercussions. Working conditions, in terms of access to well-functioning and modern equipment and facilities, play a role in attracting personnel.

Though representing a substantial decline from growth illustrated over the 2003 to 2006 period, capital is, nonetheless projecting sound growth over the rest of the MTEF period, especially when compared to total, aggregate growth across provincial health departments (see Table 11).

On aggregate, underspending of capital has not been excessive, but as at 2006, the level was within the Auditor-General's cautionary range. Given the success that National Treasury's Infrastructure Delivery Improvement Programme (IDIP) has had within the education sector in terms of reducing capital budget underspends, it is anticipated that it may have a similar effect on health capital spending. The IDIP was rolled out to provincial health departments recently (in July 2007). As a result, insufficient time has passed to gauge the effect of this intervention on the spending performance of provincial health departments.

Table 11: Capital spending across the nine provincial health departments

CAPITAL	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Apprpr.	Under/ over- spending 2006	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
		2006/07		2007/08	2008/09	2009/10	
EC	-2.86%	573 037	1.89%	864 503	840 625	794 127	11.49%
FS	14.99%	236 498	(4.01%)	195 365	264 654	287 975	6.78%
GAU	17.48%	1 070 332	13.96%	1 043 255	853 187	1 079 697	0.29%
KZN	16.36%	1 109 560	15.44%	1 130 055	1 045 121	1 226 238	3.39%
LIM	25.96%	662 625	(11.93%)	683 699	731 582	669 706	0.35%
MP	56.56%	270 713	9.54%	321 614	477 802	520 214	24.32%
NC	82.26%	281 861	(5.84%)	209 354	236 475	267 853	-1.68%
NW	29.24%	409 189	21.96%	359 053	388 107	356 042	-4.53%
WC	17.95%	449 160	7.84%	432 553	583 925	526 090	5.41%
Average	18.40%	5 062 975	7.46%	5 239 451	5 421 478	5 727 942	4.20%

Source: Own calculations based on data from National Treasury (2007b)

### 5.3.3 Transfers and subsidies

The proportion of provincial health budgets allocated to transfers and subsidies has been consistently declining from 7% in 2003 to approximately 3% or 4% over the 2006 MTEF period. This is largely the result of the process of provincialisation of personal primary health care service that is currently under way. Once provincialised, costs associated with municipal clinics will form part of current payments (KwaZulu-Natal Provincial Treasury, 2007:315), thus decreasing transfers to municipalities. Trends in Table 12 confirm this with five of the nine provinces projecting budget declines for this item over the 2006 MTEF period.

Table 12: Transfers and subsidies

TRANSFERS & SUBSIDIES	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/ over-spending 2006	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	-24.75%	374 605	22.92%	115 888	48 830	48 244	-49.50%
FS	-9.96%	55 956	(31.95%)	60 098	72 980	83 427	14.24%
GAU	-2.81%	708 603	(4.81%)	759 599	738 388	726 777	0.85%
KZN	4.85%	383 957	4.61%	360 771	326 785	331 144	-4.81%
LIM	-5.20%	119 755	(10.34%)	151 634	158 185	167 690	11.88%
MP	12.71%	88 657	12.05%	94 957	72 106	77 537	-4.37%
NC	26.59%	28 641	(0.87%)	36 079	39 690	39 384	11.20%
NW	47.84%	111 901	(52.51%)	98 081	105 198	101 914	-3.07%
WC	-11.79%	387 799	2.44%	386 804	397 618	386 194	-0.14%
Average	-6.15%	2 259 874	0.02%	2 063 910	1 959 778	1 962 311	-4.60%

Source: Own calculations based on data from National Treasury (2007b)

### 5.3.4 Goods and services

Goods and services comprise a sizable portion of provincial health budgets (see Table 13). Over the 2006 MTEF period, this item will consume, on average, over 30% of total provincial health budgets. In terms of growth over the period, projections indicate a real annual average of 5.13%.

In terms of spending performance, the majority of provinces indicate significant overspending. This could be the result of inadequate planning on the part of departments, or it could be an indication that this item should be allocated more resources. Given that goods and services encompass spending on medicines, laboratory services, surgical consumables and other supplies, the priority being afforded this item, relative to transfers and subsidies and capital, is welcomed.

Table 13: Budgets and spending on goods and services across provincial health departments

GOODS & SERVICES	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/ over-spending 2006	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	23.07%	3 869 873	0.25%	4 198 852	4 262 669	4 242 042	5.51%
FS	7.51%	1 074 431	(4.56%)	1 082 909	1 142 936	1 284 853	6.14%
GAU	8.96%	3 790 165	(8.20%)	4 041 349	4 238 454	4 493 104	5.84%
KZN	8.57%	3 577 289	(4.28%)	3 947 509	4 124 599	4 219 683	5.66%
LIM	20.87%	1 532 389	(7.51%)	1 503 256	1 544 053	1 666 063	2.83%
MP	4.87%	999 989	(6.24%)	976 975	1 089 230	1 196 776	6.17%
NC	5.11%	415 040	(10.56%)	406 751	458 711	488 998	5.62%
NW	13.52%	1 121 928	4.13%	1 157 059	1 249 500	1 338 247	6.05%
WC	10.19%	2 096 353	(5.27%)	2 141 217	2 254 695	2 252 993	2.43%
Average	11.39%	17 127 068	(4.82%)	17 840 169	19 078 240	19 900 391	5.13%

Source: Own calculations based on data from National Treasury (2007b)

## 6. Programme-specific Analysis

### 6.1 Relative Prioritisation of the Four Core Service Delivery Programmes

Table 14 gives an indication of the relative priority provinces will attach to the core service delivery areas over the 2006 MTEF period. On aggregate, growing priority is being attached to EMS. Looking at performance within specific provinces provides a more detailed view. Over the period covered, there are four provinces that are projected to show **consistent** declines in the proportion of the provincial health budget allocated to the DHS programme – they are the Free State, Mpumalanga, Northern Cape and Western Cape. Given the intrinsically pro-poor nature of the interventions encompassed under this programme, assigning it a lower priority is of concern. Of concern is the drop in the proportion allocated to central hospitals. In 2007 the proportion allocated to this programme was 14.56%, whereas in 2009 the proportional allocation is set to decline to 13.67%. While this sort of trend is in line with policy shifts calling for the rationalisation of this type of service, provinces need to ensure a balance such that the efficient operation and maintenance of central hospitals is ensured.



**Table 14: Percentage of total provincial health budget allocated to the four main service delivery programmes**

Province	EMS as % of Total Budget			DHS as % of Total Budget			Provincial Hospital Services as % of Total Budget			Tertiary Hospital Services as a % of Total Budget		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
EC	4.68%	4.69%	4.70%	43.66%	44.13%	44.43%	33.88%	33.95%	33.79%	0.00%	0.00%	0.00%
FS	5.19%	5.18%	5.86%	35.79%	35.23%	33.91%	26.41%	26.15%	26.44%	17.88%	17.29%	17.75%
GAU	4.17%	4.78%	4.78%	26.50%	25.71%	25.92%	24.96%	25.00%	23.86%	29.17%	29.63%	29.62%
KZN	4.13%	3.88%	4.23%	46.22%	46.70%	46.48%	26.19%	25.96%	25.38%	9.48%	9.72%	9.76%
LIM	3.79%	3.92%	4.00%	52.47%	52.76%	53.97%	12.74%	13.01%	13.29%	8.37%	8.67%	8.58%
MP	4.07%	4.06%	4.30%	52.65%	51.23%	49.49%	14.22%	13.36%	14.00%	11.75%	13.10%	13.36%
NC	6.83%	6.75%	6.62%	47.93%	47.02%	46.06%	24.25%	23.57%	23.28%	0.00%	0.00%	0.00%
NW	3.78%	3.55%	3.34%	49.12%	48.19%	49.70%	26.21%	25.92%	25.97%	2.17%	2.26%	2.24%
WC	4.86%	4.72%	4.72%	34.40%	34.36%	34.08%	16.50%	23.95%	24.21%	30.67%	21.43%	21.16%
AVG	4.37%	4.42%	4.55%	41.06%	41.03%	41.04%	23.69%	24.40%	24.04%	14.56%	13.58%	13.67%

Source: Own calculations based on data from National Treasury (2007b)

## 6.2 District Health Services Programme

### 6.2.1 Aggregate performance within the District Health Services Programme by province

The DHS Programme is the largest programme within provincial health budgets. It is the cornerstone of South Africa's primary health care approach and the transformatory drive to make the delivery of health care all inclusive and more equitable.

Table 15 outlines the growth rates and degrees of under/overspending over the period. Analysis indicates that over the rest of the 2006 MTEF period, the DHS programme will grow on average by 5.66% in real terms. This represents a deceleration relative to growth illustrated over the 2003 to 2006 period. Over the rest of the MTEF period, most provincial DHS programme budgets exhibit healthy real growth over the 5% range. The exceptions are Free State, North West and Eastern Cape – all three provinces are projecting relatively marginal growth.

The low growth projected for the Free State may be the result of the decline in the proportion of the budget allocated to the DHS programme (see Table 14). In aggregate terms, it appears that provinces have spent relatively well, with no province strongly exceeding the Auditor-General's 5% cautionary range.

**Table 15: Performance within the District Health Services Programme budget**

District Health Services Programme	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/ over-spending 2006/07	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	5.43%	3 314 391	2.31%	3 389 430	3 586 926	3 574 121	2.55%
FS	7.62%	1 309 177	1.39%	1 243 051	1 299 006	1 325 940	0.42%
GAU	8.13%	2 492 773	0.53%	3 044 306	2 978 802	3 168 697	8.33%
KZN	8.81%	5 390 094	0.37%	5 910 424	6 090 401	6 305 780	5.37%
LIM	10.12%	2 800 173	(3.56%)	3 049 043	3 312 282	3 579 968	8.53%
MP	8.18%	1 587 572	2.07%	1 804 203	1 921 533	1 983 636	7.71%
NC	12.81%	510 966	(2.99%)	667 019	700 679	733 043	12.78%
NW	8.92%	1 894 386	5.33%	1 757 929	1 824 503	1 982 242	1.52%
WC	12.75%	1 996 771	3.70%	2 326 648	2 477 337	2 464 736	7.27%
Average	8.67%	21 296 303	1.04%	23 192 052	24 191 469	25 118 163	5.66%

Source: Own calculations based on data from National Treasury (2007b)

What follows is a closer look at trends within the DHS and the Provincial and Central Hospitals programmes. The choice of these three programmes is based on their strategic importance in ensuring service delivery to the poor and the role played in providing a training ground for potential health professionals. In the case of the DHS Programme, a sub-programme analysis has been included due to the role these interventions play in taking health care service delivery to grass-roots level. The exclusion of the EMS Programme from a deeper analysis is based on the reasoning that over the 2006 MTEF period, this programme projects a relatively stable and healthy growth path.

### 6.2.2 Analysis of District Health Services sub-programme

An examination of the sub-programmes that comprise the DHS programme shows that District Hospitals is the largest, consuming on average 16% of provincial health budgets between 2006 and 2009 (see Table 16). In terms of growth, the Community Health Clinics and HIV/AIDS sub-programmes are driving growth within this programme. These two sub-programmes are projected to grow by a real annual average of 11.76% and 11.23% respectively. The strong growth projected for the HIV/AIDS sub-programme seems to be a response to the rather excessive overspending (14.37%) demonstrated by this sub-programme in 2006.

Of the sub-programmes, only the Coroner Services and Nutrition sub-programmes are projecting a decline in allocation over the rest of the MTEF period. The decline in the Coroner Services sub-programme is, in all probability, a response to excessive underspending recorded in 2006 and is thus not wholly unexpected. The Nutrition sub-programme, on the other hand, demonstrates a rather unstable growth over the period under review. Following growth of 6% over the 2003 MTEF period, substantial overspending was recorded in 2006, which points to the fact that funding levels for this particular sub-programme are not optimal. While one would expect an increased allocation to this sub-programme, analysis projects a decline of 0.45% per annum up to 2009.

Notwithstanding the role that the Department of Education (DOE) plays in providing nutrition to school-going children; this sub-programme is key in delivering services to specific target groups such as young children (via interventions to prevent stunting, growth faltering and malnutrition) and those living with HIV/AIDS (through the provision of nutritional supplements to people living with HIV/AIDS). This sub-programme contributes to the fulfilment of South Africa's commitment to meet the 2015 Millennium Development Goals with respect to infant and under-5 mortality rates.

Table 16: Performance of core District Health Services subprogrammes

R'000	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/ over- spending 2006	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
District Health Services	8.67%	21 296 303	2.31%	23 192 052	24 191 469	25 118 163	5.66%
Community Health Clinics	5.05%	4 333 287	6.17%	5 121 372	5 683 272	6 049 373	11.76%
Community Health Centres	6.27%	2 387 452	15.50%	2 609 825	2 654 742	2 677 496	3.90%
Community-based Services	14.79%	1 068 580	7.84%	1 054 140	1 072 061	1 092 416	0.74%
HIV/AIDS	48.97%	2 423 349	(14.37%)	2 744 899	2 951 095	3 334 490	11.23%
Nutrition	6.20%	179 640	(22.13%)	176 225	177 862	177 213	-0.45%
Coroner Services	57.98%	579 318	56.13%	429 985	388 302	352 703	-15.25%
District Hospitals	4.73%	8 744 463	(0.27%)	9 314 771	9 500 591	9 688 498	3.48%

Source: Own calculations based on data from National Treasury (2007b)

According to Statistics South Africa (STATSSA, 2005), malnutrition was among the ten leading causes of death among children aged under four years of age. Furthermore, while the figures showed a fluctuation in the percentage of deaths linked to malnutrition, the numbers of deaths increased steadily (STATSSA, 2005). Given the purpose of this sub-programme, inadequate spending performance and marginal growth are issues that need to be urgently addressed. The non-financial statistics in Table 17 indicate that in terms of decreasing the number of children who die before their first birthday (infant mortality rate), or the number who die before the age of five years (under-5 mortality rate), South Africa requires much improvement. While acknowledging that ensuring the good health and nutrition of vulnerable groups requires cross-departmental interventions, departments need to ensure that where funding is allocated, potential beneficiaries are receiving value for money.

**Table 17: Performance towards the Millennium Development Goals**

INDICATOR	SA Demographic Health Survey (1998)	MRC Burden of Disease Study (2000)	2015 MDG Commitment
Infant Mortality Rate	45 per 1 000	60 per 1 000	15 per 1 000
Under-5 Mortality Rate	59 per 1 000	95 per 1 000	20 per 1 000

Source: Children's Institute (2006)

## 6.3 Provincial Hospital Services Programme

On aggregate, budget growth within the Provincial Hospital Services Programme will increase stably over the 2006 MTEF period (see Table 18). In general, increased allocations to general and TB hospitals drive growth in this programme. With respect to spending performance, the majority of provinces show overspending during 2006. Reasons for this performance need to be investigated. It may be the result of poor planning on the part of provincial departments or, more seriously, overspending may be indicative of inadequate funding for this programme. Except for Gauteng and KZN, provinces are projecting sound real growth over the MTEF period.

Table 18: Provincial Hospital Services Programmes

PROVINCIAL HOSPITAL SERVICES PROGRAMME (R'000)	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/ over-spending 2006/07	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	3.70%	2 269 097	(0.80%)	2 630 209	2 759 864	2 717 979	6.20%
FS	5.24%	867 048	(9.79%)	917 210	964 157	1 033 812	6.04%
GAU	3.33%	2 824 831	(4.10%)	2 868 034	2 897 081	2 916 343	1.07%
KZN	1.65%	3 163 833	0.79%	3 348 246	3 385 412	3 443 409	2.86%
LIM	12.28%	722 984	0.09%	740 199	816 425	881 464	6.83%
MP	13.72%	435 347	(1.25%)	487 198	500 969	560 918	8.81%
NC	3.41%	307 834	(9.25%)	337 515	351 196	370 577	6.38%
NW	8.47%	830 666	(1.04%)	938 096	981 451	1 035 572	7.63%
WC	4.52%	1 349 533	(3.56%)	1 115 710	1 727 085	1 750 980	9.07%
Average	4.27%	12 771 173	(2.22%)	13 382 418	14 383 640	14 711 055	4.83%

Source: Own calculations based on data from National Treasury (2007b)

## 6.4 Central Hospital Services Programme

The purpose of central hospitals is to provide highly specialised care on a national basis and a platform for the training of health workers (Western Cape Treasury, 2007: 208). Although the primary health care approach requires greater emphasis on clinics, community health centres and similar service delivery channels, central hospitals are crucial to ensuring that an adequately sized and trained work force exists. In light of the scarce skills challenge facing the health sector and the need to attract and retain health professionals, adequately equipped tertiary facilities are a necessity.

Based on South Africa's adoption of the primary health care approach, it is expected that district health services would receive priority relative to more specialised levels of care. Of concern is the rather extreme deceleration projected for central hospitals over the 2006 MTEF period. Projected growth is marginal, at less than 1% per annum in real terms.

In certain instances, the negative effects of this rationalisation process in terms of how it affects institutions and the reduction in patient loads that they will have to enforce, are stark. For example, in keeping within the parameters of national health policy and directing resources disproportionately towards primary health care, the Western Cape will be reducing the number of beds at both Groote Schuur and Tygerberg hospitals during 2007 (Western Cape Treasury, 2007: 208). As is evident in Table 19, the allocation to central hospitals in this province is projected to decline by over 10% per annum. As was mentioned earlier with respect to the Provincial Hospital Services Programme, there is concern as to whether overspending in this programme across the majority of provinces represents a response to inadequate funding.

**Table 19: Central Hospital Services**

CENTRAL HOSPITAL SERVICES PROGRAMME (R'000)	Real 3-year Growth Rate – Spending FY2003 to FY2006	Adjusted Appropri. 2006/07	Under/ over-spending 2006/07	Medium-term Estimates			Real 3-year Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FS	4.92%	576 169	(4.04%)	620 990	637 641	693 944	6.40%
GAU	4.61%	3 386 868	(12.28%)	3 351 921	3 433 093	3 621 370	2.26%
KZN	10.23%	1 168 164	(2.02%)	1 212 464	1 267 249	1 324 356	4.27%
LIM	7.19%	480 238	(3.40%)	486 215	544 309	569 278	5.83%
MP	8.02%	417 534	(6.12%)	402 491	491 568	535 321	8.64%
NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NW	19.76%	69 380	(0.32%)	77 606	85 446	89 271	8.77%
WC	4.35%	2 122 767	(0.01%)	2 074 167	1 545 222	1 530 585	-10.33%
Average	5.68%	8 221 120	(6.14%)	8 225 855	8 004 528	8 364 126	0.58%

Source: Own calculations based on data from National Treasury (2007b)

## 7. Summary and Recommendations

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On aggregate, the resource envelope allocated to public health care is projected to decelerate over the 2006 MTEF period. This is mainly driven by slower growth of the equitable share allocation to provincial health departments. In terms of skills development, analysis indicates that while conditional grant funding is set to decline over the 2006 to 2009 period, provinces are starting to fund training from their equitable share allocations. This is evident in the stable growth attached to the Health Sciences and Training programmes. With respect to performance of core service delivery programmes, marginal yet persistent overspends within the Provincial and Central Hospital Services programmes are noted across the majority of provinces. This has occurred within the context of highly prioritised and growing budgets allocated in respect of the DHS and EMS programmes, thus raising questions as to the adequacy of funding for these strategically important programmes. An uneven growth path and poor spending performance exhibited by the Nutrition sub-programme is noted. This sub-programme is part of the primary health care package aimed at delivering pro-poor health care. This programme grew by 6% over the 2003 MTEF period. Average overspending as at 2006 was extreme at 22%. This poor spending performance is in all probability an indication that this sub-programme requires greater funding, yet projections up to 2009 indicate that allocations to this programme are set to decline. An aspect that must be highlighted is the need for more comprehensive statistics regarding delivery to vulnerable groups (women, children, people with disabilities). This is required in order to assess the extent to which public services assist in uplifting the lives of these groups.

As a result, the following three recommendations are made:

- Given the importance of provincial and academic hospitals in fulfilling the need for specialised levels of care, in coping with the HIV/AIDS pandemic and in providing a training ground for aspiring health professionals, caution needs to be exercised to ensure that these two levels of care are adequately funded.
- Greater priority should be attached to the Nutrition sub-programme if South Africa is to meet its Millennium Development Goal commitments and expand the width and depth of service delivery provided through this intervention. Budget growth should be closer to the average growth of the parent programme, that is, the District Health Services Programme
- Data collected should provide information regarding service delivery to specific (and vulnerable) groups, such as (i) children, (ii) women (particularly mothers requiring reproductive health care), (iii) the aged and (iv) those living with disabilities.



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Public Housing in South Africa:  
A Review of Performance:  
2003–2009

Sasha Poggenpoel

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## Abstract

This paper presents an analysis of provincial housing departments for the period 2003 up to 2009. The growth rates, proportional allocations and spending-to-budget ratios of programmes in both aggregate and individual, provincial terms, are assessed. On average, growth within the core, provincial housing service delivery programmes is projected to grow faster in real terms over the 2006 medium term expenditure framework period compared with the growth experienced over the period from 2003 to 2006. Growth in the sector is being driven predominantly by greater national focus on infrastructure-related departments such as housing and transport. Of concern within the majority of programmes administered by provincial housing departments is the poor spending performance that is prevalent across the majority of programmes. The accreditation of municipalities to manage the housing function could potentially reduce spending inefficiencies. It appears that the majority of provinces are not adhering to the legal requirements set out in the Integrated Housing and Human Settlement Development conditional grant framework in terms of data and reporting. This framework is published each year in the Division of Revenue and lists the various output indicators to which those receiving the funding should adhere. Furthermore, current indicators used to gauge delivery do not disaggregate information to ensure their usefulness.

Keywords: Public housing, Budgets, Spending performance, Inter-governmental fiscal relations, Service delivery data

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## Abbreviations and Acronyms

ASGISA	Accelerated and Shared Growth Initiative for South Africa
BNG	Breaking New Ground
EC	Eastern Cape
EPWP	Expanded Public Works Programme
FS	Free State
GAU	Gauteng
GDP	Gross Domestic Product
IHAHSD	Integrated Housing and Human Settlement Development Grant
KZN	KwaZulu-Natal
LIM	Limpopo
MPU	Mpumalanga
MTEF	Medium-Term Expenditure Framework
NC	Northern Cape
NW	North-West
PBER	Provincial Budgets and Expenditure Review
RSA	Republic of South Africa
SARB	South African Reserve Bank
WC	Western Cape

## 1. Introduction

The primary aim of this paper is to analyse the performance and, to a certain extent, the capacity of provincial housing departments. To achieve this aim, the paper provides a detailed assessment of budget and spending trends by programme and province. By including a measure to assess spending performance and figures pertaining to vacancy rates, a sense of the capacity (or lack thereof) within provincial housing departments is gained. Where the data permit, budget allocations, spending and specific housing inputs are linked to housing-related outputs. The analysis is based on seven years of data collected from 2003 up to 2009. Financial data have been sourced from the National Treasury's Provincial Budgets and Expenditure Review (PBER) for 2007. For information on conditional grant funding, the National Treasury's 2007 Provincial Database, Version 1.1, has been used. To convert the figures from nominal to real, Gross Domestic Product (GDP) deflators, based on South African Reserve Bank (SARB) data<sup>1</sup>, have been used. For the base year, 2006 was used.

This paper is divided into four main sections. Section 2 provides a broad overview of public housing in South Africa. Section 3 looks at two aspects: firstly, it provides a discussion on the challenges that hinder analysis of provincial housing budgets; and, secondly, it describes how provincial housing departments divide their resources across the various housing programmes. Section 4 provides an analysis of the dominant source of funding for provincial housing, as well as a programme-specific analysis of the core housing programmes within the nine provinces. Finally, Section 5 summarises the main points and provides recommendations.

## 2. A Broad Overview of Housing

### 2.1 Legislative mandate

The right to housing is enshrined within the South African Bill of Rights (Section 26), which states that “*Everyone has the right to have access to adequate housing...*” and “*The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right*” (Republic of South Africa (RSA), 1996).

<sup>1</sup> The GDP deflators used are as follows: 2003=1.16; 2004=1.10; 2005=1.05; 2006=1.00; 2007=0.95; 2008=0.91 and 2009=0.86

According to Schedule 4, Part A, of the Constitution, the housing function is a shared responsibility between the national and provincial spheres of government (RSA, 1996). The Housing Act of 1997 and the 2006 Division of Revenue Act expand on the Constitutional allocation of roles and responsibilities to include particular functions for the local sphere as well (National Department of Housing, 1997a)<sup>2</sup>. A key development spelled out in these two documents was the decision to allow provinces the authority to accredit municipalities. Once a municipality is accredited, it is effectively empowered to undertake the housing function (National Treasury, 2006). That the delivery of housing straddles the three spheres of government highlights the need for optimal inter-governmental co-operation and co-ordination to ensure effective and efficient housing interventions.

A key development with respect to housing policy was the implementation of the Comprehensive Plan for Sustainable Human Settlements (also known as the 'Breaking New Ground' (BNG) policy) in 2005. This policy underpins a change in the approach to housing delivery that was initially envisioned in 1997. Prior to its implementation, the approach adopted by the government was narrowly defined and focused solely on providing a basic shelter and bringing stability to the housing sector. Since 2005, this vision has been holistically expanded to focus on the development of sustainable human settlements. Essentially, what this implies is that housing developments need to go hand in hand with the provision of and access to social and economic infrastructure. According to the Department of Housing, "...a multi-purpose cluster concept will be applied to incorporate the provision of primary municipal facilities such as parks, playgrounds, sports fields, crèches, community halls, taxi ranks, satellite police stations, municipal clinics and informal trading facilities" (National Department of Housing, undated). BNG further aims to:

- eradicate informal settlements via upgrading of settlements or relocation of households
- strengthen the role that the sector can play in reducing asset poverty
- strengthen the role played by local government as provided for via the process of accreditation, which allows capacitated municipalities to take on the responsibility of housing programmes, thus reducing transaction costs and administration (National Department of Housing, undated).

This new approach adopted by the Department of Housing re-emphasised the need for strong, inter-sectoral and inter-governmental collaboration.

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<sup>2</sup> *The Constitution, in Section 156, allows for provinces to devolve certain powers and functions, contained in Part A of Schedules 4 and 5, to municipalities. The housing function falls within Part A of Schedule 4 (RSA, 1996).*

## 2.2 Brief situational analysis of housing in South Africa

Over the 2006 Medium Term Expenditure Framework (MTEF) period, housing departments consumed, on average, 5.6% of the total resources allocated to provinces. Relative to the shares allocated to education, health and transport, the housing function receives the smallest portion. It should, however, be noted that the proportion of provincial resources allocated to housing is growing more rapidly than those allocated to the three sector departments mentioned above. With regard to the performance of the various components within provincial housing budgets, the fastest-growing programme over the MTEF period is the Housing Development Implementation (Subsidy) Programme, which is projected to grow by 11.79% in real terms.

According to government, South Africa's delivery rate of subsidised housing units is unparalleled internationally (National Treasury, 2007b). Despite this, various challenges persist within the sector. These relate to stalled projects, the speed at which land is released and zoned, and the slow pace at which patterns of separate living, entrenched during apartheid, are being transformed (National Treasury, 2007b). It is clear that this sector is not operating optimally.

In 1995, the Housing White Paper estimated that the housing backlog was 1.5 million units. Census 2001 estimated it at 2.4 million units. In 2006, the Provincial Budget and Expenditure Review reported that, *"Despite the delivery... of subsidised houses since 1994, the housing backlog has grown"* (National Treasury, 2006: 76). In her 2007 Budget Speech, the Minister of Housing highlighted the fact that the Department had, *"...broken through the backlog barrier and have produced more houses than there are people in our backlog"* (Sisulu, 2007a). What she was referring to was a reduction in the backlog from 2.4 million to 2.2 million.

The existing housing stock within South Africa is composed of:

- **Urban formal housing:** This refers to houses, flats, townhouses and retirement homes.
- **Urban informal housing:** Approximately 1.5 million urban informal housing units exist. These include serviced sites delivered by the old provincial authorities and the Independent Development Trust's Capital Subsidy Programme.
- **Hostels:** There are three types of hostels, namely private sector, grey sector and public sector hostels.
- **Squatter housing:** This refers to free-standing squatter settlements on the periphery of cities and towns and/or in the backyards of formal houses.

- **Rural housing:** This consists of a combination of formal and informal structures, with both having inadequate access to water and sanitation.
- **Farm worker housing:** A major problem with this form of housing is the lack of security with regard to tenure (National Department of Housing, 1997b).

The housing sector administers, amongst others, the following key interventions:

- **Individual subsidies:** There are two types of individual subsidies, namely credit and non-credit. These subsidies aim to assist individual households to acquire ownership of serviced stands.
- **Project-linked subsidies:** These enable a beneficiary to acquire a complete residential unit that has been developed within an approved project-linked housing subsidy project.
- **Institutional subsidies:** These are subsidies available to institutions that provide tenure arrangements as an alternative to immediate ownership, for example, rental or rent-to-buy options.
- **Rural subsidies:** These provide benefits to those living in 'rural' areas where access to land may be governed by traditional authorities. Subsidies are granted only where informal land rights are uncontested.
- **Indigent subsidies:** These include beneficiaries who fall into the categories of 'aged', 'living with disabilities' and 'living with health-stricken problems'. Minimum earning criteria are applied to determine eligibility.
- **People's housing process project:** This project assists people to access subsidies in order to allow them to build or organise the building of a house by themselves.
- **Social housing:** The aim is to provide rental or co-operative housing options for low-income persons.
- **Community residential units:** The aim is to facilitate the provision of stable rental tenure for the lowest income persons who are unable to be catered for within the social housing or private rental market.
- **Emergency housing assistance:** The aim is to provide temporary assistance (in terms of access to land/ basic municipal services/shelter) for those whose existing shelters have been destroyed or damaged. This is only offered in emergency situations where the need is exceptional (National Department of Housing, 2007).

Table 1 shows the number of housing units completed and in the process of completion by province. This is regarded as the most important service delivery indicator in the housing sector (National Treasury, 2006: 72). The figures show that, in total, the number of houses either completed or under construction, except for a decline in

2003/04, has been increasing steadily. A closer examination of the most recent period, 2005 to 2006, shows that, although the total number of housing units either completed or in the process of completion has increased by 7%, the majority of provinces are exhibiting a decline.

By and large, the increase in the total figure is being driven by massive acceleration in the units completed/nearing completion in three provinces, namely the Western Cape, the North-West and Gauteng. Between 2005 and 2006, the number of units completed or in the process of completion within these three provinces grew by 206%, 32% and 30% respectively. Of concern is the 17% decline noted in the Eastern Cape, which is among those provinces with the largest housing backlogs.

The data reflected in Table 1 raise a key concern with regard to the use of this particular indicator in measuring service delivery within the public housing sector. The concern is that the figures are not disaggregated so as to differentiate between houses completed and those that are not yet completed. Thus, large numbers may or may not be reflecting incomplete houses or even stalled or blocked projects.

**Table 1: Housing units completed and in the process of completion**

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	Total
EC	10 816	58 662	27 119	3 524	19 825	16 526	170 472
FS	7 005	9 155	16 746	16 447	20 536	19 662	895 51
GAU	46 723	24 344	49 034	66 738	59 310	77 044	323 193
KZN	14 379	24 485	33 668	36 734	35 872	38 290	183 428
LIM	16 667	14 953	15 810	16 514	46 813	23 609	134 366
MPU	14 584	21 649	21 232	18 000	14 986	10 651	101 102
NC	2 588	6 056	3 787	3 598	8 667	3 880	28 576
NW	13 885	23 784	10 484	10 037	35 515	46 972	140 677
WC	16 634	20 500	15 735	11 756	11 310	34 585	110 520
TOTAL	143 281	203 588	193 615	217 348	252 834	271 219	1 281 885

Source: National Treasury, 2007a

Although the rate of public housing delivery is high, challenges persist and are evident in the growing backlog and the high number of stalled (blocked) projects – according to National Treasury figures, projects involving 70 423 houses had been blocked as at 31 March 2007 (National Treasury, 2007a: 68). Challenges with regard to quantifying the backlog that currently exists in South Africa also persist, further exacerbating the situation and making it difficult to gauge the true extent of the housing need in the country.

It is therefore evident that various inefficiencies exist within the delivery of housing in South Africa. The Minister of Housing's Cabinet-endorsed plan to expand the responsibilities of municipalities to take up the housing function in 2005 was aimed at leveraging the potential advantages of decentralisation. This entailed increasing the efficiency of delivery by devolving the responsibility for the function to the lowest possible level (National Treasury, 2007b).

According to the 2006 PBER, the process of accrediting municipalities has been sluggish. In the light of the various challenges and the current inadequate and/or inefficient delivery of housing, the process of devolving the housing function to the municipal level may offer potential gains in terms of improving service delivery. For this reason, the pace at which capable municipalities are accredited should be increased. It is, however, important to keep in mind the dynamics that arise in a situation where one sphere of government loses a function to another and the political tensions that this can give rise to.

## 2.3 Housing sector priorities

At a national level, both the 2007 State of the Nation and Budget Speeches reiterated the importance of the current focus on infrastructure, which encompasses housing (Mbeki, 2007 and Manuel, 2007). The strategic priorities, in line with the BNG, guiding the housing sector up until 2009/10 are to:

- accelerate housing delivery
- improve the quality of housing products and environments to ensure asset creation
- ensure a single, efficient formal housing market
- restructure and integrate human settlements

- use the provision of housing as a job-creation strategy
- assess property as an asset for wealth creation and empowerment (National Treasury, 2007c: 558).

In addition, the Minister of Housing, in her 2007 Budget Speech, emphasised that the bulk of funding will be utilised for project-linked subsidies, phased development approach subsidies, informal settlement upgrading and the unblocking of blocked projects (Sisulu, 2007a)<sup>3</sup>

## 2.4 Relative provincial prioritisation of housing

In accordance with the specific sectoral emphases required by the Accelerated and Shared Growth Initiative for South Africa (ASGISA), provinces have allocated increasing priority to infrastructure-related departments<sup>4</sup>. The following points should be noted in Table 2 below:

- Education consumes the largest proportion of provincial budgets, followed by public healthcare.
- Although housing consumes a relatively smaller proportion of provincial budgets, the size of the proportion has been increasing consistently across all nine provinces. This should be seen within the context of a declining proportion of provincial budgets allocated to, for example, health and education.

<sup>3</sup> For a discussion on broader institutional issues, see: Mtantato, S. 2008. *Institutional Bottlenecks Hampering Housing Delivery in South Africa*. FFC: Midrand.

<sup>4</sup> For further details regarding ASGISA, see Mlambo-Ngcuka, P. 2006. *Background Document: A Catalyst for Accelerated and Shared Growth – South Africa (ASGISA)*. [Online]. Available at: [www.info.gov.za](http://www.info.gov.za)



Table 2: Proportion of the provincial budgets allocated to education, health, transport and housing

Province	Education			Health			Housing and Local Government			Public Works, Roads & Transport		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
EC	47.49%	47.64%	47.68%	26.26%	25.67%	25.23%	5.08%	5.18%	5.57%	9.21%	9.10%	9.23%
FS	42.77%	42.12%	41.91%	27.38%	27.02%	27.18%	6.60%	6.75%	6.88%	11.95%	12.79%	12.45%
GAU	36.08%	36.50%	36.47%	29.90%	29.17%	30.27%	7.11%	7.34%	7.68%	16.03%	15.99%	14.70%
KZN	42.69%	41.60%	41.22%	30.82%	29.31%	28.87%	5.26%	5.58%	5.84%	8.27%	8.34%	8.74%
LIM	47.20%	47.61%	47.31%	24.08%	24.14%	24.30%	4.13%	4.18%	4.31%	11.51%	10.72%	10.81%
MPU	49.08%	48.25%	47.92%	22.17%	23.18%	23.83%	5.18%	5.38%	5.42%	10.95%	10.19%	10.12%
NC	40.03%	39.95%	39.44%	25.78%	25.87%	26.34%	5.20%	5.27%	5.37%	9.17%	9.23%	9.37%
NW	36.94%	36.32%	35.58%	26.05%	25.51%	25.54%	6.93%	6.93%	7.05%	13.93%	14.86%	15.19%
WC	37.09%	36.52%	37.30%	34.25%	34.14%	33.59%	5.78%	6.18%	6.81%	10.65%	9.98%	9.65%

Source: Own calculations based on data from the National Treasury (2007a)

### 3. An Aggregate View of Performance

#### 3.1 Challenges in analysing performance within provincial housing departments – Budget structure and data concerns

Before we proceed to the analysis of budgets and spending performance, it should be mentioned that the current structure of provincial housing budgets has presented certain limitations when conducting budget analyses. Whereas Gauteng and KwaZulu-Natal (KZN) have stand-alone housing departments, the other seven provincial housing departments are amalgamated with Local Government and Traditional Affairs. With the exception of the Free State and North-West provinces, the implication of this is that for those housing departments that are grouped with Local Government/Traditional Affairs, only a programme-level analysis of performance is possible. In this instance one is only able to find details of the main programmes that compose Housing, Local Government and/or Traditional Affairs. This effectively prevents deeper analysis of programmes that are of strategic importance. As a result, it is not possible to assess the following four elements:

- A more meaningful analysis on a sub-programme level of the Housing Development Implementation Programme (housing subsidies), which involves various strategically important sub-programmes, such as the Incremental Housing and Rural Housing Programmes, etc., is not possible. This limits the scope of analysis as one is not able to compare like with like. It also prevents analysis of the drivers of growth within programmes, as well as full inter-provincial comparisons with regard to spending and service delivery.
- In addition, all housing departments have an 'Administration' Programme. The performance of this programme as it relates to housing cannot be determined. This again is a result of the lack of disaggregation among the majority of provinces that have chosen to amalgamate housing with other functions. Consequently, instead of referring to 'housing programmes', this paper makes reference to 'core housing service delivery programmes'. In essence, this means all provincial housing programmes (Housing Planning and Research, Housing Development Implementation and Housing Property Management), with the exception of Administration.
- With regard to the economic classification components, although it is known that historically transfers consume the largest proportion of provincial housing budgets, it is not possible to deduce the exact portions of personnel, transfers and capital that are directly attributed to housing owing to the structure of departments and the manner in which financial data are recorded. The financial data used in this analysis provide an economic classification at a department level, but determining the proportion attributed specifically to housing is not possible.
- Based on the current organisational structure of the departments in which the housing function is found, a proper analysis of all funding sources (specifically the equitable share, own revenue portions of revenue) is not possible.

In addition to the above, there are deficiencies with regard to the current indicators that are available and used to measure performance within the public housing sector. The following six points are noted:

- One of the most important indicators in the housing sector is the **number of houses completed or under construction**. The problem with this indicator is that it does not distinguish between the two, thus providing little information with regard to progress on the actual number of houses completed.
- A good indicator of the extent to which the delivery of housing has contributed or is contributing to the level of asset poverty in South Africa would be the **number of properties transferred to individuals**. The Department of Housing's website, which contains a range of delivery data, currently does not provide this information on a consistent basis. The 2006 PBER (2006: 75) provides these data by province for the period 1994/95 to 2003/04 and then for 2004 and 2005. What the figures show is a decline in the number of properties transferred from 158 894 in 2004 to 95 493 in 2005. The 2007 PBER does not report on this indicator. It is therefore not possible to assess the extent to which the services delivered by the Department of Housing have impacted on asset poverty.
- The publicly available data do not cover the **number of subsidies / houses for vulnerable groups, such as female-headed households, child-headed households and those living with disabilities**. It should be noted that one exception to this is the Free State, which provides information on the number of subsidies provided to women-headed households and disabled persons (Free State Provincial Government, 2007:325).
- A **norm regarding the average construction time** of housing units is currently not available, therefore it is not possible to comment on the efficiency of the building process that results in the number of houses completed.
- The **Expanded Public Works Programme (EPWP)** was established with the aim of increasing employment through the use of labour-intensive methods. The potential for fulfilling this aim is particularly strong within the infrastructure sector, i.e. housing and transport. Data regarding the number of employment opportunities created under the umbrella of EPWP within the housing sector are, however, not readily available. Data of this type should be reported on.
- At present, challenges around specifying the **extent of the housing backlog** persist. – as such it is impossible to gain a clearer picture of actual housing needs, other than estimations based on Census 1996 and Census 2001. *A precise definition of what the housing backlog refers to is of paramount importance.* This would assist in clarifying the problem and would perhaps aid decision-making with regard to an appropriate methodology for measuring the backlog.
- Another aspect that complicates measurement is the positive relationship between the housing backlog and population growth. As a result the backlog may be increasing each year. The formation of new households and/or decreasing household size also drives increases in the size of the backlog. The migration of people between urban and rural areas is an additional aspect requiring consideration – people who have houses in one province but reside in another province as a result of work opportunities distort the true picture of what the housing backlog in a particular province is.

### 3.2 How provincial housing departments divide resources: Programme-specific analysis

Provincial housing budgets are composed of three core service delivery programmes. These programmes are projected to grow by just under 12% over the period from 2006 to 2009 (see Table 3). The Housing Subsidy Programme is projected to show the strongest growth over the period under review, growing at 11.79% in real terms. Although this rate of growth is strong, it does represent a marginal deceleration relative to the growth recorded for the period from 2003 to 2005. Despite the deceleration, the Housing Subsidy Programme is the main driver of growth over the 2006 MTEF period.

The other two programmes in Table 3 show below-average growth over the MTEF period. In fact, the Housing Property Management Programme displays a decline in growth. In the case of the Housing Planning and Research Programme, projected growth over the MTEF reflects a deceleration relative to the level of growth experienced between 2003 and 2005. The Urban Renewal and Human Settlement Programme projects the second-largest growth rate for the period from 2006 to 2009 of 2.45% in real terms. The Housing Property Management Programme projects a real decline in allocations over the MTEF period. The extent of the decline is, however, not as large as it was over the 2003 MTEF period, during which allocations to this programme declined by 27.98% in real terms.

Table 3: Performance within provincial housing budgets by programme

PROVINCIAL HOUSING PROGRAMMES	Real 3-yr Growth Rate – Spending FY 2003 to FY 2006	Adjusted Appropri. 2006/07	Under/ Over-spending 2006	Medium term Estimates			Real 3-yr Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
Housing Planning and Research	4.41%	120 766	-3.65%	124 195	122 600	129 874	2.45%
Housing Development Implementation	12.57%	7 275 603	5.57%	8 114 325	9 174 091	10 163 338	11.79%
Housing Property Management	-27.98%	367 239	6.60%	399 199	388 005	354 107	-1.21%
Total	7.89%	7 763 608	5.47%	8 637 720	9 684 696	10 647 319	11.10%

Source: Own calculations based on data from National Treasury (2007a)

## 4. Budgets and Spending in Provincial Housing Departments

### 4.1 Sources of Housing Revenue: Conditional Grant Funding

As with the majority of provincial departments, the revenue for housing is composed of an equitable share allocation, conditional grant funding and own revenue. Unlike other provincial departments, however, the conditional grant portion of funding forms the largest share of revenue for housing.

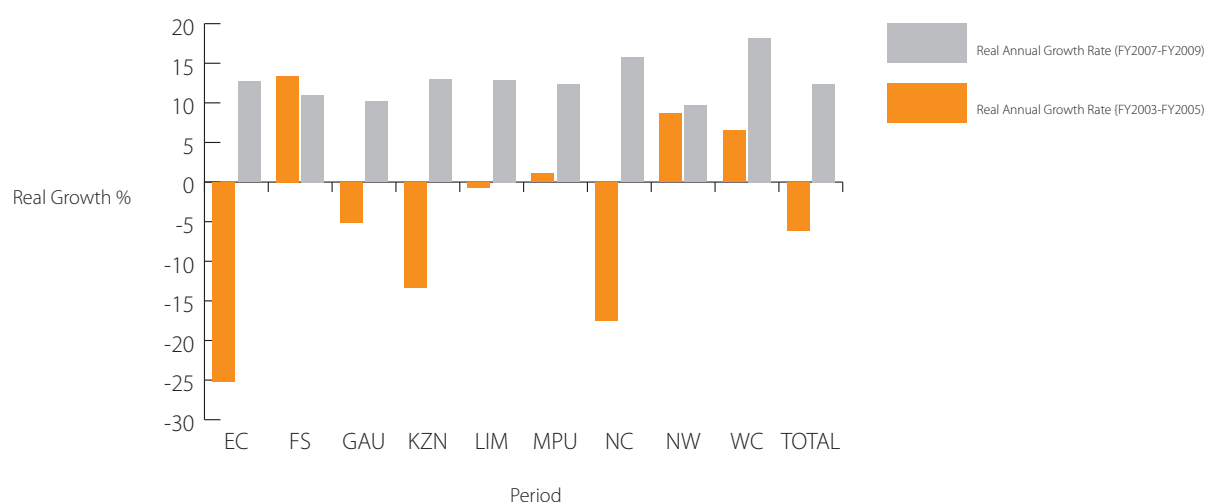
As explained in Section 3.1, the current organisational structure of provincial housing departments inhibits proper analysis of all three funding sources. As a result, this paper provides an analysis only of the conditional grant funding portion of funding.

The National Treasury administers the allocation of one conditional grant to provincial housing departments, namely the Integrated Housing and Human Settlement Development Grant (IHHSDD grant).

This conditional grant represents the integration of two former grants – the Human Settlement Redevelopment Grant and the Housing Subsidy Grant. Figure 1 illustrates the growth rate for the housing conditional grant allocations per province over two periods, i.e. the 2003 MTEF and the 2006 MTEF. This grant is located largely in the Housing Development Implementation Programme.

Given that the IHAHSD conditional grant forms the largest share of revenue received by provincial housing departments, the strong growth (of 12.4% in real terms) exhibited by this grant explains the generally strong growth in aggregate provincial housing budgets projected over the outer years of the 2006 MTEF period and hence the national government's emphasis on the principles of ASGISA.

**Figure 1: Real growth within the Integrated Housing and Human Settlement Development conditional grant funding by province**



Source: Own calculations based on data from National Treasury (2007d)

Table 4 disaggregates the performance of the IHAHSD conditional grant by province. Over the outer years of the 2006 MTEF period, all provinces project strong, positive real growth in the region of 10% per annum. Of the nine provinces, the Western Cape shows the strongest real growth, amounting to 18.2%. The North-West province, on the other hand, has the smallest growth projection over the 2007 MTEF period.

Of note is the high level of underspending across the majority of provinces. Most provinces demonstrate underspends that fall within the Auditor-General's cautionary range (under/overspends that exceed 5% fall into this category). The North-West presents an extreme case of underspending, with over half the total budget allocated to the province remaining unspent. Given that this conditional grant comprises the largest form of revenue received by provincial housing departments, such poor spending performance is cause for concern. The reasons for this level of inefficiency in spending performance require investigation and remedial action must be instituted.

**Table 4: Integrated Housing and Human Settlement Development conditional grant: Performance by province**

Integrated Housing and Human Settlement Conditional Grant	Real Annual Growth Rate (FY2003–FY2005)	Under/ Overspending (FY2003–FY2005)	% of Departmental Budget (FY2006)	Real Annual Growth Rate (FY2007–FY2009)
EC	-25.2%	7.2%	86.4%	12.7%
FS	13.4%	15.1%	82.3%	11.0%
GAU	-5.1%	1.3%	80.9%	10.2%
KZN	-13.3%	(0.1%)	83.8%	13.0%
LIM	-0.7%	12.1%	66.8%	12.9%
MPU	1.1%	8.2%	110.2%	12.3%
NC	-17.5%	2.7%	74.7%	15.7%
NW	8.7%	51.5%	86.6%	9.7%
WC	6.5%	15.5%	85.7%	18.2%
Total	-6.1%	11.2%	83.2%	12.4%

Source: Own calculations based on data from the National Treasury (2007d)

## 4.2 Provincial Housing Budgets by Economic Classification

On the basis of certain non-financial data, it is possible to comment on the personnel shortages experienced by the various provincial departments responsible for housing. Table 5 provides information on the number of positions available across the various provincial housing departments. With the exception of the Eastern Cape, information could be found for all other provinces. It is clear from the figures that a number of provinces are facing severe capacity shortages. Between 2005 and 2006 the majority of provinces experienced an increase in vacancy rates. Over this period, Limpopo and North-West provinces showed the largest loss of skills. This challenge clearly impacts on the ability of provincial housing departments to carry out their mandates. In fact, during 2007, R543 million was reallocated from the Eastern Cape to other provinces as a result of underspending. The Minister of Housing was quoted as saying that the, "...*Eastern Cape did not have the capacity to spend their budget...*" (Sisulu, 2007b).

**Table 5: Number of positions and vacancy rate by province**

Province	2003		2004		2005		2006	
	No of Positions	Vacancy Rate	No. of Positions	Vacancy Rate	No. of Positions	Vacancy Rate	No. of Positions	Vacancy Rate
GT	708	15.68%	953	31.27%	1179	22.56%	1264	39.64%
KZN	1961	40.80%	1426	23.49%	1342	26.60%	1321	30.89%
NC	460	35.65%	472	44.92%	497	48.29%	820	42.56%
FS	575	47.83%	545	42.57%	656	50.46%	681	53.89%
LIM	2884	41.82%	4758	40.69%	1390	16.04%	2449	52.84%
MPU	496	53.83%	1186	77.15%	885	51.30%	765	38.82%
NW	1295	61.78%	863	45.65%	603	29.52%	945	58.41%
WC	368	23.37%	345	22.90%	565	27.26%	798	20.18%

Source: PERSAL database



## 5. Programme-specific Analysis

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### 5.1 Housing Planning and Research

The purpose of the Housing Planning and Research Programme is to “*undertake research and policy formulation, planning, information management...capacity building and institutional management...*” (KZN Provincial Government, 2007: 359). Part of the responsibilities of this programme is to support the capacitation of municipalities with a view to increasing the number of municipalities that are accredited with the housing function.

In terms of growth, allocations to this programme have decelerated from 4.41% over the period from 2003 to 2006, to a projected 2.45% per annum in real terms over the 2006 MTEF period (see Table 6). Aggregate growth within this programme is being driven by the rather excessive trends projected over the MTEF period for Gauteng and particularly for Limpopo province, which are predicting growths of 23.89 and 59.71% respectively.

On aggregate, the programme seems to perform well in terms of spending performance, recording an overspend of 3.65%. Variances across the provinces do, however, raise concern: from a 62.84% underspend in the Western Cape to an excessive overspend of 331.88% in Mpumalanga. Such extreme trends give rise to questions about the accuracy of the data. Aside from data concerns, if these trends are to be believed, they raise concerns about the stability of budgets and spending – an important consideration if plans are to be timeously implemented.

Table 6: Housing Planning and Research Programme: Performance by province

HOUSING PLANNING & RESEARCH	Real 3-yr Growth Rate – Spending FY 2003 – FY 2006	Adjusted Appropri. 2006/07	Under/Over- spending 2006	Medium term Estimates			Real 3-yr Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	48.05%	21 475	10.86%	28 929	28 872	28 685	10.13%
FS	16.17%	11 550	(12.12%)	12 514	12 955	13 137	4.38%
GAU	-0.80%	8 762	16.61%	14 711	14 666	16 662	23.89%
KZN	19.33%	27 991	25.71%	20 535	17 655	22 271	-7.34%
LIM	6.75%	4 538	(87.64%)	18 946	18 591	18 485	59.71%
MPU	-5.75%	6 107	(331.88%)	983	983	978	-45.70%
NC	-27.68%	5 789	(3.37%)	6 855	6 236	6 172	2.16%
NW	31.16%	19 697	5.67%	4 235	5 441	6 554	-30.71%
WC	-25.85%	14 152	62.84%	16 487	17 201	16 930	4.45%
Total	4.41%	120 766	(3.65%)	124 195	122 600	129 874	2.45%

Source: Own calculations based on data from the National Treasury (2007a)

### 5.1.1 Housing Development Implementation (Subsidy Programme)

The main aim of this programme is to “*promote effective and efficient housing delivery. The bulk of the programme allocation is made up of the conditional grant for housing subsidies*” (KZN Provincial Government, 2007: 360). This is the fastest-growing programme on provincial housing budgets. It also consumes the largest proportion of revenue relative to the other core housing service delivery programmes.

Except for KZN, all provinces are demonstrating underspending. This implies inefficient utilisation of this programme budget. Despite poor spending performance, projections for the period from 2006 to 2009 indicate a strong average 11.79% increase. In this instance the strong growth rate is not being driven by large increases in the budgets of a few provinces as all provinces are projecting increases that are at least above 5%.

Given the inefficient levels of spending, it is questionable whether the housing departments will be able to utilise the increased funding effectively. In the light of the strategic importance of this programme, it is recommended that the reasons for inefficient spending should be investigated and corrected so as to ensure that the departments are able to plan and work with stable and predictable budgets.

The Housing Development Implementation Programme receives the bulk of the IHAHSD conditional grant funding. It is from this programme that transfers/subsidies to municipalities flow. In the light of the significant underspending recorded in many provinces, concern is expressed as to how this poor performance is affecting service delivery. If one goes according to the underspending reflected in Table 7, it is clear that large amounts of funding fail to reach the municipalities that are responsible for actual service delivery.

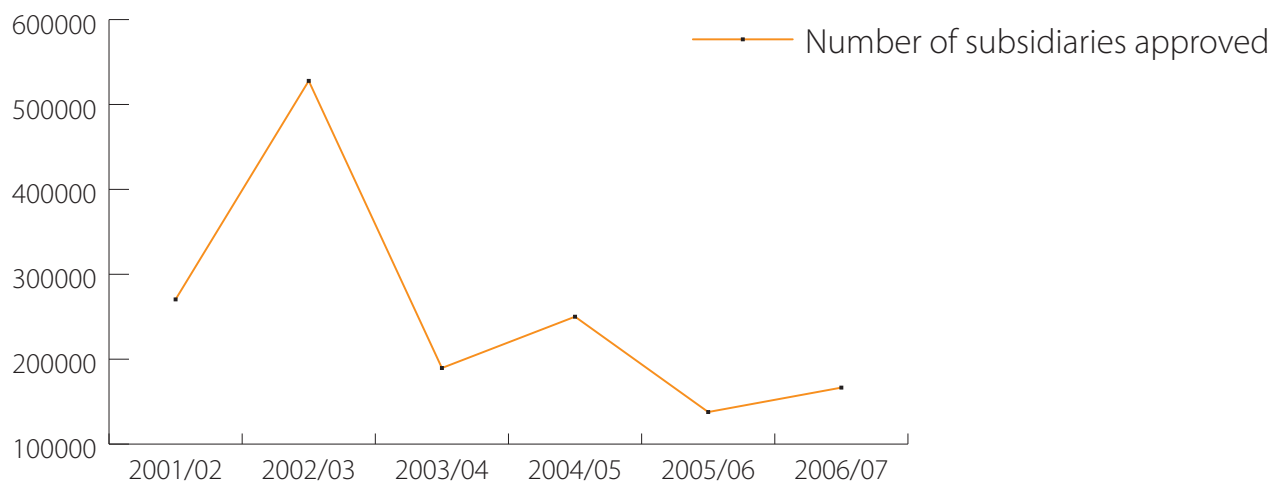
**Table 7: Housing Development Implementation (Subsidy Programme): Performance by province**

HOUSING DEVELOPMENT IMPLEMENTATION	Real 3-yr Growth Rate – Spending FY 2003 to FY 2006	Adjusted Appropri. 2006/07	Under/ Over-spending 2006	Medium-term Estimates			Real 3-yr Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	-13.16%	793 008	15.60%	1 014 780	1 162 299	1 299 914	17.91%
FS	7.64%	578 178	2.57%	653 616	732 784	800 106	11.44%
GAU	17.34%	2 010 785	1.58%	2 268 287	2 495 686	2 693 912	10.24%
KZN	1.76%	985 672	(2.61%)	1 136 456	1 326 081	1 510 101	15.28%
LIM	222.10%	676 360	1.02%	665 996	756 522	837 243	7.37%
MPU	-0.49%	359 014	5.03%	537 248	606 799	668 134	23.00%
NC	-3.16%	113 192	1.67%	142 046	163 332	186 572	18.13%
NW	32.25%	729 915	0.45%	746 270	822 163	888 708	6.78%
WC	31.09%	1 029 479	22.38%	949 627	1 108 425	1 278 648	7.49%
Total	12.57%	7 275 603	5.57%	8 114 325	9 174 091	10 163 338	11.79%

Source: Own calculations based on data from the National Treasury (2007a)

Figure 2 illustrates the total number of subsidies that have been approved by provincial housing departments between 2001 and 2006. It is clear that the number of approved subsidies over this period follows a rather unstable trend, increasing one year only to decline in the year thereafter, as illustrated in Figure 2.

**Figure 2: Number of subsidies approved**



Source: National Treasury, 2007a: 66

Table 8 provides a breakdown of the number of subsidies that were approved between 1994 and 2006 by subsidy instrument. Of the 2.8 million subsidies that were approved, just over 2 million (or 72%) are project-linked. Project-linked subsidies are the dominant subsidy instrument approved across all nine provinces. What this implies is that subsidies are predominantly being used to fund new, developer-built housing projects. Of the nine provinces, Gauteng approved the largest number of subsidies (around 40%) in the period under review, followed by KZN and the Western Cape.

Table 8: Approved subsidies per subsidy instrument, 1994–2006

Province	Project-linked	Individual	Consolidation	Institutional	Rural	Hostel Redevelopment	Emergency Housing	Total
EC	236 427	27 653	9 357	5 710	1 050			280 197
FS	113 340	14 120	8 127	1 300	2 500	516		139 903
GAU	789 608	52 639	111 460	21 968	563	162 282		1 138 520
KZN	257 283	17 468	31 677	25 320	33 643			365 391
LIM	134 957	4 348	3 252		61 606	1 780		205 943
MPU	86 798	16 562	46 156	5 450	1 476	885		157 327
NC	39 089	8 805	384	1 000				49 278
NW	153 417	8 619	7 326	1 154	20 796	1 273	24	192 609
WC	239 756	13 577	53 468	6 998	44	4 866	283	318 992
Total	2 050 675	163 791	271 207	68 900	121 678	171 602	307	2 848,160

Source: National Treasury, 2006: 75

## 5.1.2 Housing Property Management

This programme is responsible for, “...*the efficient management of provincial assets through property management*” (Gauteng Provincial Government, 2007: 270).

Among the core housing programmes, this is the only one that projects a decline in allocations over the 2006 MTEF period. In a sense, the projected MTEF decline can be viewed as a ‘recovery’ relative to the excessive 27.98% decline that characterised the period from 2003 to 2006. In terms of spending performance, provinces have performed poorly, with substantial underspending evident across the majority of provinces (see Table 9).

Table 9: Housing Property Management Programme: Performance by province

HOUSING PROPERTY MANAGEMENT	Real 3-yr Growth Rate – Spending FY 2003 – FY 2006	Adjusted Apprpr. 2006/07	Under/ Over- spending 2006	Medium-term Estimates			Real 3-yr Growth Rate – Budget 2006 MTEF
				2007/08	2008/09	2009/10	
EC	-15.89%	6 327	(17.37%)	6 797	6 756	6 699	1.92%
FS	n/a	6 859	58.07%	8 636	8 613	8 246	6.33%
GAU	0.92%	65 186	5.40%	87 216	83 842	82 727	8.27%
KZN	-11.72%	163 435	6.43%	217 276	210 795	192 125	5.54%
LIM	-68.18%	18 851	9.04%	11 881	12 008	11 939	-14.12%
MPU	n/a	16 949	37.19%	17 532	12 655	12 583	-9.45%
NC	37.52%	4 197	32.00%	4 497	4 537	4 531	2.58%
NW	-44.22%	11 333	27.76%	6 833	11 263	12 757	4.02%
WC	22.98%	74 102	(6.98%)	38 532	37 536	22 500	-32.79%
Total	-27.98%	367 239	6.60%	399 199	388 005	354 107	-1.21%

Source: Own calculations based on data from National Treasury (2007a)

## 6. Summary and Recommendations

The public housing sector in South Africa has undergone massive policy reforms since 1994, the most recent of which was the Breaking New Ground Policy (BNG) in 2005, which underpins a new approach to housing delivery. Two key challenges hinder the ease with which the performance of provincial housing budgets can be assessed. One relates to the lack of uniformity with regard to the level of budgetary data provided across the nine provincial housing departments. This is mainly a result of the varied organisational structure of the departments within which the housing function is located. The second challenge relates to the inadequacy of the indicators currently used to measure service delivery performance within the sector, thus making it relatively difficult in certain instances to assess actual progress to date.

Over the 2006 MTEF period, provincial housing service delivery programmes are projected to show stable and healthy growth in real terms. Of concern, though, is the poor spending performance recorded in the case of strategically important revenue sources and programmes, namely the Integrated Housing and Human Settlement Development Grant and the Housing Development Implementation Programme. Poor performance in this regard, whether resulting from inadequate capacity to spend or from poor planning processes, severely disables service delivery.

As a result, the following three recommendations are made:

1. Provincial housing departments should be required to provide financial data up to sub-programme level, particularly for strategically important programmes such as the Housing Development Implementation (Subsidy) Programme. This will facilitate a more comprehensive assessment of the performance of programmes and departments, as well as enabling variations across the provinces to be gauged.
2. Clear and relevant output indicators that aid the monitoring and evaluation of government's service delivery performance should be developed and reported on. Attention should be focused on the following:
  - the number of houses completed, given separately from those under construction
  - the number of properties transferred
  - the development of norms regarding average construction time
  - the disaggregation of service delivery data by vulnerable group, i.e. women, children, those living with disabilities and the aged.
3. Where underspending is a result of slow provincial disbursement procedures, the potential gains in efficiency that could be achieved by accrediting municipalities with the housing function should be pursued.

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## Local Government Data Collection Reform

Krish Chetty

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## Abstract

The uncoordinated approach to data collection from local governments has resulted in a large problem related to the quality of the data returned. Local government data are incomparable, unreliable and often inaccurate. Furthermore, there is the situation among national stakeholders that a vast number of data requests submitted to municipalities are duplicated. Intervention is required as soon as possible to begin to correct the flaws in the current local government data collection process. Data request duplication must be reduced, if not eliminated completely among the national stakeholders. This report provides a basis for the stakeholders of the Financial and Fiscal Commission to identify where possible duplication exists, and then presents a process that can be used to begin to eliminate the duplication. There is more than just the need to eliminate duplication – long-term solutions need to be introduced that can transform the current data collection process into a system that can produce ‘quality statistics.’ To this end, standardisation of the data collection practices and a process of identifying gaps in the data collection system, which prevent a complete performance assessment of municipalities, must be undertaken. There is also a need to improve the number of personnel dedicated to the task of survey compilation within the municipalities.

Keywords: Local government, data collection, data request duplication

## Acknowledgements

The Local Government Data Collection Forum are thanked for their commitment to rationalisation of the process of local government data collection, in particular, the participants of the LGDC Forum Technical Committee meetings, who regularly provided inputs and commentary on the analysis of the data matrices.

Special thanks to John Baggot and the team from Focus BI who greatly assisted the forum with their work in the search for common keywords across the financial and non-financial matrices. Their pro-bono work greatly assisted the analysis process to move forward at a quicker pace.

Lastly, the inputs of Elsabe Rossouw (National Treasury), Jan Hattingh (National Treasury) and Anneliese Ahrens (Municipal Demarcation Board) have been essential in determining the key problem areas that are addressed in this document.



## Abbreviations

### Stakeholders

ASB	Accounting Standards Board
DBSA	Development Bank of South Africa
DPLG	Department of Provincial and Local Government
DWAF	Department of Water Affairs
MDB	Municipal Demarcation Board
NSS	National Statistics System
NT	National Treasury
SALGA	South African Local Government Association
SARB	South African Reserve Bank
STATS SA	Statistics South Africa

### Other

CFO	Chief Financial Officer
FBS	Free Basic Services
IT	Information Technology
LG	Local Government
LGDC	Local Government Data Collection
MIG	Municipal Infrastructure Grant
MM	Municipal Manager
SABS	South African Bureau of Standards
SASQAF	South African Statistical Quality Assessment Framework

## 1. Background

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The Financial and Fiscal Commission (FFC) has previously made statements on the poor condition and availability of local government data. The FFC Submission for the Division of Revenue 2005/06 (2004) devoted a section to a Review of the Local Government Equitable Sharing System. The submission states in Section 8.3: “In South Africa, comprehensive data on local government is still quite limited. This suggests that any method used in South Africa to determine the costs of local public services will have to be relatively parsimonious in its use of data.”<sup>1</sup> From this statement we understand that data are the limiting factor in establishing a revenue-sharing system targeted at the specific demographics of municipalities. Following these statements, however, the (FFC) has not proposed possible solutions required to alleviate the problems experienced by local government. Therefore we find that there is a need to expand the research in this particular area.

A quick examination of the Local Government Budget and Expenditure Review 2005/06<sup>1</sup> leads one to understand the scope of the problem. By simply considering the Electricity Reticulation Expenditure dataset in Table A1: Eastern Cape Province Capital Budgets, 2005/06<sup>2</sup>, we find that 17 (37.8%) of the 45 Municipalities (Local and District) did not submit data for this spending item (see Annexure 1). An examination of any of the tables in this publication would lead one to a similar conclusion.

The current lack of available data is not actually the source of the problem. It is rather a symptom of a larger problem arising from the local government data collection system as a whole. During 2002, various representatives of municipalities attended workshops held by Statistics South Africa (Stats SA), the South African Reserve Bank (SARB) and the Department of Provincial and Local Government (DPLG), where these representatives raised a set of common issues with National Government that focused on the state of current data collection at the local government sphere. The acceptance of the need to tackle these issues has placed National Government on its path towards the rationalisation of local government data collection.

The issues raised by these local government representatives ultimately resulted in the formation of the current Local Government Data Collection Forum. In 2004, during a meeting of the newly formed forum, an agreement was reached regarding the mandate of the new forum. The participants of this meeting included SARB, DPLG, STATSSA, DWAF, DBSA, FFC and MDB. The mandate that was agreed on touched on the following issues:

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1      *National Treasury (2006a). Local Government Budget and Expenditure Review 2001/02–2007/08*  
2      *National Treasury (2006b). Rationalisation of Local Government Data Collection.*

- Identify the users, collectors and providers of data.
- Identify areas of data duplication amongst stakeholders.
- Identify and recommend ways towards the elimination of duplication of activities on local government data.
- Suggest a process for co-ordinating data collection and utilisation.
- Propose a long-term programme for institutionalising collaboration between stakeholders.

In this vein, the participants to the forum launched a study (spearheaded by National Treasury), which attempted to determine the scope of the problem. The study was entitled ***Rationalization of the Local Government Data Collection Process*** (National Treasury, 2006b) and was completed in 2006. It forms the basis of the work undertaken by the LGDC Forum, in which the FFC has been an active participant.

The Rationalisation of the Local Government Data Collection Process<sup>3</sup> report emphasised the following issues that affect local government: A vast number of questionnaires are submitted to municipalities on a monthly, quarterly and annual basis.

- A large majority of the questionnaires submitted to municipalities are not completed correctly.
- A co-ordinated data collection process is required.
- There is a lack of alignment in the required reporting process.
- Data request templates need to be standardised.
- Very few dedicated personnel are assigned to information collection within local governments.

During 2007, the commission actively participated in the efforts of the LGDC forum. This participation involved identifying possible areas of data request duplication as well as recommending various strategies for data collection rationalisation. The resulting recommendations made by the commission are emphasised in this paper and stem from this analysis that was conducted.

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3      *National Treasury (2006b). Rationalisation of Local Government Data Collection.*

## 2. Problem Statement

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Poor data collection practices at the local government sphere have direct implications for policy planning. Methodologies for revenue sharing formulae are forced not to be data intensive due to the unreliability of the figures. The FFC Submission for the Division of Revenue 2005/06 (2004) clearly states, in reference to the Review of the Local Government Equitable Share Formula that, *“The methodology should not be too data intensive.”*<sup>4</sup>

The root of the data reliability problems stems from the current uncoordinated data collection approach. The National Treasury report of 2006<sup>5</sup> released various findings from their survey of municipalities. It was found the number of forms received annually by municipalities were extremely high. The average responses on forms/questionnaires required to be completed are:

To be completed on a monthly basis – 15 to 30

- To be completed on a quarterly basis – 40 to 45
- To be completed on an annual basis – 80 to 150.

Furthermore, the National Treasury study found that 60% of municipalities stated that they do not complete all forms. The reasons stated related to a lack of adequate resources, the constant changes in data requirements and the lack of co-ordination. Moreover, certain questionnaires were even considered irrelevant, especially where no incentives are provided, or legislation governing municipalities forcing them to comply. In addition, 95% of municipalities explained that they receive questionnaires and forms from provincial government. Some of these questionnaires contain questions that are also asked by national departments.

Based on these findings, it is clear that the current collection process is flawed. There is a definite need to expand on the findings of this previous work compiled by both the FFC and National Treasury to identify where these problems originate from and to find possible solutions that can be used to correct the current flaws in the data collection process.

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<sup>4</sup> Financial and Fiscal Commission (2004). FFC Submission for the Division of Revenue 2005/06.

<sup>5</sup> National Treasury (2006b). Rationalisation of Local Government Data Collection.

## 3. Objectives of the Study

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With the understanding that the current data collection process at the local government sphere is flawed, this paper seeks to address the following issues.

### 3.1 Identifying Processes to Improve Current Data Collection Practices at the LG Level

There is currently no structured process in place across national government that ensures collaboration and co-ordination to deal with the duplicate data collection practices. The critical task that must be carried out is the elimination of data request duplication. The manner of how this process should unfold has yet to be decided on. Therefore potential recommendations from the FFC can provide stakeholders with much-needed guidance on how to move forward in addressing this issue.

Using FFC tools and expertise, the FFC is well placed to identify where possible areas of duplication exist. The tools, such as SQL Server and Business Objects, have enabled the FFC to query and analyse the available data in a simpler and easier fashion. To this end, the National Treasury Study of 2006<sup>6</sup> produced two matrices comprised of all questions in questionnaires that are submitted to municipalities. The data in these matrices have not been analysed and provide a simple method of determining where problem areas lie in the current data collection process.

### 3.2 Identifying Methods to Improve Data Reliability

Currently no standardisation practices are applied to the local government data collection system. Adherence to verification and validation techniques could be greatly improved. Therefore recommendations from the FFC in identifying solutions that can improve the reliability of data collected would be extremely valuable to the FFC's stakeholders. Such recommendations would focus on issues of principle that need to be applied to data collection practices.

## 4. Methodology of the Study

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### 4.1 Analysis of National Treasury 2006 Outputs

The Treasury Report of 2006<sup>7</sup> produced two sets of matrices based on all questionnaires submitted to municipalities. The questions found in these questionnaires were consolidated into the matrices and then classified into similar thematic groups based on the subject matter of the question. These matrices contained approximately 2 400 non-financial questions and 15 400 financial questions. The analysis conducted in this study is based on this data set.

However, following the initial process of compiling these matrices, no additional analysis was made of these databases to determine where possible duplications between stakeholders actually lie. The original variables within the database relate to the following issues:

- Category of questionnaire – e.g. capital budgets, operating budgets and financial statements.
- Requirement – this is the question asked or the information required by the relevant stakeholders. All possible questions/information requirements are listed in this field. This field is used to determine whether possible duplication exists.
- Classification and sub-classification – this breaks down the broad areas of information required and makes the viewing of each matrix more user friendly.
- Institution – the stakeholder/role-player organisation that is collecting the information.
- Frequency – how often the questionnaire is collected or the return submitted.
- Unit of measurement – the unit, whether financial, quantitative or qualitative in nature, in which the data are requested.
- Type of questionnaire – flags whether the question is either financial or non-financial in nature.

The implications and preliminary findings from the matrices were work-shopped regularly in the Local Government Data Collection Forum's technical meetings. During these technical meetings, the participants broke up into smaller teams to systematically examine the questions posed within the financial and non-financial matrices.

Particular issues pertaining to specific questions were added to the matrices and included in the analysis process that followed. A hands-on approach was preferred, as it allowed the forum participants a direct interpretation of issues contained in the questionnaires.

The forum participants, as well as a team lead by John Baggot from Focus BI, conducted a keyword search across the financial and non-financial matrices, with the majority of questionnaires being covered by the Focus BI team. The inclusion of the keywords per question within the matrix provided another dimension for analysis, which will be useful in future analyses.

Following the keyword search, during the technical meetings it was decided that the forum participants would then assist by linking each question posed within the matrices to a Purpose, Legislation and Owner variable. New matrices (for the financial and non-financial areas) were drawn up with these variables included and were distributed to the forum participants. Returns were steadily received from the forum members regarding this new update request.

The data returns received from the forum participants and from the Focus BI group were then loaded into the FFC SQL Database system. Filtration techniques and cross-tab analyses were applied across the various fields available within the data returns. Various scenarios have been identified and the clearest set of results, highlighting possible data duplication, is presented in this report.

Such exercises allowed a greater level of detail to be incorporated into the analysis of the questionnaires and questions. The additional variables that are now available for analysis are:

- Keyword – Keywords have been linked to all specific questions within the matrices. The keyword highlights the key issues that are expressed by the question. During the keyword search, the forum discovered that there are various loaded questions that touch on a series of key issues.
- Purpose of question – All stakeholders in the forum were requested to update the matrix in terms of reasons for each question being posed in the questionnaires. These reasons are logged under the Purpose variable.
- Legislation – Further to the reason for posing a question to the municipality, the forum requested stakeholders to link each question to a specific set of legislature that gives the organisation the mandate to request such information.

- Owner of question – In addition to the above, the forum requested that participants provide the names of the directorates within the respective departments which are responsible for circulating the specific survey.

From the above variables, a key set of variables was identified to concisely present the results for the required analysis of this report. It includes:

- Classification
- Sub-classification (not included in the financial analysis as the analysis of the classification/sub-classification combinations is quite cumbersome for the purposes of this report)
- Institution
- Source (the data collection instrument/questionnaire)
- Frequency
- Question (also referred to as requirement)
- Purpose (has gaps from returns from stakeholders)
- Legislation (has gaps from returns from stakeholders)
- Count of questions

Considering the availability of the other variables such as Category, Keyword, Type of Measurement and Owner, the analysis can be further extended to complete a more intensive examination of the coverage of the database.

#### 4.1.1 Stakeholder comparison by classifications

The selected analysis approach is based on the classifications of questions/ questionnaires. These classifications are used as the basis for comparison between institutions. The purpose of the analysis is to determine where any possible duplication exists between the forum's participants. We then try to determine, per classification, where duplications exist between stakeholders, based on the sharing of questions for each of the classifications.



A sub-classification of questions seemed to present possible duplication scenarios more clearly than the other possible variables, such as Category and Keyword, when institutions are compared. This is due to the classifications being applied to the questions in a uniform manner.

The classifications were also found to be cross-cutting between questionnaires and institutions. On a more detailed inspection of the questions, it was noted the only shortfall of this approach related to DPLG's non-financial returns in the MIG area (88 questions) and FBS area (26 questions). This is because the sub-classification field was not populated when the data were provided, as it was compiled by relevant representatives from the department and not the former consultants involved in this project. This area can be resolved in future tasks conducted by the forum.

### **Analysis Scenario 1**

The initial analysis scenario presents the data in the following form:

*Classification > Sub-classification > Institution > Frequency Distribution of Questions*

The frequency distribution is calculated based on the number of questions per sub-classification and institution. Using the frequency distribution compilation, the percentage sharing of the questions was calculated per sub-classification. This highlighted where a sub-classification shared similar classified questions between institutions. We then select sub-classifications where such a sharing of questions exists. These selected sub-classifications form the basis for uncovering areas where duplication may exist. All sub-classifications where there is no sharing of questions between institutions are ignored for our analysis purposes. Using this approach, we reduce the number of possible questions with duplication from 2 394 to 1 577.

### **Analysis Scenario 2**

Once the matrix has been filtered by these selected sub-classifications, further variables are added to the analysis. By including these variables, the analysis scenario presents the data in the following form:

*Selection of [Classification > Sub-classification] > Institution > Frequency of Questionnaire Return > Data Collection Instrument > Purpose > Legislation*

The above scenario allows the specific questionnaires to be determined that have been raised as areas of possible duplication. These are raised in the context of the institution responsible for the questionnaire; the purpose for which the institution requires the data and the legislation that gives the institution the mandate to ask such a question.

In addition to these variables, the questionnaire is also related to frequency of return, i.e. determining whether the questionnaire sources data on a monthly, quarterly or annual basis.

### **Analysis Scenario 3**

In these selected questionnaires it is likely that not all the questions raised may be duplicated between the relevant stakeholders. This is because not all questions in a questionnaire relate to the selected classifications. It is therefore necessary to determine which specific questions in the questionnaire actually relate to the suspected duplication area. Due to this consideration, the data are then presented in the following manner to highlight the specific questions that relate to the duplication area.

Selection of [Classification > Sub-classification] > Institution > Frequency of Questionnaire Return > Data Collection Instrument > Question (Requirement) > Purpose > Legislation

However, by including the question component in the analysis, the size of the table for consideration increases greatly and should be used as a tool for reference purposes when an in-depth analysis of the questionnaires is required during future activities of the forum.

#### **4.1.2 Question reduction in financial matrix**

A similar process to the non-financial analysis was carried out when analysing the financial matrix. However, the primary concern regarding the financial questions related to the much higher number of financial questions (15 331 questions) present in comparison to the non-financial matrix. In order to make the analysis clearer, it was necessary to investigate methods to reduce the number of repetitive questions that exist regarding the manner such questions are presented in the matrix.

### Reduction Method 1: Remove repeated reporting periods

On initial inspection we found that as the structure of the questions in questionnaires were normalised to present the question as a data requirement, each data item is recorded as a separate record in the matrix, which means that if a single question is asked for a three-year period, there are three records of the same question in the matrix.

This is a repetition of the question which ultimately inflates the required questions that need to be analysed. On further inspection of the financial matrix, a clear trend was found in relation to the following types of questions:

**Table 1: Financial year mapping for question-reduction purposes**

Column 1	Column 2
Current Financial Year	Previous Financial Year
Current Financial Year	Next Financial Year
Current Financial Year	2nd Financial Year following Current Financial Year
Current Financial Year	3rd Financial Year following Current Financial Year

Every question that is raised in relation to column 2 in Table 1 has a matching question that is linked to the current financial year. It was therefore decided to exclude questions that relate to column 2 in Table 1. No clear trends could be established for questions relating to the financial month or financial quarter, therefore these questions remain within the matrix.

### Reduction Method 2: Remove calculated values

It was also noted that values in questionnaires that could be calculated after the returns had been received were included as an additional record within the matrix. This represented another example of unnecessary repetition. Therefore questions that related to total calculations or percentage calculations were excluded.

### Reduction Method 3: Remove repetitive services

It was further noted that questions related to services were highly repetitive. In the grid below we find that the same question is posed for Electricity, Water and Sanitation. This trend persists with various other services such as Potable Water, Fire Protection Services, Sport and Recreation, Refuse Removal, Street Trading, Air Pollution, Electricity and

Gas, Roads Transport and Local Tourism, to list a few.

What adjusted amount has been budgeted for bulk purchases by the Electricity section of the Municipality in the reporting financial year?

What adjusted amount has been budgeted for bulk purchases by the Water section of the Municipality in the reporting financial year?

What adjusted amount has been budgeted for bulk purchases by the Sanitation section of the Municipality in the reporting financial year?

The approach taken to deal with this phenomenon within the matrix was to include a Service column within the new restructured matrix and replace all occurrences of logged services with the phrase 'Service X'. Following this practice, the above three questions that relate to Electricity, Water and Sanitation were replaced with the following question.

What adjusted amount has been budgeted for bulk purchases by the **Service X** section of the Municipality in the reporting financial year?

This edited question is linked to originally mentioned service within the matrix. For purposes of our current analysis, we only consider the new question instead of the original three questions. If analysis is required by specific service, this can be carried out during future tasks of the forum.

### **Results of question reduction**

By following the three above-mentioned practices of filtering the matrix based on questions with repetitive reporting periods, questions based on calculated values and questions with repetitive services, we have reduced the number of questions from 15 306 to 4 881. The greatest impact is on National Treasury with a reduction of 8 787 of their original questions. Treasury is followed by Statistics South Africa as the stakeholders most affected by the absolute change by the reduction process.

Table 2: Results of question reduction

	Original Question Count		Question Count after Reduction		Reduction	
	Count	Per cent	Count	Per cent	Count	Per cent Reduction
DPLG	319	2.1	260	5.3	59	-18.5
DWAF	14	0.1	11	0.2	3	-21.4
FFC	50	0.3	24	0.5	26	-52.0
MDB	318	2.1	32	0.7	286	-89.9
NT	12 041	78.7	3254	66.7	8 787	-73.0
SALGA	76	0.5	38	0.8	38	-50.0
Stats SA	2 487	16.2	1262	25.9	1 225	-49.3
Total	15 306	100	4 881	100	10 425	

### 4.1.3 Review of Treasury Report of 2006

In addition to the analysis of the matrices, the Treasury Report of 2006<sup>8</sup> highlights various key issues affecting municipalities. This report is the primary set of findings regarding reasons for the problems afflicting local governments. These findings are based on a survey of a 20 municipalities across the country. The general findings allude to reasons why certain poor practices exist in the data collection system. The findings further report on the views of municipalities in respect of future rationalisation of the data collection system.

From the analysis of the matrices, we build a quantitative assessment of the scope of the problem that afflicts the municipalities. By including the findings from the Treasury Report of 2006, we can not only determine the scale of the duplication problem, but can further build our knowledge of the type of common issues that harmfully affected the collection process and the context within which these issues are raised.

### 4.2 Review of Supporting Relevant Literature

In addition to the quantitative assessment of the question matrices and the extracted findings from the Treasury Report of 2006, findings from key literature are examined. Documents sourced from the World Bank, DWAF, DPLG, National Treasury, SALGA and Statistics South Africa are considered. Recommendations from these institutions are used as a basis for grounding the consequent recommendations in best practices achieved in prior data collection activities.

### 4.3 Attendance and Documentation of Discussions in the LGDC Forum

Representatives from the FFC have regularly attended all meetings of the LGDC Forum since 2006. Various issues facing local government data collection are vigorously debated in this forum. Attendance of the meetings has been documented as have the key issues that have surfaced during these meetings. Representatives from DWAF, NT, DPLG, SALGA, MDB, SARB, DME, DBSA, Stats SA and the NSS attend these meetings and provide inputs into the manner they (and their respective institutions) believe the Rationalisation of Local Government Data Collection should unfold. The issues expressed in these meetings are also used to establish the findings of this report.

The underlying rationale for the following recommendations has also been regularly debated during these workshops with the national stakeholders. Currently there is support from our stakeholders as there is agreement that an intervention is required at a higher level to institute some form of changes to the current local government data collection processes.

## 5. Options for LG Data Collection Reform

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### 5.1 Complete Elimination of Duplicate Data Requests

#### 5.1.1 Overview of possible duplication

We find from the analysis of the financial and non-financial matrices that a large amount of possible duplication exists. In the financial matrix approximately 35% of all questions in the reduced question set are possibly duplicated. Within the non-financial matrix, possibly 66% of all questions logged are duplicated.

This duplication is based on the analysis using the classification variables as a means for comparison. The classifications that have been identified need to be investigated thoroughly by the respective owners, in order to determine whether duplication actually does exist in these areas. The figures shown below represent the classifications with possible duplication based on the classification's distribution between stakeholders.

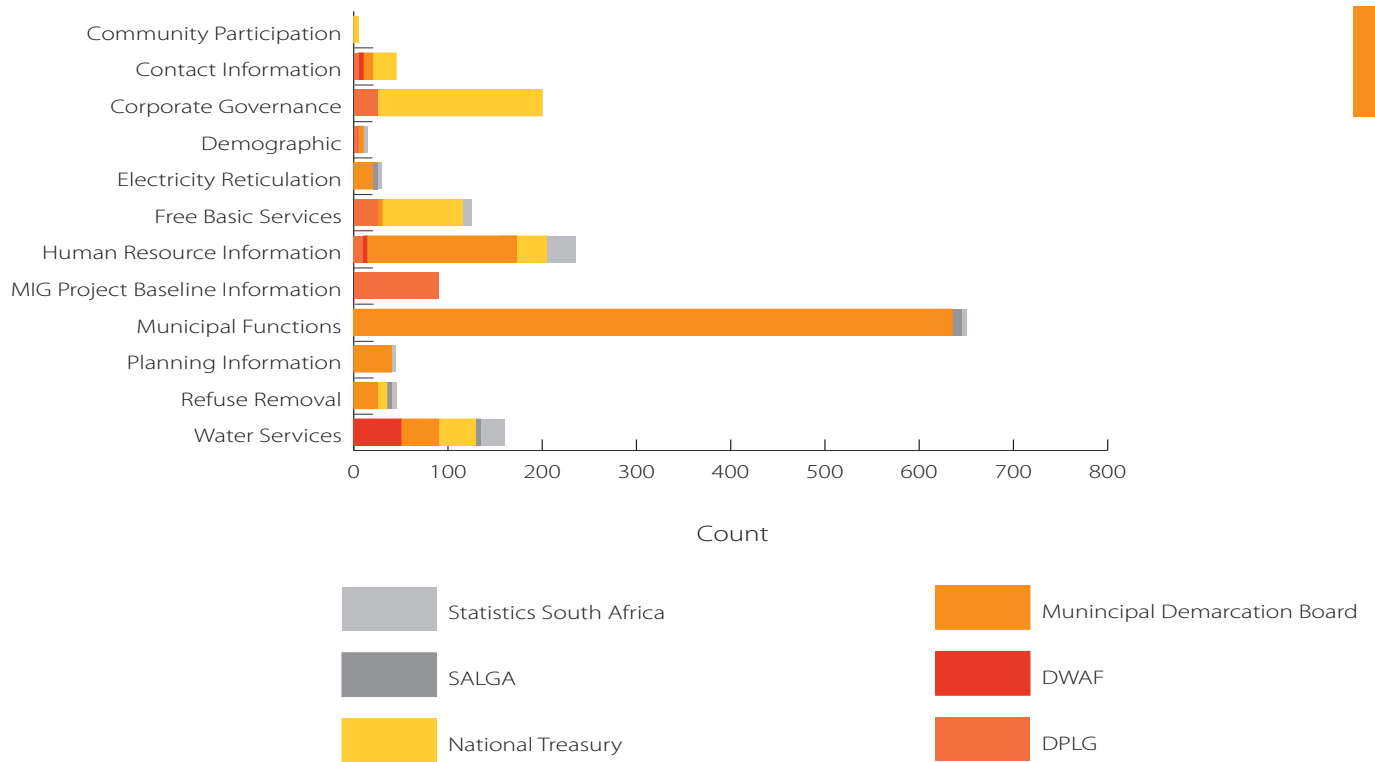


Figure 1: Non-financial classifications distribution per stakeholder

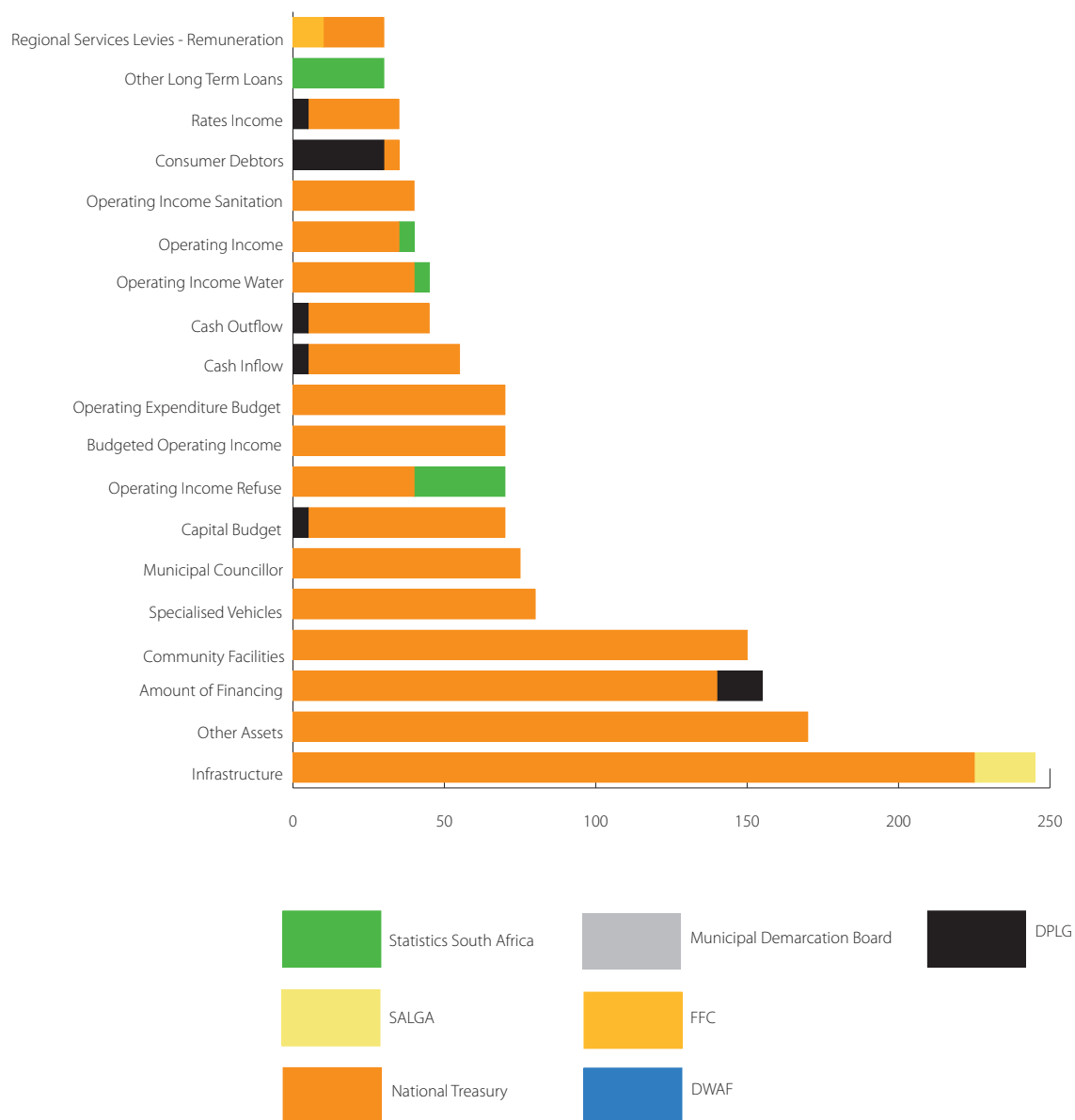


Figure 2:Top 20 financial classifications distribution per stakeholder



### 5.1.2 Non-financial analysis

The analysis of the non-financial matrix began with the examination of 2 394 different questions that ranged between different Categories, Classifications, Frequencies of Distribution and relevant Institutions. By focusing on the Classification and Sub-classification variables we have been able to reduce the focus of the problem area to 1 577 different questions, with the MDB having a majority share of these questions (54.97%).

These questions are based on classification areas (similarly focused questions) that have a sharing of questions between stakeholders. The 817 remaining questions, which are not considered, do not have any sharing of questions between stakeholders, i.e. for a specific sub-classification, only one stakeholder has a 100% ownership of that specific sub-classification area.

#### **Example of corporate governance, budget process**

In Table A2 of Annexure 2, for instance, when we consider the classification 'Corporate Governance' and the sub-classification 'Budget Process' (highlighted in the table with an asterisk - \*) of the 64 questions that relate to this area, we have a 7.8% share of these questions from DPLG and a 92.2% share from National Treasury. This suggests that, in order to eliminate duplication in the area of corporate governance, budget process, National Treasury and DPLG need to reach an agreement regarding a data collection strategy in this area. This approach needs to be followed when considering all the classifications that are mentioned in Table A2.

#### **Classifications with the bulk of the questions**

The classifications that have more than 50 questions each are Corporate Governance (Budget Process and Reporting), Human Resource Information (Capacity, Staff Employed and Staff Vacancies), MIG Project Baseline Information and Municipal Functions (Equipment and Infrastructure, Service Backlog and Service Provision). These are the key classifications that need to be considered during future activities of the forum.

#### **Areas for further analysis**

Two classification areas from DPLG need to be looked at further. The Free Basic Services area and the MIG Project Baseline Information area (highlighted in Table 10.1 with a double asterisk - \*\*) have not been classified with a

sub-classification, as these are new areas added to the non-financial matrix. The inclusion of a sub-classification component to the matrix that relates to other classification areas, in addition to those present in the matrix, will resolve the temporary complication that exists when analysing these DPLG functions.

### **Questionnaires with possible duplication by area of classification**

Table A2 in Annexure 2 highlights which specific questionnaires may request data that is duplicated between stakeholders per classification area. For example, if we consider the classification area of Community Participation, the findings in the table suggests that DPLG and National Treasury may be duplicating data requests within the Municipal Monitoring Questionnaire and Budget Evaluation Checklist (highlighted in the table with an asterisk - \*). Both of these questionnaires are requested annually. In order to resolve the possible duplication that may exist in this area, when an agreement is reached on the possible collection strategy, these two specific questionnaires should be considered in detail.

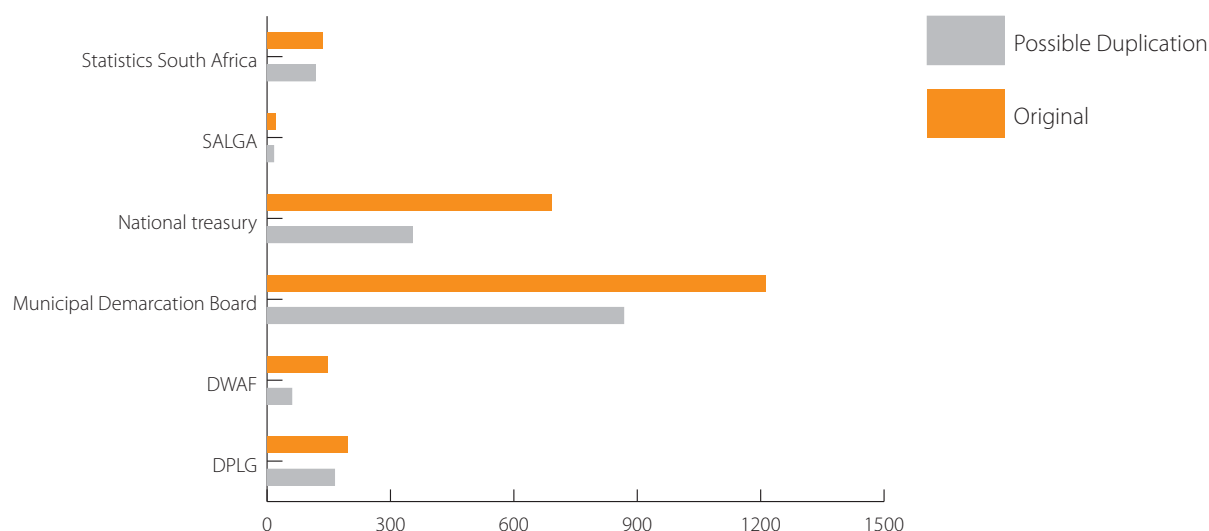
Based on the identified questionnaires, it is further possible to identify the specific questions per questionnaire that have been classified in the possible duplication area.

One of the complications that needs to be considered during future activities is the frequency requirement of the stakeholder. For example, with regard to the Free Basic Services Component (highlighted in the table with a double asterisk - \*\*), DPLG requires its data collection to be completed monthly, whereas the MDB, National Treasury and Stats SA only require the data annually to support their requirements. Therefore, during future rationalisation activities, due consideration should be given to the frequency requirements of the stakeholders for each of the above-mentioned questionnaires.

### **Components for consideration**

In the non-financial analysis, various other components are available within the matrices for consideration. Factors such as Purpose, Legislation for each question have been included in the findings, where updated by the relevant stakeholder from the forum. These components can assist with the future rationalisation process that needs to be conducted in order to eliminate the apparent duplications that exist between stakeholders.

## Overview of non-financial analysis



**Figure 3: Number of non-financial questions per stakeholder with possible duplication**

Following the above-mentioned practices, we reduced the focus area regarding questions with possible duplication from 2 394 to 1 577. For example, when we consider the MDB's question set in the figure above, we need only focus on 867 of the original 1 212 questions that are involved. A similar trend exists with the other stakeholders as highlighted in the analysed non-financial matrix.

### 5.1.3 Financial analysis

#### Results of question reduction

The reduction exercise (mentioned earlier in the methodology section) reduced the count of financial questions from 15 306 to 4 881. This exercise allows us to analyse more closely the classifications of the financial questions without the possible inflation caused by the repetition applied in the creation of the previous financial data requirements matrix.

### **Possible areas of duplication**

The analysis of the financial matrix began with the examination of 4 881 questions. By analysing this information using the classification and various institution variables, we found that the classifications that shared questions between institutions accounted for only 1 709 questions. The majority share of these questions belongs to National Treasury with a 78.3% share, followed by Stats SA with a 10.8%.

### **Major areas of duplication**

Table A4 in Annexure 2 shows that 59 classifications have been found where questions can be shared between the stakeholders. The classifications with over 40 questions each are 1) Amount of Financing (154 questions), Capital Budget (68 questions), Cash Inflow (55 questions), Community Facilities (154 questions), Infrastructure (234 questions), Operating Income Refuse (68 questions), Operating Income Water (46 questions), Other Assets (169 questions) and Specialised Vehicles (87 questions).

Future activities of the forum should include examination of these specified classifications to identify where possible duplication exists with regard to financial questions.

### **Possible questionnaires with duplication by area of classification**

Table A5 in Annexure 2 highlights the specific questionnaires that may request data that are duplicated between stakeholders per classification area. For example, if we consider the classification area of Accounts Receivable, the findings in the table suggest that DPLG and National Treasury may be duplicating data requests in the Municipal Monitoring Questionnaire and the Statement of Financial Position respectively (highlighted in Table A5 with an asterisk - \*). However, DPLG's Municipal Monitoring Questionnaire is a quarterly request, while National Treasury's requirement is annual. In order to resolve the possible duplication that may exist in this area, when an agreement is reached on a possible collection strategy, these two specific questionnaires should be considered in detail. Similar to the non-financial matrix analysis, it is possible to identify the specific questions that fall within a possible duplication classification.

## Components for consideration

Similar to the non-financial analysis, other components are available within the updated matrices for consideration. Factors such as Purpose, Legislation for each question have been included in the findings where updated by the relevant stakeholder from the forum. These components can also be analysed during future activities of the forum.

## Overview of financial analysis

By removing classifications that do not have any sharing of questions between stakeholders, we reduced the focus area regarding questions with possible duplication from 4 881 to 1 709. For example, when we consider National Treasury's question set in Figure 4 below, we need only focus on 1 338 of the original 3 254 questions that are involved. A similar trend exists with the other stakeholders as highlighted in the analysed financial matrix.

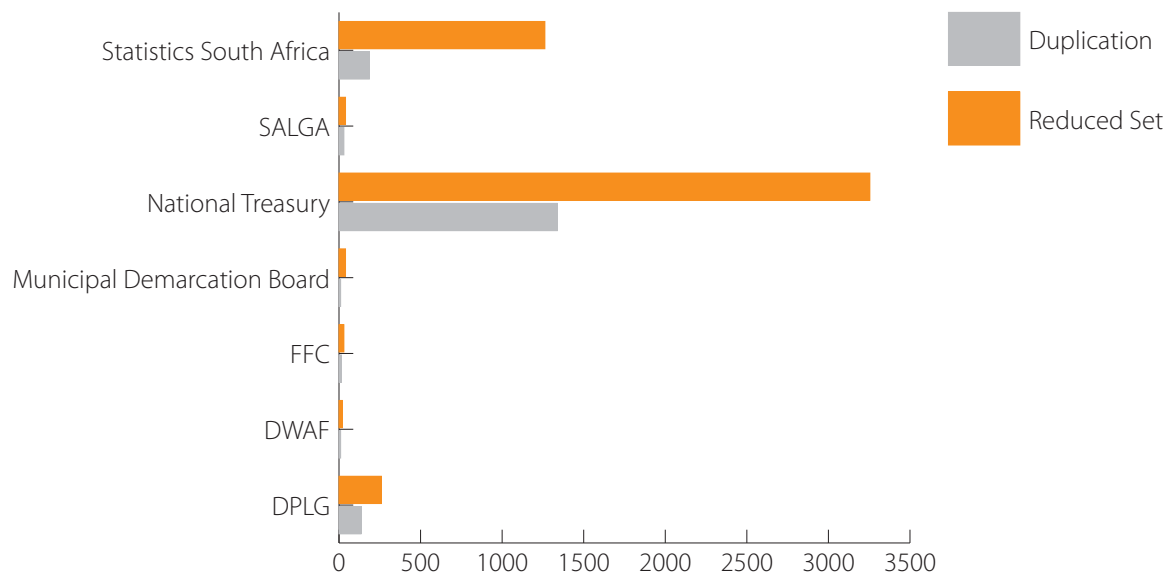


Figure 4: Number of financial questions per stakeholder with possible duplication

### 5.1.4 Way forward for identifying duplication

From the analysis above, the major possible areas of duplication in the financial and non-financial areas have been uncovered based on the Classification variable. In order to determine the exact questions/questionnaires, this analysis must continue. However, to complete the assessment, inputs from the stakeholders concerned will need to be considered.

#### Short term

- The financial and non-financial matrices need to be completely updated in the areas of the Purpose, Owner and Legislation variables. We would also require current additions to the matrix to be revised and made as specific to the question asked as possible. This assists the analysis process when questions are considered on an individual basis.
- The classifications included within the matrices need to be tested for correctness. This was not been done prior to the current analysis. As the classification variable is used as the basis of the analysis, it is crucial that we determine whether the classification and sub-classification variable are applied uniformly between questionnaires and stakeholders.
- We further need to identify all non-financial questions found within the financial matrix and transfer these to the non-financial matrix and vice versa.

#### Medium to long term

- There is a need to extend the current matrices to include new and revised questionnaires not currently included within the current matrix. This is because the current matrices are not a comprehensive picture of the current state of data requests. Some of the forum participants have indicated that they might have questionnaires that did not form part of the initial processes of the 2006 National Treasury Study. The study itself states that it cannot be guaranteed that every questionnaire submitted to local government was captured. As such, the initial analysis does not cover these areas. Therefore we have not linked these questionnaires to possible areas of duplication.
- Once all the questions posed to the municipalities have been captured, we would need to determine whether the current requests currently enable government (as a whole) to monitor the operational performance of the municipalities. Issues on possible data gaps are discussed in Section 5.5.
- Stakeholders should begin to consider the classifications highlighted within the matrices where possible duplication lies. During future rationalisation processes, stakeholders should tackle a single classification at a time, considering the questionnaires and specific questions involved. The keywords that link to these questions can also be utilised to summarise the key issues involved in these questionnaires.

- If it is found that the classifications do not present duplication adequately, the keyword variable should be used as the means of comparison. The keyword search by the participants in the LGDC Forum was conducted on a question-specific basis, and may provide the necessary means to determine the relevant questions.

### 5.1.5 Process for eliminating duplication by example

From the above outputs, we identified classification areas where duplication may exist. Although we have identified broadly where duplication may exist, the actual tough work of eliminating duplication will follow in the discussions and resolutions taken by the specific stakeholders concerned. The resolutions made during this step will guide how the elimination of duplication should proceed.

If we consider the following example, we begin to understand how we can practically resolve the possible duplication issues. The process highlighted in this example can be applied to the other classifications.

**Matrix:** Non-financial

**Classification:** Human resource information

**Sub-classification:** Staff establishment

Within this Classification/Sub-classification combination, we find the following distribution of questions between stakeholders:

Institution	Question Count
National Treasury	8
Municipal Demarcation Board	1
Statistics South Africa	15
Department of Provincial and Local Government	1
Total Number of Questions	25

NT's questions belong to the 'Appendix A' collection instrument, MDB's questions belong to the institution's 'Capacity Assessment' survey, Stats SA's questions are found in the 'Non-Financial Census' and DPLG's questions are found in the 'Municipal Monitoring Questionnaire.'

The specific questions that relate to these questionnaires are the following:

**Table 3: Questions in the Human Resource Information/Staff Establishment classification**

Institution	Question	Frequency
National Treasury	What is the approved establishment number of staff to render the property rates service?	Annual
	What is the approved establishment number of staff to render the electricity service?	Annual
	What is the approved establishment number of staff to render the water service?	Annual
	What is the approved establishment number of staff to render the sewerage / sanitation service?	Annual
	What is the approved establishment number of staff to render the refuse removal service?	Annual
	What is the approved establishment number of staff to render the health service?	Annual
	What is the approved establishment number of staff to render the housing service?	Annual
	What is the approved establishment number of staff to render other services?	Annual
Municipal Demarcation Board	Total number of approved municipal positions at the Municipality?	Annual



## Questions in the Human Resource Information/Staff Establishment classification

Institution	Question	Frequency
Statistics South Africa	Number of managerial positions in total at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the health and ambulance function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the fire protection services function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the solid waste management function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the roads and streets function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the traffic, safety and security function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the sewerage and sanitation function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the parks and recreation function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the general administration function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the rates and general services functions at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the potable water service function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the electricity service function at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in the housing and trading services functions at the Municipality as at 30 June in the reporting financial year?	Annual
	Number of posts for officials in total in other functions at the Municipality as at 30 June in the reporting financial year?	Annual
	Total number of posts for managers and officials at the Municipality as at 30 June in the reporting financial year?	Annual
Department of Provincial and Local Government	How many posts have been identified in the current structure of the Municipality?	Quarterly

From the specific questions listed, it is clear that the stakeholders are interested in the specific number of posts in the municipality when we consider the sub-classification of Staff Establishment.

In summary we find that:

- NT enquires about the number of approved positions for each municipal service relevant to NT.
- MDB is interested in the total number of positions across the municipality.
- Stats SA asks similar questions to NT, but the service set that Stats SA uses differs from NT, whilst sharing some services. Further questioning of Stats SA and Treasury should reveal whether Stats SA and Treasury share definitions for the services mentioned within these listed questions. In addition, Stats SA enquires about managerial positions, which are not asked by the other institutions.
- The DPLG asks a similar question to the MDB, but the difference is that DPLG's requirement is quarterly.

We find that the institutions have different methods of asking a similar question regarding the number of positions:

Institution	Method of requesting the Number of Positions
NT	The approved establishment number of staff
MDB	Number of approved municipal positions
Stats SA	Number of posts for officials in total
DPLG	How many posts have been identified in the current structure of the Municipality?

The difference in the approach of asking a similar question may be subtle, but it raises questions that must be addressed by the stakeholders, viz.:

- Do the stakeholders actually share the same definition of number of positions?
- Is there a difference between an approved position and a post?

- Do NT and Stats SA share definitions of municipal services, despite differences in the actual term used?
- How does the quarterly requirement of DPLG impact on the collection process, when DPLG only requires summary information of the municipality and does not request a lower municipal service level as requested by NT and Stats SA?

Although the example above may be simplistic, resolving these key issues is critical to finding solutions to the data collection problems. These issues lead us to the critical question that must be answered in this process:

Can these four institutions share a data collection instrument?

## 5.2 Establish a National Co-ordinating Body

There is a definite need for a National Coordinating Body (NCB) to be established. There is a current lack of formalisation in the process of data collection rationalisation. The co-ordinating body can provide the formal means of addressing data duplication issues that exist between national stakeholders. The current LGDC Forum provides a foundation for the establishment of this body.

### 5.2.1 Role of the National Co-ordinating Body

In order to complete the elimination of data request duplication and proceed with the rationalisation of data collection, there are various tasks that the coordinating body will need to fulfil. These proposed tasks are in line with the Treasury Report of 2006<sup>9</sup> which proposed similar functions for the body to carry out, viz.:

#### **Elimination of duplicate data collection**

Due to the non-coordinated data collection process, we are faced with a data collection process that possibly duplicates a large number of data requests across the different stakeholders. As mentioned in the previous section, the elimination of duplicated data requests must be a key concern during future activities. The NCB would be tasked with enforcing departments to abide by agreements reached regarding the elimination of duplicated data.

9

*National Treasury (2006b). Rationalisation of Local Government Data Collection.*

### **Rationalisation of data collection activities**

Apart from simply eliminating questions and questionnaires that are duplicated, every questionnaire that is sent to the municipalities must also be evaluated. The management of this process is a critical function that must be supported by the NCB. This is necessary to reduce the current burden on local government.

This evaluation of data requests should be based on the legal mandate, policy mandate and function which demand that the consequent data collection is actually necessary. Many of the LGDC Forum participants have provided inputs regarding the legal mandates of their data collection instruments. We may find with many of the questionnaires within the system that the original motivation for distributing and collecting the data sets may have changed. Therefore the legal mandate, policy mandate and local government function that give rise to the data request are critical for the evaluation process.

### **Ensure stakeholder consensus regarding rationalisation of data collection**

Data collection rationalisation will result in a requirement for the elimination of unnecessary and duplicated data. The process of eliminating these data collection practices from the local government system may be contentious as a result of different needs and viewpoints. A critical task for the NCB would be to ensure that consensus among stakeholders can be formally reached in conflict areas where duplication of data collection is found. Decisions made in the resolution of such conflicts will have to be fair and based on impartial judgments arising from the data requirements of stakeholders.

### **Co-ordinate the data collection process**

Co-ordination of stakeholders' data requirements will be a critical activity in ensuring a successful data collection rationalisation process. Consolidating all stakeholder requirements into a single data collection instrument will be a lengthy process that will have to take into account the nuances in shared data definitions, data requirement frequencies and municipal reporting cycles.

Co-ordinating agreements between stakeholders regarding definitions or terminology will be one of the major focuses of the NCB during its early inception phase. By ensuring that definitions can be shared, the process of eliminating data collection duplication will be easier.

The analysis of the matrices shows that there are various similar data requests that differ as to the frequency requirement of the data set (see the example in Section 6.1.5). Co-ordinating the frequency requirements of stakeholders will be an issue that must be carefully dealt with. Subtle differences in the design of questionnaires have been found between different surveys. Furthermore, we found that there are differences between in-year collections and annual collections from the same stakeholder regarding reporting requirements on similar contents<sup>(3)</sup>. Ultimately inconsistent data requirements lead to difficulties on the part of the municipalities when they try to collate the data for the annual requirement.

We further note that a process will have to be devised that will align data collection to the municipal reporting cycle. There is a belief that current data requirements are not aligned to the different financial year structure of local government.<sup>10</sup> Currently it is understood that the municipal financial year begins in June, and this requirement has to be represented in future data collection practices.

### **Ensure that data collection standards are established and implemented**

Enforcement of data collection standards will ensure the longevity of the rationalisation process. Standards will be devised and agreed to within the NCB. The implementation of these standards will be the vital factor in ensuring the success of the process. The process of transforming current data collection practices to allow the production of 'Official Statistics' as sanctioned by the National Statistics System must be outlined. See Section 6.4 for further information on the process of standardisation.

### **Promote communication among stakeholders and local government**

The NCB must ensure that stakeholders and municipalities alike are aware of the reasons for the rationalisation of the data collection process. Municipalities will need to be formally made aware of the envisaged road map for improving the data collection cycle. Furthermore, municipalities need to be aware of the value of the data that are returned to the national collectors of information. In addition, data collected at the national level should be distributed to all relevant stakeholders and returned to the municipalities from which it is collected. Currently this aspect of the data collection process is lacking<sup>10</sup>.

The NCB will further play a role in ensuring that definitions and standards are understood by the municipalities as well as the national stakeholders.

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<sup>10</sup> *National Treasury (2006 b). Rationalisation of Local Government Data Collection.*

## Manage future data collection rationalisation processes

Future data collection efforts will also have to be managed by the NCB, thus ensuring that the goals of the rationalisation process are maintained during future activities. New proposed questionnaires should be logged with the NCB to determine whether such a questionnaire may duplicate any current activity. The steps that are taken in the established rationalisation process will have to be applied to the proposed questionnaire and tested against the standards agreed to by the participants within the body.

## 5.3 Develop Common Definitions

Disputes may arise during the elimination of duplicated data requests step and are likely to relate to the interpretation of shared terms that are used interchangeably and loosely between stakeholders. Although terms may be shared, the definition of a term may differ. Therefore the stakeholders of local government data must reach agreement on the terms and definitions, where possible, that are sent to municipalities.

If stakeholders are to share a single data collection process, an understanding has to be reached on the meaning and purpose of the data that are collected. Currently we find that items may be similarly phrased and refer to similar matters, but the strict definition is vastly different. In order for the data that are collected to be interoperable, the definitions and components of similar terms must match. Building and managing the relevant metadata store for each collected data set will further improve the ability of users of the data to find, understand and share data.<sup>11</sup>

In order for data to be interoperable between stakeholders and interpreted equally amongst different municipalities, the data must be verifiable against a standard definition and methodology that is used in the collection and collation of the data<sup>12</sup>. By producing data that are comparable, outputs across government can be more closely compared due to the common baseline.

Concerning the problem of definitions, there have been examples of legislative definitions that are not clear. When the legislative requirement is not clear, national stakeholders and the municipalities have varying interpretations of such legislative terms. Municipal Health Services are an example of such a problem.

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11 *Lukhwareni TJ, Madonsela SF, Mokhuwa DE and Podile LM. Statistics South Africa (2005). Management of Metadata in National Statistical Agency. Available at [www.statssa.gov.za/commonwealth/presentations/Paper\\_J\\_Lukhwareni.pdf](http://www.statssa.gov.za/commonwealth/presentations/Paper_J_Lukhwareni.pdf)*

12 *Statistics South Africa (2006 a). Data Quality Policy 001: Policy on Informing Users of Data Quality.; Available at: [www.statssa.gov.za/inside\\_statssa/standardisation/Statistics\\_SA\\_Data\\_Quality\\_Policy.pdf](http://www.statssa.gov.za/inside_statssa/standardisation/Statistics_SA_Data_Quality_Policy.pdf)*

### 5.3.1 Example of conflicting definitions

The Rationalisation of Local Government Data Collection report<sup>13</sup> raised the example of rates and general services between National Treasury and Statistics South Africa. If we begin to unpack the components of these terms, we find that a similar term is used to name the data set, but the component definition of this shared term is different.

**Table 4: Components of rates and general services**

Institution	Components
Statistics South Africa	Ambulance, Fire control, Health (clinics and old-age homes), Roads and Storm Water Drains, Parks and Recreation (libraries, cultural activities, museums, sports administration, community halls, swimming pools, sports grounds, nature reserves, etc.), <u>Sewerage and Cleansing</u> , Traffic and Other services (city engineers, administration, personnel, legal services, city treasurer, etc.).
National Treasury	Ambulance, Fire control, Health (clinics and old age homes), Roads and Storm Water Drains, Parks and Recreation (libraries, cultural activities, museums, sports administration, community halls, swimming pools, sports grounds, nature reserves, etc.), Traffic and Other services (city engineers, administration, personnel, legal services, city treasurer, etc.).

The key difference between National Treasury and Statistics South Africa is that National Treasury has excluded Sewerage and Sanitation from the term. Instead this term is classified as Waste Water Management, which is further grouped under Trading Services. Although the National Treasury and Statistics South Africa terms seem interchangeable, they differ on a major sub-component, and therefore when funding amounts are aggregated, the reported data are not a direct duplication<sup>14</sup>. Other examples of this occurrence can be identified by further analysis of terms found within the financial and non-financial matrices.

### 5.3.2 Example of unclear legislative definitions: Municipal Health Service

Prior to 2004, the definition of the term Municipal Health Services had not been clarified. The Municipal Structures Act<sup>15</sup> (Act No. 117 of 1998, section 84(1)) determined that the district municipality was meant to provide a health service to the community, however due to the lack of a definition of the Municipal Health Service, a legal provision

<sup>13</sup> National Treasury (2006 b). *Rationalisation of Local Government Data Collection*.

<sup>14</sup> National Treasury (2006 b). *Rationalisation of Local Government Data Collection*.

<sup>15</sup> *Municipal Structures Act, Act No. 117 of 1998, section 84(1)*.

was passed in Government Notice No. 1280 on 28 November 2000 for local government to continue with the previous status quo of services that were provided, in order not to disrupt the provision of service delivery<sup>16</sup>.

Such conflicting legislation led to municipalities not being clear on the actual service that was meant to be provided. Therefore if the legislation is unclear, the service that is provided has little chance of being comparable across local government. Consequently, finding a comparable measurement of that particular service's output would be near impossible.

## 5.4 Standardise Data Collection Activities

Data collection needs to be standardised not only in the definitions used in the descriptions of terms included in the data collection instruments, but also in the process in its entirety. Currently where data are collected, there is a clear lack of quality in existing statistical information. This is due to the lack of standards against which to judge the data that are collected. Further to this problem, when non-official data are presented they are not comparable against other data sources<sup>17</sup>.

The standardisation process should attempt to resolve various issues such as the question subjectivity, question ambiguity and questions with multiple components that exist in current questionnaires. It must be understood that the interpretation of a specific question can vary between the different respondents if the request is too generalised.

We currently find questions asked in the following way:

E.g.: Does the Municipality have equipment and infrastructure available for performing the electricity reticulation function at a basic level?

The interpretation of the term 'basic level' will vary between the users of the data. Furthermore, there is no specific definition that explains the basic level of the electricity reticulation function. Such occurrences in current data collection practices need to be resolved.

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16 Haynes, RA (2005). Health Systems Trust. *Monitoring the impact of Municipal Health Services (MHS) policy implementation in South Africa*. Available at: <http://www.hst.org.za/uploads/files/20051019%20-%20MHS%20policy%20impact%20report.pdf>

17 Kahimbaara, A (2002) National Statistics System Division. *How the National Statistics System Impacts on Service Delivery*; Service Delivery Review, Volume 1, Number 3, 2002



### 5.4.1 Produce official statistics

In order to improve the usefulness of the data to the users of the data (including municipalities and national stakeholders), a considerable effort is needed to transform the current data collection practices, which are unstructured and non-standardised, into a carefully managed and structured approach which would enable official statistics to be produced from the resulting data.

According to the National Statistics System Division<sup>18</sup>, the general criteria that must be met for statistics to be deemed official are:

- The data must be used in the public domain.
- The data must be produced by an organ of state which is a partner in the National Statistics System.
- The data that are collected must be sustainable
- The data collection practices have met the quality criteria as defined by the Statistician-General within the South African Statistical Quality Assessment Framework (SASQAF).

In order for the data that are collected to reach the level of 'Quality Statistics', the South African Statistical Quality Assessment Framework (SASQAF) must be applied to the envisaged collection processes. SASQAF should then be applied to all data collection instruments that will be produced from the rationalisation of data collection process.

The criteria specified by SASQAF are the following: relevance, accuracy, timeliness, accessibility, interpretability, coherence, methodological soundness and integrity<sup>19</sup>. These items refer to the manner in which the data collection process is carried out.

<sup>18</sup> Kahimbaara, A. (2007) National Statistics System Division. Implementing government strategies and programmes: The key to improve service delivery to the people of the Free State. Available at: <http://www.fs.gov.za/INFORMATION/Events/2007/Premier/SMSConference/Presentations/Kahimbaara.ppt>

<sup>19</sup> Statistics South Africa (2006 b); "Draft Data Quality Framework 001 – South African Statistical Quality Assessment Framework"; Available at [http://www.statssa.gov.za/inside\\_statssa/standardisation/Statistics\\_SA\\_Statistical\\_Quality\\_Assessment\\_Framework.pdf](http://www.statssa.gov.za/inside_statssa/standardisation/Statistics_SA_Statistical_Quality_Assessment_Framework.pdf)

Table 5: Summary of SASQAF Quality Dimensions Requirements (Statistics South Africa, 2006b)

Relevance	Determined by how closely the data collected meet the needs of the data users.
Accuracy	How closely the data collected measure the defined term it was designed to quantify.
Timeliness	Refers to the delay required to make the data available from time of collection to the time of release.
Accessibility	Refers to the ease with which data users can obtain the data that are collected. The sustainability of the medium for data dissemination is also an important factor when assessing accessibility.
Interpretability	Refers to the ease with which data users are able to comprehend the data that are provided. The clarity of the metadata that accompany the data that are provided will greatly impact the assessment of interpretability.
Coherence	Refers to how closely the data that are sourced are comparable against other data collections in terms of standard concepts, definitions and target population.
Methodological Soundness	Refers to how well international best practices have been followed in the data collection and collation processes.
Integrity	Refers to the manner in which the data collection process was carried out. The key components of this consideration are ethical standards, assurances that data collection was carried out in an impartial manner and the degree of professionalism maintained during the collection process.

For each of the above quality dimensions, Statistics South Africa has devised a series of indicators to measure the quality of the data that are collected. Future data collection activities must strive to promote these quality dimensions and thus improve the quality of the data produced.

### 5.4.2 Establish an appropriate standard-setting body

There is a need for an independent, impartial standard-setting body to be created. Such a body will devise specific standards that data collection practices must adhere to. The standard-setting body will determine how best to apply the SASQAF framework to the data collection requirements determined by the rationalisation of the data collection process. The NCB will then enforce the standards set out by the standard-setting body.

### 5.4.3 Develop a standardised reporting structure

Eighty per cent of Municipalities covered in the *Rationalisation of Local Government Data Collection* report called for a formalised method of reporting that is based on a standardised and static set of forms. It was suggested that such a process would improve co-ordination, lower the burden on municipal staff and indirectly allow municipal officials to concentrate on service delivery<sup>20</sup>.

20 National Treasury (2006b). *Rationalisation of Local Government Data Collection*.

It has been found that changing data requests from stakeholders have placed greater burdens on the municipalities' reporting capability. As data requests change over time, the municipalities are not able to react quickly enough to adjust their information systems in time to support the changing requests.<sup>20</sup> Standardisation of requested data would assist the municipalities' reporting function.

Due consideration must be given to establishing a programme-reporting structure (similar to the provincial system) which can form some links between financial and non-financial data requirements. Currently there is no strategy to produce a system across local government that links funding to outputs and outcomes. Within the proposed rationalisation process, there is an opportunity to implement a program-reporting structure now that meets this need.

## 5.5 Establish a Process to Identify Data Gaps

Following the elimination of data collection duplication, a process for identifying outstanding data requirements of data users needs to be established. Although municipalities are currently faced with a vast mass of data requests, the current data collection practices may not support all requirements for measuring the performance of the local governments' output.

The data collected from the municipalities must be further linked to respective national indicators. We must ask whether the content coverage of all data requests supports collection requirements that are in line with indicators that are being developed by national government.

Furthermore, there are issues of whether the data collected are collected with the same purpose as that intended by the national indicators. Certain operational information that is collected does not have a clear relation to nationally specified strategic indicators.

The current process of analysis used in the elimination of duplication is based on a 'bottom-up' approach whereby we evaluate the data collection process based on questionnaires currently submitted to municipalities. The process that is currently lacking is a 'top-down' approach, whereby data requirements are evaluated from the data user's point of view. A combination of these two approaches would produce a process whereby missing data requirements could be identified.

## 5.5.1 Example of Free Basic Water Policy

### Top-down approach

If we consider the example of the Free Basic Water Policy using the identified indicators (as provided by the Department of Water Affairs and Forestry (DWAF) to the LGDC Forum), we can begin to determine the requirements of the service at the national level. The requirements are represented by national indicators devised by the DWAF. (Note: this is a simplified example used for illustrative purposes. We are not considering whether other stakeholders may have specific Free Basic Water Policy requirements, such as DPLG, etc.).

**Table 6: Free Basic Water Policy indicators**

Outcome: Implementation of Free Basic Water Policy
1. National Regulation and Strategic Governance Functions
Function: Implementation of the free basic water policy 1.1. Number of Municipalities which have adopted a free basic water service policy 1.2. Number of domestic Basic Water Services consumers who still have to pay for the use of only the free basic amount of water
2. District / Regional Planning and Coordination Functions
Function: Implementation of the Free Basic Water Policy 2.1. Municipalities that have adopted a Free Basic Water Service Policy
3. LG Implementation, Operation and Maintenance Functions
Function: Planning information 3.1. Approval status of the DWAF Free Basic Water Service Policy (none, draft, adopted by council). 3.2. Has council has approved and adopted a Free Basic Water Service Policy to deliver less than 6 kl? 3.3. Number of households receiving free basic water. 3.4. Number of domestic Basic Water Services consumers who still have to pay for the use of only the free basic amount of water.  Function: WSA assistance and support in project implementation 3.5 Indicators still to be developed

**Bottom-up approach**

From the non-financial matrix we find the following questions arise in the Classification of Free Basic Services and the Sub-classification of Free Basic Water. For illustrative purposes, let us assume that these are all the questions (from various different surveys) that collect data related to Free Basic Water.

From the list below, we find questions 1 and 18 plus 12 and 16 may be duplicated. Questions 3 and 19 should be investigated further to determine whether the data request is actually interchangeable between the different stakeholders.

Following such an investigation we are unaware of whether the questions below suitably measure the area of Free Basic Water.

**Table 7: Free Basic Water questions**

Sub Classification: Free Basic Water	Duplication
1. Total number of households provided with free basic water by the Municipality in the reporting financial year?	Flag 1
2. What is the monthly unit used for the definition of a free basic water service?	
3. What is the number of free monthly units provided in the free basic water service?	Possible
4. Total number of households provided with free basic water by another municipality in the reporting financial year?	
5. Total number of households provided with free basic water by public entities in the reporting financial year?	
6. Total number of households provided with free basic water by private institutions in the reporting financial year?	
7. Total number of households provided with free basic water within the municipal area in the reporting financial year?	
8. Total number of households provided with free basic water within the municipal area in the next financial year?	
9. Has the Municipality entered into an agreement with another municipality to provide free basic water?	
10. Has the Municipality entered into an agreement with public entities to provide free basic water?	
11. Has the Municipality entered into an agreement with private institutions to provide free basic water?	
12. Is there a free basic services policy within the Municipality for water?	Flag 2
13. Indicate the extent of the free basic service within the Municipality for water.	
14. Indicate the quantity of free basic water actually provided by the Municipality per month.	
15. How many households in the Municipality derive direct benefit from the provision of free basic water?	
16. Does the Municipality have a policy in place relating to free basic water services?	Flag 2
17. If the Municipality has a policy relating to free basic water services, has the policy been implemented?	
18. Number of households within the Municipality with access to free basic water services.	Flag 1
19. Number of units of potable water distributed as a free basic service (in kilolitres) by the Municipality in the reporting financial year.	Possible

### **Merging of top-down with bottom-up approach**

When we attempt to link nationally required indicators to current data collection practices, it is clear from the list below that current practices are flawed. Although the DWAF indicator list has only recently been compiled (in 2007), it is clear that there are data gaps in the requirements from the national level. For illustrative purposes, it is clear that current collection practices must be analysed against actual national indicator requirements to determine whether there are data gaps in the current data collection processes.

Table 8: Free Basic Water Policy mapping of questions against indicators

Requirement	Corresponding Question
1.1 + 1.2: Municipalities which have adopted a free basic water service policy	Q17, Q13 possibly
1.2. Number of domestic Basic Water Services consumers who still have to pay for the use of only the free basic amount of water	None
3.1. Approval status of the DWAF free basic water service policy (none, draft, adopted by council)	None
3.2. Has council has approved and adopted a free basic water service policy to deliver less than 6 kl?	None
3.3. Number of households receiving free basic water	Q1, Q18
3.4. Number of domestic Basic Water Services consumers who still have to pay for the use of only the free basic amount of water.	None

## 5.6 Assign Dedicated Personnel to Data Collection

Results from the *Rationalisation of Local Government Data Collection* report suggest that municipalities have a severe lack of staff dedicated to the task of completing questionnaires<sup>21</sup>. *Furthermore, it is believed that this task should be managed by the Municipal Manager rather than the Chief Financial Officer. The CFO should not be responsible for data concerning non-financial matters.*

*Due to the critical nature of data requests, where possible an effort should be made to improve the capacity of information officers across local government. Such positions should be responsible for completing data requests accurately and timeously. The Municipal Information Officer should further ensure that questionnaires reach their intended recipients. Such an initiative could increase the quality of the data received from the municipalities.*

21 National Treasury (2006 b). *Rationalisation of Local Government Data Collection*.

## 6. Summary of Recommendations

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The goals of the report are to identify processes for improving the data collection system and to make recommendations that can be applied to the data collection process to improve the quality of the data produced by the system. In this light the recommendations that follow focus on short-term processes that need to be solved for reducing data collection duplication, as well as on long term-processes that can transform our current processes so that ultimately 'Quality Statistics' as classified by Statistics South Africa can be produced.

We have two recommendations that focus on short-term issues. First, the setting up of a National Co-ordinating Body, and second, setting up of processes that will lead to the elimination of data collection duplication. These are the two foremost requirements that need to be implemented as soon as possible. A National Co-ordinating Body will provide the formal environment for stakeholders to meet and reach consensus on the manner of rationalising the current data collection process.

Regarding the reduction of data collection duplication, this report presents classification areas where possible duplication may occur in both financial and non-financial matters. An example was given that suggests a possible process that can be entered into by relevant stakeholders who share collection areas with other institutions. Although an analysis has been done of where this duplication may lie, results can only be obtained if stakeholders are able to reach consensus on how data from questionnaires can be collected in future and how they can then work in a co-ordinated manner. Sharing of collected data will be the cornerstone of successfully eliminating data collection duplication.

In the medium term, matters relating to common data definitions need to be resolved. Sharing of data between stakeholders will only be possible if the data collected are based on a common definition agreed to by all relevant stakeholders. Once the definitions are chosen, municipalities will have to be informed of the understood definition. Improving communication between the national sphere and the local sphere is an important factor in improving the quality of the received data.

In the long term, the identification of current gaps in the data collection system as well as the entire standardisation of the LG data collection process is of paramount importance. A study will have to be undertaken to determine whether current data collection practices are in line with nationally determined outcome and output indicators. Furthermore, a complete assessment of all nationally required indicators has not been completed; therefore it has



not been determined which data are actually required for monitoring the performance of municipalities. Once a set of nationally required indicators has been established, a comparison of the indicators against the collected data must be conducted to determine where the gaps in the system currently are.

Standardisation of the entire process of data collection will transform the present process from its current unstructured, uncoordinated state into a structured, manageable process that will ultimately produce official statistics for the consumption of the users of data. The current lack of standards in the data collection process prevents data of similar subject matter from being comparable. Introducing concepts such as relevance, accessibility, accuracy, interpretability, coherence, methodological soundness and integrity as outlined in the South African Statistical Quality Assessment Framework will provide the necessary robustness required for producing a more reliable information base from municipalities.

Solving problems at the national sphere is not the only solution required in the process of improving data reliability. The returns from municipalities are of great concern. The National Treasury report of 2006 clearly states that there is a lack of capacity where data collation is concerned. Surveys are completed by unskilled staff and the resultant quality of the data received is questionable. Increasing the number of skilled staff in municipalities who are responsible for data returns (in the long term) will be necessary to improve the quality of the data returned to the national stakeholders.

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## Annexure 1: Extract from Local Government Budget and Expenditure Review 2001/02–2007/08<sup>22</sup>

Table A1: Extract from Local Government Budget and Expenditure Review 2001/02–2007/08

Eastern Cape Province capital budgets, 2005/06 (R'000)			
Category	Code	Municipality	Expenditure
			Electricity Reticulation
A	EC000	Nelson Mandela	96,355
B	EC101	Camdeboo	3,638
B	EC102	Blue Crane Route	1,380
B	EC103	Ikwezi	78
B	EC104	Makana	1,595
B	EC105	Ndlambe	1,100
B	EC106	Sunday's River Valley	1,000
B	EC107	Baviaans	170
B	EC108	Kouga	200
B	EC109	Koukamma	NO DATA
C	DC10	Cacadu	NO DATA
Total: Cacadu			9,161
B	EC121	Mbhashe	NO DATA
B	EC122	Mnquma	1,340
B	EC123	Great Kei	NO DATA
B	EC124	Amahlathi	433
B	EC125	Buffalo City	16,334
B	EC126	Ngqushwa	NO DATA
B	EC127	Nkonkobe	1,000
B	EC128	Nxuba	336
C	DC12	Amatole	NO DATA
Total: Amatole			19,443
B	EC131	Inxuba Yethemba	NO DATA
B	EC132	Tsolwana	NO DATA
B	EC133	Inkwanca	2,900
B	EC134	Lukanji	7,700
B	EC135	Intsika Yethu	-
B	EC136	Emalahleni (Ec)	2,242
B	EC137	Engcobo	NO DATA

## Extract from Local Government Budget and Expenditure Review 2001/02–2007/08

Eastern Cape Province capital budgets, 2005/06 (R'000)			
B	EC138	Sakhisizwe	838
C	DC13	Chris Hani	NO DATA
Total: Chris Hani			13,680
B	EC141	Elundini	2
B	EC142	Senqu	500
B	EC143	Maletswai	1,794
B	EC144	Gariep	1,550
C	DC14	Ukhahlamba	NO DATA
Total: Ukhahlamba			3,846
B	EC151	Mbizana	100
B	EC152	Ntabankulu	NO DATA
B	EC153	Qaukeni	NO DATA
B	EC154	Port St Johns	NO DATA
B	EC155	Nyandeni	NO DATA
B	EC156	Mhlontlo	NO DATA
B	EC157	King Sabata Dalindyebo	15,619
C	DC15	O.R. Tambo	NO DATA
Total: O.R Tambo			15,719
B	EC05b1	Umzimkhulu	NO DATA
B	EC05b2	Umzimvubu	NO DATA
C	DC44	Alfred Nzo	NO DATA
Total: Alfred Nzo			NO DATA
Total: Eastern Cape			158,204
*Blanks: No data submitted.			
Source: National Treasury local government database			

## Annexure 2: Analysis of Financial and Non-financial Matrices

Table A2: Distribution of non-financial classifications between stakeholders

		DPLG	DWAF	Municipal Demarcation Board	National Treasury	SALGA	Statistics South Africa	Total Questions
Community Participation	Budget Process	20	0	0	80	0	0	5
Contact Information	Chief Financial Officer	0.0	0.0	16.7	83.3	0.0	0	6
	Mayor	0.0	0.0	16.7	83.3	0.0	0	6
	Municipal Detail	15.0	0.0	45.0	40.0	0.0	0	20
	Municipal Manager	0.0	0.0	20.0	80.0	0.0	0	5
	Technical Services	0.0	80.0	20.0	0.0	0.0	0	5
Corporate Governance	Audit	72.7	0.0	0.0	27.3	0.0	0	11
	Budget Process *	7.8	0.0	0.0	92.2	0.0	0	64
	Financial Administration	53.3	0.0	0.0	46.7	0.0	0	15
	Municipal Partnerships	20.0	0.0	0.0	80.0	0.0	0	10
	Policies and Procedures	0.0	6.3	0.0	93.8	0.0	0	16
	Reporting	0.0	1.3	0.0	98.7	0.0	0	76
Demographic	Households	33.3	0.0	66.7	0.0	0.0	0	3
	Indigent Households	25.0	0.0	0.0	0.0	0.0	75	8
	Population	33.3	0.0	66.7	0.0	0.0	0	3
Electricity Reticulation	Equipment and Infrastructure	0.0	0.0	60.0	0.0	0.0	40.0	5
	Service Backlog	0.0	0.0	85.7	0.0	14.3	0.0	7
	Service Level	16.7	0.0	66.7	0.0	0.0	16.7	6
	Service Provision	0.0	0.0	56.3	0.0	12.5	31.3	16
Free Basic Services*	Free Basic Electricity	0.0	0.0	14.3	71.4	0.0	14.3	28
	Free Basic Refuse	0.0	0.0	0.0	86.4	0.0	13.6	22
	Free Basic Sanitation	0.0	0.0	0.0	86.4	0.0	13.6	22
	Free Basic Water	0.0	0.0	14.3	71.4	0.0	14.3	28
	Undefined	100.0	0.0	0.0	0.0	0.0	0.0	26

## Distribution of non-financial classifications between stakeholders

		DPLG	DWAF	Municipal Demarcation Board	National Treasury	SALGA	Statistics South Africa	Total Questions
Human Resource Information	Budgeted Staff	0.0	0.0	0.0	100.0	0.0	0.0	8
	Capacity	23.6	3.6	69.1	3.6	0.0	0.0	55
	Chief Financial Officer	0.0	0.0	77.8	22.2	0.0	0.0	9
	Municipal Manager	0.0	0.0	77.8	22.2	0.0	0.0	9
	Staff Employed	0.9	0.9	70.6	0.0	0.0	27.5	109
	Staff Establishment	4.0	0.0	4.0	32.0	0.0	60.0	25
	Staff Vacancies	0.0	0.0	73.6	0.0	0.0	26.4	53
MIG Project Baseline Information**	Undefined	100.0	0.0	0.0	0.0	0.0	0.0	88
Municipal Functions	Equipment and Infrastructure	0.0	0.0	99.0	0.0	0.0	1.0	104
	Service Backlog	0.0	0.0	98.8	0.0	1.2	0.0	172
	Service Provision	0.0	0.0	98.2	0.0	1.1	0.7	277
Planning Information	Integrated Development Plan	4.9	0.0	90.2	2.4	0.0	2.4	41
Refuse Removal	Equipment and Infrastructure	0.0	0.0	75.0	0.0	0.0	25.0	4
	Service Backlog	0.0	0.0	85.7	0.0	14.3	0.0	7
	Service Level	0.0	0.0	17.4	78.3	0.0	4.3	23
	Service Provision	0.0	0.0	71.4	0.0	14.3	14.3	14
Water Services	Billing	0.0	75.0	0.0	25.0	0.0	0.0	4
	Equipment and Infrastructure	0.0	50.0	37.5	0.0	0.0	12.5	16
	Sanitation Service Level	0.0	10.7	0.0	78.6	3.6	7.1	28
	Water Service Level	3.3	16.7	0.0	60.0	3.3	16.7	30
	Water Service Quality	0.0	92.0	0.0	0.0	0.0	8.0	25
	Water Service Backlogs	0.0	0.0	85.7	0.0	14.3	0.0	14
	Water Service Provision	0.0	18.4	57.1	0.0	2.0	22.4	49
		10.40	3.80	54.97	22.38	1.02	7.41	1577

Table A3:Non-financial questionnaires per classification with possible duplication

Classification	Institution	Questionnaire	Frequency
Community Participation*	DPLG	Municipal Monitoring Questionnaire	Annual
	National Treasury	Budget Evaluation Checklist	Annual
Contact Information	DPLG	Municipal Monitoring Questionnaire	Annual
	DWAF	Water Service Quality Assessment	Monthly
	Municipal Demarcation Board	Capacity Assessment	Annual
	National Treasury	Appendix A	Annual
Corporate Governance	DPLG	Municipal Monitoring Questionnaire	Quarterly
	DWAF	Water Service Quality Assessment	Annual
	National Treasury	Budget Evaluation Checklist	Annual
		Finance Management Grant Report	Annual
		MFMA Implementation & Monitoring	Quarterly
Demographic	DPLG	Municipal Monitoring Questionnaire	Annual
	Municipal Demarcation Board	Capacity Assessment	Annual
	Statistics South Africa	Non-Financial Census	Annual
Electricity Reticulation	DPLG	Municipal Monitoring Questionnaire	Annual
	Municipal Demarcation Board	Capacity Assessment	Annual
	SALGA	Service Delivery Assessment	Annual
	Statistics South Africa	Non-Financial Census	Annual
Free Basic Services**	DPLG	Undefined	Monthly
	Municipal Demarcation Board	Capacity Assessment	Annual
	National Treasury	Appendix A	Annual
	Statistics South Africa	Non-Financial Census	Annual
Human Resource Information	DPLG	Municipal Monitoring Questionnaire	Annual
	DWAF	Water Service Quality Assessment	Annual
		WSA Regulatory Performance Measure	Annual
	Municipal Demarcation Board	Capacity Assessment	Annual
	National Treasury	Appendix A	Annual
		Finance Management Grant Report	Monthly
MIG Project Baseline Information	Statistics South Africa	Non-Financial Census	Annual
	DPLG	Microsoft Excel Database / MIG MIS	Monthly
Municipal Functions	Municipal Demarcation Board	Capacity Assessment	Annual
	SALGA	Service Delivery Assessment	Annual
	Statistics South Africa	Non-Financial Census	Annual
Planning Information	DPLG	Municipal Monitoring Questionnaire	Annual
	Municipal Demarcation Board	Capacity Assessment	Annual
	National Treasury	Budget Evaluation Checklist	Annual
	Statistics South Africa	Non-Financial Census	Annual
Refuse Removal	Municipal Demarcation Board	Capacity Assessment	Annual
	National Treasury	Appendix A	Annual
	SALGA	Service Delivery Assessment	Annual
	Statistics South Africa	Non-Financial Census	Annual
Water Services	DPLG	Municipal Monitoring Questionnaire	Annual
	DWAF	Benchmark Indicators	Annual
		Water Service Quality Assessment	Annual
		WSA Regulatory Performance Measure	Annual
	Municipal Demarcation Board	Capacity Assessment	Annual
	National Treasury	Appendix A	Annual
	SALGA	Service Delivery Assessment	Annual
	Statistics South Africa	Non-Financial Census	Annual



Table A4: Distribution of financial classifications between stakeholders

	DPLG	DWAF	FFC	Municipal Demarcation Board	National Treasury	SALGA	Statistics South Africa	Count
Accounts Receivable	75.0	0.0	0.0	0.0	25.0	0.0	0.0	4
Amount of Financing	0.0	0.0	0.0	0.0	93.5	0.0	6.5	154
Auditor General	27.3	0.0	0.0	0.0	72.7	0.0	0.0	11
Bulk Electricity	27.3	0.0	0.0	0.0	72.7	0.0	0.0	11
Bulk Purchases	0.0	0.0	0.0	0.0	90.5	9.5	0.0	21
Bulk Water	27.3	0.0	0.0	0.0	72.7	0.0	0.0	11
Capital Budget	4.4	0.0	0.0	0.0	94.1	0.0	1.5	68
Capital Expenditure	33.3	0.0	0.0	0.0	11.1	0.0	55.6	9
Cash Inflow	9.1	0.0	0.0	0.0	90.9	0.0	0.0	55
Cash on Hand / in Bank	63.6	0.0	0.0	0.0	9.1	0.0	27.3	11
Cash Outflow	13.0	0.0	0.0	0.0	87.0	0.0	0.0	46
Community Facilities	0.0	0.0	0.0	0.0	99.4	0.6	0.0	154
Consumer Debtors	76.3	0.0	0.0	0.0	21.1	0.0	2.6	38
Consumer Deposits	66.7	0.0	0.0	0.0	33.3	0.0	0.0	3
Creditors' Balance	13.6	0.0	0.0	0.0	81.8	0.0	4.5	22
Debtors' Accounts	75.0	0.0	0.0	0.0	25.0	0.0	0.0	4
Deficit of Income from Expenditure	7.1	0.0	0.0	0.0	0.0	0.0	92.9	14
Electricity Service Income	21.1	0.0	0.0	5.3	52.6	5.3	15.8	19
Expenditure	0.0	0.0	0.0	0.0	50.0	50.0	0.0	4
Expenditure on Fixed Assets	13.3	0.0	0.0	0.0	0.0	0.0	86.7	15
External Interest	0.0	0.0	0.0	0.0	4.5	0.0	95.5	22
Grants and Subsidies	0.0	0.0	0.0	0.0	96.0	4.0	0.0	25
Infrastructure	0.0	0.0	0.0	0.0	95.3	4.7	0.0	234
Interest and Redemption Payments	50.0	0.0	0.0	0.0	0.0	50.0	0.0	2
Loan Repayments	11.1	0.0	0.0	0.0	88.9	0.0	0.0	9
Long-Term Deposits	0.0	0.0	0.0	0.0	18.2	0.0	81.8	11
Long-Term Liabilities	75.0	0.0	0.0	0.0	25.0	0.0	0.0	4
Operating Budget	7.1	0.0	0.0	0.0	78.6	14.3	0.0	14
Operating Expenditure	50.0	0.0	0.0	0.0	50.0	0.0	0.0	4
Operating Income	0.0	0.0	0.0	0.0	80.0	0.0	20.0	45
Operating Income - Water	0.0	0.0	0.0	0.0	0.0	0.0	100.0	4
Operating Income - Refuse	0.0	0.0	0.0	0.0	61.8	0.0	38.2	68
Operating Income - Water	0.0	0.0	0.0	0.0	89.1	0.0	10.9	46
Other Assets	0.0	0.0	0.0	0.0	99.4	0.6	0.0	169
Other Creditors	25.0	0.0	0.0	0.0	66.7	0.0	8.3	12
Other Debtors	0.0	0.0	0.0	0.0	90.0	0.0	10.0	20

## Distribution of financial classifications between stakeholders

	DPLG	DWAF	FFC	Municipal Demarcation Board	National Treasury	SALGA	Statistics South Africa	Count
Other Income	16.7	0.0	0.0	0.0	5.6	0.0	77.8	18
Other Investments	33.3	0.0	0.0	0.0	0.0	0.0	66.7	3
Overdraft Facility	60.0	0.0	0.0	0.0	10.0	0.0	30.0	10
PAYE Deductions	27.3	0.0	0.0	0.0	72.7	0.0	0.0	11
Pension / Retirement Deductions	27.3	0.0	0.0	0.0	72.7	0.0	0.0	11
Provision for Working Capital	0.0	0.0	0.0	0.0	50.0	50.0	0.0	2
Rates Income	9.1	0.0	0.0	3.0	84.8	3.0	0.0	33
Refuse Removal Service	33.3	0.0	0.0	11.1	44.4	11.1	0.0	9
Regional Levies	50.0	0.0	0.0	0.0	50.0	0.0	0.0	2
Regional Services Levies - Remuneration	0.0	0.0	37.9	0.0	62.1	0.0	0.0	29
Regional Services Levies - Turnover	0.0	0.0	5.3	0.0	94.7	0.0	0.0	19
Repairs and Maintenance	12.0	0.0	0.0	0.0	72.0	4.0	12.0	25
Retained Surplus	25.0	0.0	0.0	0.0	0.0	0.0	75.0	4
Sanitation Service Income	30.0	0.0	0.0	10.0	40.0	0.0	20.0	10
Short-Term Deposits	0.0	0.0	0.0	0.0	18.2	0.0	81.8	11
Short-Term Portion of Long-Term Liabilities	50.0	0.0	0.0	0.0	50.0	0.0	0.0	2
Specialised Vehicles	0.0	0.0	0.0	0.0	98.9	1.1	0.0	87
Stock / Inventory	33.3	0.0	0.0	0.0	16.7	0.0	50.0	6
Subsidies	40.0	0.0	0.0	0.0	0.0	0.0	60.0	5
Tariff Stabilisation and Other Reserve Funds	0.0	0.0	0.0	0.0	6.7	0.0	93.3	15
Trust Funds	40.0	0.0	0.0	0.0	60.0	0.0	0.0	5
VAT (Output less Input)	27.3	0.0	0.0	0.0	72.7	0.0	0.0	11
Water Service Income	22.2	27.8	0.0	5.6	22.2	5.6	16.7	18
	7.90	0.29	0.70	0.29	78.29	1.64	10.88	1709

Table A5: Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Accounts Receivable*	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually
Amount of Financing	National Treasury	Appendix A	Annually
		Capital Acquisition & Sources of Finance	Annually
			Monthly
	SALGA	Local Government Table A	Annually
	Statistics South Africa	Capital Expenditure Survey	Annually
		Financial Census	Annually
Auditor-General	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Bulk Electricity	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Bulk Purchases	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
	SALGA	Local Government Table B	Annually
Bulk Water	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Capital Budget	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Capital Acquisition & Sources of Finance	Annually
		Strategic Plan / IDP to Budget	Annually
	SALGA	Local Government Table A	Annually
	Statistics South Africa	Non-Financial Census	Annually

## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Capital Expenditure	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Capital Acquisition & Sources of Finance	Annually
		Restructuring Grant Report	Monthly
		Strategic Plan / IDP to Budget	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Cash Inflow	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Cash Flow Statement Actuals / Forecast	Monthly
		Cash Flow Statement Budget	Annually
Cash on Hand / in Bank	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Cash Outflow	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Cash Flow Statement Actuals / Forecast	Monthly
		Cash Flow Statement Budget	Annually
Community Facilities	National Treasury	Appendix A	Annually
		Capital Acquisition & Sources of Finance	Annually
			Monthly
	SALGA	Local Government Table A	Annually
Consumer Debtors	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Appendix A	Annually
		Restructuring Grant Report	Monthly
	Statistics South Africa	Financial Census	Annually
Consumer Deposits	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually

## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Creditors' Balance	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
		Appendix A	Annually
		Restructuring Grant Report	Annually
		Statement of Financial Position	Annually
	Statistics South Africa	Financial Census	Annually
Debtors' Accounts	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Appendix A	Annually
Deficit of Income from Expenditure	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Electricity Service Income	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
	SALGA	Local Government Table B	Annually
	Statistics South Africa	Financial Census	Annually
		Non-Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Expenditure	National Treasury	Appendix A	Annually
	SALGA	Local Government Table B	Annually
Expenditure on Fixed Assets	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
External Interest	National Treasury	Appendix A	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly

## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Grants and Subsidies	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
	SALGA	Local Government Table B	Annually
Infrastructure	National Treasury	Appendix A	Annually
		Capital Acquisition & Sources of Finance	Annually
			Monthly
		Basic Service Delivery Database	Annually
	SALGA	Local Government Table A	Annually
Interest and Redemption Payments	DPLG	Municipal Monitoring Questionnaire	Quarterly
	SALGA	Local Government Table B	Annually
Loan Repayments	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Long-Term Deposits	National Treasury	Appendix A	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Long-Term Liabilities	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually
Operating Budget	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
		Budget Evaluation Checklist	Annually
	SALGA	Local Government Table B	Annually
Operating Expenditure	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
Operating Income	National Treasury	Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly

## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Operating Income - Water	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Operating Income - Refuse	National Treasury	Statement of Actual Performance	Annually
			Monthly
	Statistics South Africa	Statement of Budget Performance	Annually
		Financial Census	Annually
Operating Income - Water	National Treasury	Survey of Quarterly Financial Statistics	Quarterly
	Statistics South Africa	Statement of Actual Performance	Annually
		Statement of Budget Performance	Annually
Other Assets	National Treasury	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
	SALGA	Appendix A	Annually
		Capital Acquisition & Sources of Finance	Annually
Other Creditors	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
	Statistics South Africa	Financial Census	Annually
Other Debtors	National Treasury	Age Analysis of Debtors	Monthly
		Statement of Financial Position	Annually
	Statistics South Africa	Financial Census	Annually

## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Other Income	DPLG	Municipal Monitoring Questionnaire	Annually
			Quarterly
	National Treasury	Appendix A	Annually
	Statistics South Africa	Financial Census	Annually
Survey of Quarterly Financial Statistics		Quarterly	
Other Investments	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Statistics South Africa	Survey of Quarterly Financial Statistics	Quarterly
Overdraft Facility	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
PAYE Deductions	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Pension / Retirement Deductions	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Provision for Working Capital	National Treasury	Appendix A	Annually
	SALGA	Local Government Table B	Annually
Rates Income	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
SALGA	Local Government Table B	Annually	
Refuse Removal Service	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
SALGA	Local Government Table B	Annually	
Regional Levies	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Appendix A	Annually



## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Regional Services Levies - Remuneration	FFC	Survey of Quarterly Levy Statistics	Quarterly
	National Treasury	Statement of Actual Performance	Annually
		Statement of Budget Performance	Annually
Regional Services Levies - Turnover	FFC	Survey of Quarterly Levy Statistics	Quarterly
	National Treasury	Statement of Actual Performance	Annually
		Statement of Budget Performance	Annually
Repairs and Maintenance	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
Retained Surplus	SALGA	Local Government Table B	Annually
	Statistics South Africa	Financial Census	Annually
Sanitation Service Income	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
		Statement of Budget Performance	Annually
Short-Term Deposits	Statistics South Africa	Survey of Quarterly Financial Statistics	Quarterly
Short-Term Portion of Long-Term Liabilities	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually

## Financial questionnaires per classification with possible duplication

Classification	Institution	Source	Frequency
Specialised Vehicles	National Treasury	Appendix A	Annually
		Capital Acquisition & Sources of Finance	Annually
	SALGA	Local Government Table A	Annually
Stock / Inventory	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Financial Position	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Subsidies	DPLG	Municipal Monitoring Questionnaire	Quarterly
	Statistics South Africa	Financial Census	Annually
Tariff Stabilisation and Other Reserve Funds	National Treasury	Statement of Budget Performance	Annually
	Statistics South Africa	Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly
Trust Funds	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Statement of Budget Performance	Annually
		Statement of Financial Position	Annually
VAT (Output less Input)	DPLG	Municipal Monitoring Questionnaire	Quarterly
	National Treasury	Age Analysis of Creditors	Monthly
Water Service Income	DPLG	Municipal Monitoring Questionnaire	Quarterly
	DWAF	WSA Regulatory Performance Report	Monthly
	Municipal Demarcation Board	Capacity Assessment	Annually
	National Treasury	Appendix A	Annually
		Statement of Actual Performance	Annually
			Monthly
	National Treasury	Statement of Budget Performance	Annually
			Annually
	SALGA	Local Government Table B	Annually
	Statistics South Africa	Financial Census	Annually
		Non-Financial Census	Annually
		Survey of Quarterly Financial Statistics	Quarterly



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## Restructuring of the Electricity Distribution Industry

Fikile Maseko

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## Abstract

Significant changes to the regulations governing the electricity distribution industry have been conceptualised since the late 1990s. In 1997 the South African Cabinet approved the Electricity Industry Committee report, which recommended the restructuring of the electricity distribution industry into a number of Regional Electricity Distributors. Prior to 1994, municipalities distributed electricity in historically white areas, while Eskom covered historically black townships and some homelands. The electricity distribution industry was thus characterised by inequality stemming from the different tariffs charged by municipalities and by poor service delivery due to the lack of capacity in poor municipalities. Since 1998, government has initiated a number of far-reaching processes to deal with the restructuring of the electricity distribution industry. They commenced with the establishment of Eskom as a public company in 2001. Due to the large number of distributors, both large and small, restructuring has been geared towards rationalising the electricity distribution industry. This involves proposals to transfer assets from Eskom and local governments to six Regional Electricity Distributors.

Keywords: Regional Electricity Distributors, Tariffs, Service delivery, Restructuring

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## Abbreviations and Acronyms

DME	Department of Minerals and Energy
DoRA	Division of Revenue Act
DPLG	Department of Provincial and Local Government
DPE	Department of Public Enterprise
EDI	Electricity Distribution Industry
ERIC	Electricity Restructuring Inter-departmental Committee
FFC	Financial and Fiscal Commission
JSB	Joint Services Board levies
NERSA	National Electricity Regulator of South Africa
NT	National Treasury
RED	Regional Electricity Distributor
RSC	Regional Services Council levies
SARS	South African Revenue Service
VAT	Value Added Tax



## 1. Introduction

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The South African Cabinet approved the Electricity Restructuring Inter-departmental Committee (ERIC) report in 1997. The report recommended the restructuring of the Electricity Distribution Industry (EDI) into a number of Regional Electricity Distributors (REDs). The rationale for the restructuring of the electricity distribution industry was to bring an end to the fragmentation in the industry that has led to a number of problems, including economies of scale, skills and specialisation that could not be captured by many of the smaller municipal distributors. Prior to 1994, municipalities distributed electricity in historically white areas, while Eskom covered historically black townships and some homelands. The electricity distribution industry was thus characterised by inequality stemming from the different tariffs charged by municipalities and by poor service delivery due to the lack of capacity in poor municipalities. Consequently, in 1999 Cabinet also approved a transitional process to move the EDI to the REDs structure; principles for such restructuring were captured in the Electricity Distribution Blueprint Report of 2001 (the Blueprint Report).

The Blueprint contained five key objectives of the restructuring process. These were to:

- provide low-cost electricity to all consumers, with equitable tariffs for each customer segment
- provide a reliable and high-quality supply and service to all customers, in support of the government's economic and social development plans
- meet the country's electrification targets in the most cost-effective manner and so ensure that electrification is contributing to social and economic development
- meet the legitimate employment, economic and social interests of all employees in the sector, and ensure their safety
- operate in a financially sound and efficient manner, in order to provide a reliable and sustainable future for both consumers and employees.

In line with the Blueprint, EDI Holdings (Pty) Ltd was established in 2003 as a first step in the restructuring process. On 25 October 2006 Cabinet approved the proposal to create six REDs which would be established as public entities.

The objective of this report is to assess progress with the restructuring process to date and to also determine the potential financial risks with which municipalities distributing electricity could be faced. This report draws extensively on the work that the Financial and Fiscal Commission (FFC) undertook for the 2002/03 fiscal year. The FFC's submission was made in response to government's first proposal to restructure the electricity distribution industry and was geared towards assessing the inter-governmental fiscal implications of that proposed restructuring.

## 2. Municipalities and Eskom

---

The key stakeholders in the EDI process are municipalities, Eskom and the following government departments: the Department of Minerals and Energy (DME), the Department of Public Enterprise (DPE), the Department of Provincial and Local Government (DPLG) and the National Treasury (NT).

### 2.1 Municipalities

In its submission of 2002/03 for the Division of Revenue Act (DORA) the FFC recommended, *inter alia*, that no stakeholder should experience deterioration in its circumstances owing to the restructuring process and that the revenue accruing to REDs should remain within local government. The following were some of the proposals applicable to the restructuring process that were made in the document:

- A detailed study of both the costs and benefits of the transfer should be carried out to ascertain whether a net loss will result.
- The advantages and disadvantages of retaining consolidated billing systems with municipalities should be carefully weighed, and measures should be implemented to retain the advantages conveyed to municipalities by electricity distribution.
- RED boundaries should be co-terminus with municipal boundaries to ensure that residents of a given municipality do not fall within different REDs and hence under different tariff structures<sup>1</sup>.

---

1 FFC Submission to the DORA 2002/03

In its response to the recommendations made by the FFC, government agreed that restructuring of the electricity distribution industry and the creation of the REDs would have a major impact on local government finances (National Treasury, 2003: 249). However, the extent of the financial impact has not been quantified to date.

There are at present 187 municipalities that have electricity distribution licences from the National Electricity Regulator of South Africa (NERSA). Those that are currently providing electricity generate about 30 to 40% of their revenue from electricity business<sup>2</sup>. In other words, if electricity provision is taken away from municipalities, the revenue they raise would fall since electricity is a large proportion of their revenue base. This might result in higher debt levels and reduced service delivery. Crucially, electricity has been pivotal in the management of revenues and credit control as electricity service terminations are the most effective means municipalities have to enforce payment for all services.<sup>3</sup> In addition; municipalities have traditionally generated significant financial surpluses from their electricity undertakings, which have been used to cross-subsidise other services, as is evident from Table 1 below.

**Table1: Electricity surpluses (R'000)**

Municipality	Revenue	2006 Expenditure	Surplus	%	Revenue	2005 Expenditure	Surplus	%
Johannesburg	3 825 943	3 505 153	320 790	8.4	3 577 663	3 225 243	352 420	9.9
Tshwane	2 575 965	2 460 133	115 832	4.5	2 496 487	2 263 821	232 666	9.3
Cape Town	2 909 316	2 790 159	119 157	4.1	2 770 686	2 669 387	101 229	3.7
eThekweni	3 179 745	2 754 655	425 090	13.4	3 057 391	2 703 437	353 954	11.6
Nelson Mandela Bay	1 132 729	991 871	140 858	12.4	1 052 537	917 228	135 309	12.9
Ekurhuleni	2 895 496	2 487 470	408 026	14.1	2 871 726	2 576 802	924 294	10.3
Msunduzi	612 210	469 751	142 459	23.3	480 286	469 816	10 470	2.2
Mangaung								
Total	17 131 404	15 459 192	1 672 212	9.8	16 796 004	15 210 274	1 585 730	9.4

Source: South African Cities Network (2006)

<sup>2</sup> FFC Submission to the DORA 2002/03  
<sup>3</sup> Meeting between the City of Johannesburg and the FFC on 18 February 2008

There are a number of challenges relating to EDI restructuring that are of concern to municipalities and would have to be addressed as a matter of urgency. For instance, electricity is used for credit control purposes to collect revenue in respect of other services. The fear is that current revenue collection levels will decline to the point of municipalities becoming bankrupt. Again, the national fiscus might be expected to assist should such a situation arise. For instance, the City of Johannesburg is currently owed R2.4 bn for services and has done a survey which revealed that in areas where the City cuts the supply of electricity to customers, there was a level of payment of up to 80% by customers<sup>4</sup>. Other costs have been cited too, e.g. compensation for the assets transferred to the REDs, cost of employees migrating to the REDs, loss of assets resulting in lower credit rating and therefore higher capital costs, etc.

Initially, in 2005 Cabinet approved a model of six metro REDs plus one national RED. In terms of the 2005 Cabinet Decision, REDs were to be established in the form of municipal entities. However, in October 2006 Cabinet approved another model totally different from the 2005 model, which provided for the establishment of the six REDs in the form of public entities. In addition, no details have been provided on how these public entities are to be managed. The change of the REDs from a municipal entity to a public entity is likely to have a negative financial impact on municipalities because municipalities run the risk of losing control over the public entity and the finances thereof. The EDI restructuring also poses its own challenges to the fiscal framework of municipalities in the sense that electricity tariffs have formed a critical base of municipal revenue. The uncertainty relating to the structure of REDs and how they are going to operate has led to some unintended negative consequences, such as lack of maintenance of electricity infrastructure.

Another crucial change that has taken place at the local government sphere is the abolition of Regional Services Council (RSC) levies in 2006. The levies contributed a significant amount of municipal revenue, particularly for Category A and Category C municipalities. The income lost as a result of the abolition of the RSC levies has since been replaced by a government grant until a replacement is found. There is concern from municipalities that a lack of own source of revenue will have a negative impact on their fiscal autonomy and also affect their planning as they do not have control over the grants from national government.

4

*Meeting between the City of Johannesburg and the FFC on 18 February 2008 at the City's offices.*

## 2.2 Eskom

Like the municipalities, Eskom has also raised certain concerns regarding the restructuring process. For Eskom too, the loss of assets will mean a weaker balance sheet and this will have a bearing on Eskom's credit rating<sup>5</sup>. Eskom asserts that in principle, it is not opposed to the EDI restructuring *per se*. The issues identified by Eskom were that:

- The National Pricing Framework to be finalised as a matter of urgency.
- The REDs are to be governed as public entities<sup>6</sup>.
- Eskom needs confirmation that its credit rating will not be adversely affected by the restructuring process.
- Eskom needs an indication that it would retain its key industrial customers after the implementation of the REDs.
- Eskom needs confirmation that a critical mass of municipalities will join the REDs. As matters currently stand, national government cannot compel municipalities to participate in the REDs, i.e. municipal participation is voluntary.
- Eskom's control in the REDs needs to be proportionate to its shareholding/assets.

It is envisaged that policy and legislative enablers, in the form of the Asset Transfer Framework and the proposed RED Establishment Act, will expedite matters and remove a large number of these and other concerns of both Eskom and the municipalities.

## 3. Challenges to the Electricity Distribution Industry

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Local government is authorised in terms of Part B of Schedule 4 of the Constitution to undertake electricity reticulation. This means that no other organisation or institution is allowed to reticulate unless there are constitutional amendments. In terms of the current restructuring, the Constitution is seen as an obstacle to the successful implementation of the process. It is envisaged that the REDs will be registered as public entities in which both national and local government will participate. Such an entity or governance arrangement violates the provisions of the Constitution as electricity reticulation is the sole competence area of municipalities.

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<sup>5</sup> Meeting between the FFC research team and Eskom Distribution on 28 February 2008  
<sup>6</sup> However, this has been taken care of by the Cabinet Decision of October 2006.

The electricity restructuring process has been unfolding at a very slow pace because of the incompleteness of the necessary legislation, as well as the misalignment of existing legislation. These necessary legislation includes the REDs Establishment Bill, the Assets Transfer Framework, the National Cross-Subsidy Framework, the Municipal Finance Management Act and the Municipal Systems Act.

The REDs Establishment Bill seeks to smooth the operations of the electricity distribution industry. It deals with the issues of governance, valuation and compensation. Critical outstanding policy issues are deferred to be dealt with in the form of regulations, which are still to be drawn up. These include issues relating to the valuation methods to be used, as well as compensation for the assets transferred. The inability of the REDs Establishment Bill to address these issues adequately is a clear indication of the complexity associated with the restructuring of the electricity distribution industry.

Municipalities are also expected to undergo 'due diligence' processes before joining the REDs. Section 78 of the Municipal System Act stipulates that municipalities should ascertain the potential losses and gains likely to accrue as a result of joining any entity. Depending on the result of the due diligence process, municipalities may decide whether or not to join a RED. During submissions to the recent Local Government Laws Amendment Bill, EDI Holdings (Pty) Ltd requested that for the purpose of EDI restructuring, municipalities be exempted from section 78 processes<sup>7</sup> as this section is viewed as an impediment to successful implementation of the REDs. However, an outright exemption of municipalities from this important provision would compromise the existing policy framework, while at the same time setting a wrong precedent.

Both the Asset Transfer Framework and the Municipal Fiscal Powers and Functions Act (MFPFA) have been finalised. The Asset Transfer Framework would enable municipalities to transfer electricity-related assets to the REDs as required in terms of the Municipal Finance Management Act. However, it is questionable whether the Assets Transfer Framework has really been finalised since the Compensation Framework that forms part of it is still outstanding. As a matter of principle, the two frameworks should be consistent with each other. The Fiscal Powers and Functions Act enables the Minister of Finance to regulate municipal surcharges on electricity. This Act seeks, among others, to harmonise and reduce surcharges on particular sectors of the economy in the spirit of administered prices. Although apparent completion of these Acts is noted, it should be ensured that all the pieces of the necessary enabling legislation are also in place. Of concern is the fact that no specific analysis of the sequence in which the enabling policies are to be put in place has been done. Logic suggests that the REDs Establishment Bill should precede other pieces of legislation in order to set the implementation process in motion.

<sup>7</sup> A section 78 (s78) assessment is a process required by the Municipal Systems Act (2000) to assess potential service delivery mechanisms for the provision of a municipal service.

The delay in finalising the legislation has led to uncertainties among the stakeholders involved in the electricity distribution industry. These uncertainties are likely to culminate in challenges such as the lack of maintenance of electricity infrastructure by both the municipalities and Eskom. EDI Holdings estimated the maintenance backlogs to be at R5 billion in 2007. The lack of maintenance of electricity networks has already resulted in the widespread power outages experienced earlier this year and the National Energy Regulator has pointed out that many electricity assets are in a state of disrepair. Thus, all the stakeholders need to set workable timeframes and deadlines by which all the necessary legislation is complete.

As mentioned earlier, the Cabinet Decision of September 2005 approved the formation of six REDs plus one National Electricity Distributor. This model failed the financial viability test and subsequently, in October 2006, Cabinet approved the proposal to create six REDs which would be established as public entities under the auspices of EDI Holdings. In May 2005, the City of Cape Town was mandated to acquire ownership of the Municipal Entity RED1 (Pty) Ltd, which was to be used as a pilot project.

In June 2005, the City of Cape Town entered into a Service Delivery Agreement with the municipal entity RED1 as its service provider for electricity reticulation. It should be noted that there was no staff and asset transfer on the date of the establishment of RED1. RED1 subsequently contracted both Eskom Western Region operating within the City's judicial boundaries, as well as the City's electricity undertaking to provide the necessary services. This agreement with the City is known as the Operating and Transitional Plan for Transfer Agreement (O&TPT) and was allowed for a period of between 12 and 18 months for the transfer of staff and assets to be effected (City of Cape Town: 2007). However, due to there being no nationally approved Asset Transfer Framework, in fact no transfer of assets or staff took place from the City of Cape Town, culminating in the demise of RED1 effective from 1 January 2007. It can thus be concluded that it is imperative to finalise the necessary enabling legislation for the implementation of the REDs to avoid incidents similar to the RED1 fiasco.

## 4. Conclusions and Recommendations

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In conclusion, the slow pace at which the restructuring process is unfolding is of great concern to stakeholders affected by the process, especially to municipalities that are currently distributing electricity. A further concern in the restructuring process relates to voluntary participation in the Regional Electricity Distributors (REDs) by municipalities.

This voluntary participation is seen as one of the factors contributing to the delay of the restructuring process and it is suggested that some mechanisms should be put in place to ensure full participation by all the stakeholders involved.

The impact on municipalities of the potential loss of a crucial revenue source from electricity distribution will need to be adequately addressed. To ensure commitment and full buy-in from all the stakeholders involved in the restructuring process, further guidelines on the participation of municipalities and Eskom in the REDs need to be worked out. In that respect the FFC recommends that:

- Government should address the potential loss of a crucial revenue source for local government as a result of the establishment of the REDs. The proposed restructuring process needs to factor in current reforms to the fiscal framework and the greater developmental role envisaged for the local sphere of government. There is a need to finalise legislation in respect of (i) the transfer of assets, (ii) the National Pricing Framework and (iii) the establishment of the REDs.



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## Strategy to Enhance Local Government Revenue Sources

Fikile Maseko

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## Abstract

The local government sphere has undergone significant changes since its inception in respect of both the structures and systems of the fiscal framework and its component institutions. The most recent changes include the abolition of Regional Services Council/Joint Services Board levies and the subsequent enactment of the Municipal Fiscal Powers and Functions Act (Act No.12 of 2007), which is expected to bring about changes to the local government fiscal framework through the regulation of the introduction of municipal taxes and surcharges. These changes have been of a structural, systemic, institutional and fiscal nature. In this review we focus on the fiscal changes that have taken place and put forward a range of mechanisms which can be used to enhance and augment the resources available to local government.

Keywords: Regional Services Council levies, Joint Service Board levies, Municipal taxes, Fiscal framework, Local government

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## Abbreviations and Acronyms

CGT	Capital Gains Tax
DoRA	Division of Revenue Act
FFC	Financial and Fiscal Commission
GDP	Gross Domestic Product
OECD	Organisation for Economic Co-operation and Development
PIT	Personal Income Tax
RSC/JSB	Regional Services Council/Joint Services Board
VAT	Value Added Tax



## 1. Introduction and Background

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The local government sphere has undergone significant changes since its inception in 2000. Local government fiscal reforms in line with the Constitution were introduced over a period of time starting from 1998 with the initial introduction of the equitable share for local government, and continued in 2000 with the amendment of the Municipal Structures Act when functional responsibilities were amended, which brought about a new wave of revenue instruments for categories of municipalities. The introduction of the Municipal Property Rates Act on 2 July 2005 ushered in a new and uniform property rating system for the sphere, which is expected to have an impact on local government revenue.

In addition, the Regional Services Council/Joint Services Board (RSC/JSB) levies were abolished with effect from July 2006. National Treasury put forward a list of proposals for the replacement of RSC/JSB levies<sup>1</sup>. In its Submission of 2007/08 to the Division of Revenue, the Financial and Fiscal Commission (FFC) provided a response to National Treasury's proposals and also made an undertaking that it would conduct a broader assessment of the local government fiscal system, as well as other potentially viable revenue sources for local government.

The enactment of the Municipal Fiscal Powers and Functions Act (Act No. 12 of 2007) is expected to bring about changes to the local government fiscal framework through the regulation of the introduction of taxes and the regulation of certain municipal surcharges. The Act makes provision for municipalities themselves to take the lead in requesting specific revenue sources and motivating for them in terms of specified criteria.

The purpose of this document is to assist municipalities in identifying a basket of revenue sources and also assist in the choice and motivation of revenue sources. Chapter 2 begins with a discussion of the circumstances that gave rise to the abolition of the levies, and goes on to discuss the significance of the change by analysing the impact on the progress of decentralisation. Chapter 3 lays the groundwork for evaluating revenue sources by establishing the accepted guiding principles of assigning revenue sources to sub-national governments, and draws on international literature. Chapter 4 outlines the available alternatives, grouping them into opportunities for extending the use of instruments which already exist on our statute books, and analyses several new instruments that may be usefully considered in the South African context.

<sup>1</sup> *National Treasury: Options for the replacement of RSC and JSB levies, September 2005*

Chapter 5 looks at some international experience, principally in the OECD countries, in an attempt to find some lessons applicable to South Africa. Chapter 6 discusses a survey study undertaken by the FFC in nine municipalities to gauge their reaction to a set of potential revenue sources. Finally, chapter 7 provides recommendations.

## 2. The Abolition of the Levies

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The RSC/JSB levies were local business taxes based on turnover and remuneration of businesses based in the jurisdiction of district and metropolitan municipalities. They were collected by the municipality itself, supported by the Commissioner for Inland Revenue. As mentioned above, the RSC/JSB levies were abolished with effect from 1 July 2006. As an interim measure, the levies have been replaced by a national grant while new revenue instruments are being explored.

It is clear that, while there are undeniable grounds for criticising the levies, they had, at the time of abolition, made a significant contribution to the funding of the constitutionally independent local sphere of government. Their abolition therefore has consequences for the process of decentralisation. Decentralisation in South Africa attempts to occupy a middle ground between tight control and accountability to central government, combined with considerable fiscal autonomy at the local level, in the form of own sources of revenue. In the context of this mix, the abolition of the only own source for the districts, the RSC/JSB levies, obviously has a significant impact.

In its efforts to create a controlled decentralised state, South Africa has done many things well. First, it used its Constitution to articulate the broad outline of a decentralisation plan. To a degree not found in many constitutions, it spelled out the rights and the responsibilities of each of the three spheres of government, which included the assignment of public service responsibilities and revenue sources. It has assigned local governments a significant own source of revenue (property taxes or rates). Municipalities are given the responsibility for making their own decisions concerning the provision of public services and are assigned substantial taxing powers to give effect to these decisions.

Bird (1999) and others stress the importance of own-source revenues rather than grants for local government. Indeed, this is seen as essential for effective decentralisation as envisaged in the Constitution. Own-source authority allows municipal governments to adjust the size of their budgets and to determine how their budgets are financed. Access to own sources of revenue therefore strengthens the accountability of local government directly to the local taxpayer, and gives local councils an extra inducement for caution and efficiency in fiscal operations.

### 3. Principles of Sub-National Revenue Assignment

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In choosing the most appropriate revenue sources for local government, whether taxes or charges, expert opinion focuses on three broad principles (McLure, 1999; Bahl and Linn, 1992). First is the principle of revenue adequacy, that is, the amount of local government revenue should match the amount of expenditure responsibility assigned.

The second principle is that of correspondence. Local governments should not have access to taxes where there is potential to export a significant part of the burden to persons who live outside the expenditure benefit zone. For example, if municipality A can export its sales tax burden to consumers who live in municipality B, then municipality A will be encouraged to overspend and consumers in municipality B will pay taxes that are more than commensurate with the services they receive.

The third principle is that local governments should only levy taxes that they can 'effectively' administer. 'Effectively' in this case means administered at reasonable cost and in a fair way. Some general criteria can be established for selecting the best local taxes (McLure, 1999).

**Local:** The tax should be genuinely local, i.e. the rate should be set locally, and the administration should have a strong local element.

**Yield:** A tax should be considered only if it contributes significantly to local government revenues.

**Collectability:** If the tax cannot be administered or can only be administered at very high cost, the tax should not be considered, regardless of any theoretical advantages it might have.

**Economic Efficiency:** Efforts should be made to minimise economic damage done by revenue-raising activities. In general, such damage results from the tendency of taxpayers to adjust their economic decisions away from the most optimal towards actions that would minimise taxation.

**Immobility of Base:** Local taxes are best based upon assets or activities that cannot easily move to another jurisdiction. This minimises the potential harm of location decisions which are made in order to minimise the tax, rather than to optimise the location.

**Base Stability in Economic Cycles:** Minimise vulnerability of local finances to fluctuations in macroeconomic conditions. It is desirable that local tax sources be buoyant in the presence of economic growth, but are not unduly affected by downturns in the economic cycle.

**Horizontal Fiscal Balance:** A local tax will work poorly if it results in wide disparities between municipalities which then have to be remedied by a local grant.

**Transparency and Local Impact:** It should let citizens know how much government services cost.

**Fairness:** Distribute the cost of government in an equitable fashion among households, horizontally and vertically. There should be minimal interference with the development of regional and national markets.

## 4. Alternative Revenue Sources

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Several options have already been proposed to replace the RSC/JSB levies<sup>2</sup>. These include replacing the RSC/JSB levy with a local tax on gross payroll of business, replacing the RSC/JSB levy with a compensating grant, replacing it with an alternative revenue-raising instrument, or replacing it with a mixed system of own revenue and grants for municipalities.

In its Submission for the Division of Revenue 2007/08, the FFC made recommendations regarding the above options. With regard to the proposal that grants be considered as RSC/JSB transitional levy replacement, the FFC supported this proposal. As a transitional measure this proposal addresses the FFC's original recommendation, namely that municipalities that were benefitting from the RSC/JSB levy should not be prejudiced as a result of the RSC/JSB levy system being reformed or abolished<sup>3</sup>.

The FFC has also emphasised that the long-term objective should be to clearly define what purpose a new revenue source for local government is expected to serve, and accordingly proceed with the investigation of the most appropriate revenue sources for achieving the chosen objectives.

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<sup>2</sup> *National Treasury: Options for the replacement of RSC/JSB and JSB levies, September 2005*  
<sup>3</sup> *The FFC's Submission for the Division of Revenue, 2007/08*

In addition to the levy replacement grant, zero-rating of property tax for VAT purposes was introduced by National Treasury at the same time as the abolition of the levies as compensation for the loss of income from the levies. Previously property tax was exempt from VAT. This meant that the VAT paid by municipalities on inputs to services provided by municipalities, but financed by property tax, could not be claimed. The change to zero-rating of property tax meant that this tax could now be reclaimed by municipalities, but ratepayers still did not have to pay VAT on property tax.

From the discussion on the study that was carried out by FFC researchers in 2007, as will be evident later in the report, the abolition of the RSC/JSB levies has left both a revenue and constitutional gap in the fiscal system of South Africa. A revenue gap exists because one of the essential sources of local government income has been discontinued, and a constitutional gap has been brought about by the fact that without this important 'own' revenue source over which they have discretion, municipalities are dependent on an ad hoc grant from the central government.

In considering a range of revenue proposals, we will group them into categories:

Firstly, existing sources of revenue can be utilised more intensively, thus avoiding the need to introduce new sources. These include the extended utilisation of existing property rates and utility charges and can encompass the use of taxes currently viewed as outside the sphere of local government, such as the capital gains tax applied to property.

Secondly, new revenue sources can be proposed which are not at present in existence. A range of these will be identified.

## 4.1 Intensification of Existing Sources

### 4.1.1 Property rates

It is generally accepted (Bird and Slack, 1991) that the rate on property (property tax) is a very favourable revenue source for local government, which meets the above criteria to a large degree. Consideration should therefore be given to the extended use of this revenue source by allowing it to be used by district as well as local municipalities, as is presently the case.

Alternatively, a local revenue-sharing arrangement, known as a 'precept' can be applied in which the district or metro is given the right to impose a 'precept' on the rates collected by local municipalities. Any of these mechanisms would have the potential to increase the yield of the rates by an amount in excess of the abolished levies. There would be no need to create a new revenue source; an existing one would merely be used better.

#### 4.1.2 Utility charges

Utility charges are the most favourable source of revenue since they are based on the taxpayer's use of a particular service, and the taxpayer's liability is, to an extent, under his or her control (Bird and Tsiopoulos, 1997). There is scope for intensifying the utilisation of local charges, which should, we believe be acted upon.

#### 4.1.3 Tax on the increase of property values (Capital Gains)

With the introduction of capital gains tax (CGT) at national level as part of the income tax, the potential exists to use a tax on the non-depreciated portion of capital gains specifically on property values as a local property tax. The conventional property tax or 'rates' on land is seen by many as a tax on the unearned increment in property value which was generated not by the owner, but by the local government in its services and infrastructure. This principle is further embodied in the capital gains tax on property, which captures part of the uplift in value of the property. A local 'property gains tax' could be piggy-backed on the administration of the property transfer fee, and be paid by the seller at the time of sale. Exemptions and thresholds could be put in place, giving relief to primary residence owners, and to capital gains below a specific minimum. Such a tax would meet the criteria outlined in Chapter 3 above. Despite these apparent advantages of the CGT, our survey revealed that a majority of municipalities surveyed considered it to be impractical to administer, particularly at district level. It remains, however, an existing revenue instrument which might be successfully assigned to local government.

### 4.2 Possible New Sources of Revenue: Choices for Local Non-property Taxation

As outlined above, the best sources of revenue for local government are property taxes (rates) and user charges for local utilities. These are already in existence in South Africa, and should be used to their maximum before other sources are contemplated.

When considering expanding the range of revenue instruments, those discussed below can be considered as possible candidates. In this section we will briefly outline the full range of possibilities, and focus in greater depth on the few we consider to have the best potential. Although we point out the sources that appear on the face of it to be contrary to the Constitution as it stands, we will nevertheless describe and evaluate them in the spirit of open enquiry:

### 4.2.1 Turnover tax

This can be a tax on gross receipts or 'turnover', as was the case with the former levy. It falls equally on all businesses, regardless of the level of their profit margins. Even unprofitable businesses are taxed. The turnover tax discriminates in favour of integrated businesses and against small independent enterprises. This too is a problematic characteristic in the context of South African emerging businesses. Because of the complex methods of passing on the tax to consumers and to suppliers of labour and land, the true amount of the tax burden is hidden. For example, the tax embedded in the cost of items from earlier transactions is not seen. The Constitution, as it stands, appears to preclude this revenue source at local level.

### 4.2.2 Retail sales tax

There are many examples of this tax in use around the world. It is a provincial tax in Canada, and is used at both state and local level in the USA and Russia (Bird and Slack, 1991). When it is used, it is generally a significant source of revenue for the taxing authority. Tax is visible, buoyant and yields significant revenue even in difficult economic conditions. It is productive with an acceptable collection cost. The incidence of sales taxes is generally regressive, and therefore not fair.

Sales taxes are generally collected from vendors, usually with the expectation that they will add the tax to the prices they advertise and charge their customers at the point of sale. It is common practice to exclude a range of transactions on a number of grounds, most commonly on the nature of the item (food for at home consumption), its intended use (as component part of an item to be resold), or on the nature of the purchaser or seller (e.g. a charitable organisation). Because of the large base, which may be a multiple of the gross domestic product of the country, the sales tax is characterised by low rates. It is seen as a local alternative to value added tax, as it does not require boundary controls.

The tax is productive, visible, buoyant and economical, but it is not fair as it is regressive (Bird, 1992). In South Africa it is not a local revenue source as defined by the Constitution.

### 4.2.3 Retail-level selective excise taxes

Taxes on the value of sales of specific goods or services are widely used at local level. Most common are excises on utilities (electricity, water, gas), on transient lodging (tourism), restaurant meals, gaming and motor vehicle fuel.

There are a number of advantages to this form of tax:

- The limited number of vendors makes administration relatively easy and inexpensive.
- The taxes seldom comprise a significant proportion of the taxing authorities' revenue, but they are very buoyant, increasing sharply with economic upturns, and are important to local governments in that they provide further discretionary income without a change in budgeted rates.

On the negative side, the utility and fuel prices on which these taxes are often based are important signals of relative scarcity, and play an important role in influencing the behaviour of producers and consumers (Solomon, 1986). Taxes can distort these prices and cause inefficiency in the economy. There can also be significant horizontal imbalance when a few producers are concentrated in a few jurisdictions, leaving the others without a base.

### 4.2.4 Motor vehicle excises (licences)

There appears to be considerable scope for the increased use of motor vehicle taxation at sub-national level. In South Africa, motor vehicle licences are a provincial revenue source, collected on their behalf by many of the larger local governments. Passenger vehicle licences are currently in the range of R200 per annum. There are several potential mechanisms for taxing motor vehicle usage:

- Annual unrestricted licence fee (existing).
- Restricted licence for entry into congested areas, such as CBDs, office parks, etc.



- Parking fees, taxes on off-street parking.
- Fuel tax.
- Road tolls.

The revenue potential is good, but would require a major escalation of fees. It has been estimated that an 80% across-the-board increase in existing fees would be required to raise R1 bn per annum. The base is, however, growing rapidly, with car ownership rising steadily from the current level of about 200 cars per 1 000 population towards a more typical figure for major cities in the developed world which have roughly 550 registered vehicles per 1 000 population. There is no constitutional impediment to allocating this revenue source to local governments.

Aside from the revenue potential, the scope exists for using this tax as a means to limit over-utilisation of congested roads and to minimise pollution. The imposition of a tax on road use can therefore be seen as an artificial 'price' (Lindahl Tax). For it to operate as such, it would have to be selectively applied to areas of congestion or high pollution; otherwise it would constitute an over-pricing of a resource, and would be inefficient.

#### 4.2.5 Miscellaneous business taxes

There are a number of taxes based on gross receipts, number of employees, enterprise wealth and payroll, which are used either alone or in combination with other revenue sources. They are often structured for simplicity, which makes collection easier but may conflict with fairness considerations, and can have an effect on the potential for economic growth. Typically, such taxes become more difficult to collect as the economy develops and pressure increases for reform.

Compliance is often poor, being based on self-reporting, and is difficult to verify because information on local businesses is often poor. The improvement of local economic information is often a significant additional benefit.

On the negative side, however, such local taxes may interfere with development of regional or national economies by creating artificial barriers to expanding businesses, or may be used as a surrogate for income taxation.

## 5. International Experience

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### 5.1 Local Taxes in the OECD<sup>4</sup>

Table 1 highlights the relative importance of local taxes in selected countries of the OECD (Bosch and Espasa 1999). It indicates a very wide range of practices regarding local own revenue sources. The three dominant forms of local tax are income taxes, sales taxes and property taxes. In all but two of the 31 countries, these three account for over 50% of local revenue, averaging over 90% for the group as a whole. In 11 of the 31 countries in the sample, property taxes are the dominant source of local revenue, as they are in South Africa. In 13 countries sales taxes are dominant, and in only one country do sales taxes hold the dominant position.

In 14 of the countries, local taxes are more than 10% of all taxes collected, but this percentage varies very widely, from 0.9% (Greece) to over 30% (Sweden and Spain).

As a percentage of GDP, local taxes range from as low as 0.2% in Mexico to 16% in Sweden and Denmark.

It therefore appears that there is a very wide range of practices regarding the relative importance of local revenues in relation to the national fiscus of each country and in relation to the total economy. In this section we will attempt to identify some patterns or models of national practices.

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*The Organisation for Economic Co-operation and Development is an international organisation of 30 countries which accept the principles of representative democracy and free market economy.*

Table 1: Local taxes in the OECD, 2004

Country (1)	Tax sources as a % of total local tax revenues				Local taxes as a % of GDP (6)	Local taxes as a % of all taxes <sup>5</sup> (7)
	Income <sup>1</sup> (2)	Sales <sup>2</sup> (3)	Property <sup>3</sup> (4)	Other <sup>4</sup> (5)		
Federal:	%	%	%	%	%	%
Australia	0.0	0.0	100.0	0.0	0.9	2.9
Austria	55.4	29.0	10.6	5.1	4.0	9.4
Belgium	85.5	14.3	0.0	0.3	2.2	5.0
Canada	0.0	1.9	94.8	6.8	2.8	8.6
Germany	76.3	5.9	17.5	0.2	2.5	7.4
Mexico	0.0	1.7	89.3	10.8	0.2	1.1
Switzerland	83.2	0.2	16.6	0.0	4.7	16.0
United States	5.4	22.3	72.3	0.0	3.7	14.7
Average	38.2	9.4	50.1	2.9	2.7	8.1
Unitary:	%	%	%	%	%	%
Czech Republic	54.5	42.0	3.6	0.4	5.0	13.0
Denmark	93.0	0.1	6.9	0.0	16.9	34.5
Finland	94.8	0.0	5.0	0.1	9.2	20.8
France	0.0	15.6	51.7	40.4	4.7	11.1
Greece	0.0	35.2	64.9	53.8	0.3	0.9
Hungary	0.1	75.5	24.1	0.4	2.3	6.1
Iceland	82.8	3.4	13.7	0.0	8.7	22.5
Ireland	0.0	0.0	100.0	0.0	0.6	2.0
Italy	20.5	25.5	14.5	60.6	6.8	16.6
Japan	45.9	21.7	31.4	1.0	6.8	25.6
Korea	14.4	21.2	49.4	3.6	4.4	17.8
Luxembourg	91.3	1.5	6.9	0.3	1.8	4.9
Netherlands	0.0	43.8	56.2	0.0	0.8	4.0
New Zealand	0.0	10.0	89.9	0.0	1.7	5.5
Norway	88.9	2.0	9.1	0.0	6.0	13.7
Poland	57.0	1.7	33.1	0.0	4.0	11.6
Portugal	20.2	29.4	46.9	0.2	2.4	6.6
Slovak Republic	52.9	24.3	22.8	0.1	1.4	5.1
Spain	25.6	46.4	26.8	1.4	10.5	30.4
Sweden	100.0	0.0	0.0	0.0	16.3	32.4
Turkey	33.7	46.6	13.3	37.3	2.1	7.0
United Kingdom	0.0	0.0	100.0	0.5	1.7	4.8
Average	38.9	21.4	35.0	9.1	5.3	13.5

## Local taxes in the OECD, 2004

- 1 Includes individual and corporate income tax plus payroll tax.
- 2 Includes general consumption taxes, value-added taxes, specific taxes on goods and services (fuel taxes, hotel and motel occupancy) and taxes on use of goods or on permission to use goods or perform activities.
- 3 Taxes on property including recurring taxes on net wealth.
- 4 Includes social security contributions in Austria and some residual taxes mainly on business (Austria, Canada and Germany) and miscellaneous taxes everywhere.
- 5 Total includes central government, state government, local government and social security funds.

Source: OECD, Revenue Statistics 1965-2005 (Paris: OECD, 2006), Tables 132 and 135 to 138.

### 5.1.1 Four models of local taxation systems

Bosch and Espasa (1999) distinguish four models of local taxation practice:

**‘English’ model.** In this model, practiced in the UK, Ireland, New Zealand and Australia, property tax is the only source of local revenue, with the other taxes reserved exclusively for higher tiers of government. In this group, local revenue is a much smaller percentage of all tax revenue and of the GDP than the average for the 31 countries, indicating a more centralised form of government.

**‘Scandinavian’ model.** In all four of these countries (Norway, Sweden, Finland and Denmark), there is heavy reliance on income taxation at local level, and local taxes play a much more important role in the national fiscus and in the economy as a whole, indicating a high level of local independence and decentralisation.

**‘Federal’ model.** In Germany, Austria and Belgium, income tax is the largest source of local revenue, but the others play a significant role. Relative to their total taxation and to GDP, local taxes play a lower-than-average part.

**‘Mediterranean’ model.** (Spain, Portugal, Greece, France) This group is very diverse, with a heavy reliance on grants, and significant focus on local business taxes.

Bosch and Espasa (1999) examine the pattern of local taxes in each of these models in more detail:

**‘English’ model.** In the extreme forms of this model in Ireland and the UK, only one tax is levied at the local level, the ‘council tax’, which is roughly based on property value, arranged into 9 ‘bands’. The tax is administered at national level. No use is made of any of the other potential tax bases.

This pattern is associated with a highly centralised form of government, in which local municipalities act as agents for national government departments.

**Table 2: English model of local taxation**

Country	PIT	Company Tax	VAT	Excises on goods and services	Tax on economic activity	Property Tax	Vehicle Tax	Others
UK						100%		
Ireland						100%		

**‘Scandinavian’ Model.** In the Scandinavian countries, local taxation is dominated by the tax levied on personal income (PIT). Although property taxes and company taxes play some role at local level, they are unimportant beside PIT.

**Table 3: Scandinavian model of local taxation**

Country	PIT	Company Tax	VAT	Excises on goods and services	Tax on economic activity	Property Tax	Vehicle Tax	Others
Denmark	91%	2%				7%		
Finland	88%	7%				5%		
Sweden	100%							

In Sweden PIT is the only tax levied at local level and in the other two countries it represents around 90% of tax revenue. The base of PIT is shared between central and local governments. Local government authorities, including municipalities and counties, adopt the base of the national income tax. They apply local tax rates which they are

free to set, without limitations imposed centrally. The tax rates are always proportional.

The countries adopting this model all have a high degree of decentralisation, as measured by the proportion of all taxes collected locally, and the proportion of local taxation in the Gross Domestic Product (GDP).

**‘Federal’ model.** The third model identified by Bosch and Espasa (1999) is that adopted by the local government authorities in Europe’s federal countries (Germany, Austria and Belgium). They consider it a combination of the two previous models, the Scandinavian model and the model adopted in the English-speaking countries. It is characterised by a wider range of local funding options than either of the preceding two models.

**Table 4: Federal model of local taxation**

Country	PIT	Company Tax	VAT	Excises on goods and services	Tax on economic activity	Property Tax	Vehicle Tax	Others
Germany	41		5		35	17		1
Austria	49	8	26	2		9		6
Belgium	32					49	2	18

Both property and personal income taxes are strongly used, although the latter carries more weight in Germany and Austria, while Belgium places more reliance on the property tax. In all three countries, PIT accounts for more than 30% of local revenue. In all three countries the PIT is ‘piggy backed’ on the national income tax system. In Belgium a local rate is set, using the national base. In the other countries, local government receives PIT revenue in the form of a share of the income tax collected at the federal level. German municipalities receive 15% of the revenue raised by this tax in their jurisdiction. Other taxes are levied at local level in these countries, but they are of much lesser importance. Most important of these is the tax on economic activities which constitutes a separate local tax in Germany and Austria, and is levied on the real profits from economic activities. There is also significant revenue sharing, particularly in Austria, where local authorities receive a formula-based proportion of many federal taxes.

**‘Mediterranean’ model.** The final model is found in the Mediterranean countries (Spain, France, Greece, Italy and Portugal). It is the most diverse of all four models, which range from the extreme of the uni-tax model in the

English-speaking countries to the pluralistic pattern found here, in which no tax stands out as being generally dominant. Property tax is universally used, and is dominant in three of the five countries.

This model is characterised, first, by a highly diverse tax structure in which no single tax stands out as being the most important, and second, by the relative unimportance of personal income tax which always forms part of a tax system alongside other local taxes. Very little reliance is placed on income tax which occurs only in Italy. It is clear from the large proportion falling into the category 'other' that the diversity of funding sources goes beyond the six categories identified by Bosch and Espasa (1999). In fact, this represents a high degree of reliance on transfers at local level.

**Table 5: Mediterranean model**

Country	PIT	Company Tax	VAT	Excises on goods and services	Tax on economic activity	Property Tax	Vehicle Tax	Others
Spain					12	46	15	27
France					31	24		44
Italy	4			19		66		10
Greece				42		55		4
Portugal		15				70	6	9

Four of the five countries in this group make significant use of non-property taxes outside of income tax. In France the local tax on economic activities, known as the *taxe professionnelle*, represents 31% of local tax revenue. In Spain the property tax (in the form of the *Impuesto sobre Bienes Inmuebles*) accounts for 46% of all tax revenue. The business tax (*Impuesto sobre Actividades Económicas* - a municipal tax plus a provincial surcharge) generates 12%, the vehicle tax (*Impuesto sobre Vehículos de Tracción Mecánica*) accounts for 15%, while the rest of the tax revenue (27%) comes from the tax on the increase in value of urban land (*Impuesto sobre el Incremento de Valor de los Terrenos de Naturaleza Urbana*) and the tax on constructions and building work (*Impuesto sobre Construcciones, Instalaciones y Obras*).

Thus, local finance in Spain is characterised by the typical structure of the Mediterranean model, that is, a fairly diversified system in which no single tax stands out as being the most important, and with no revenue being derived from personal income tax. In contrast the English and Scandinavian models place strong reliance on a small

number of taxes. Reforms introduced in Spain in 2002 have changed the picture for the largest cities, introducing territorial shares in the national personal income tax, VAT. Bosch and Espasa (1999) consider Spain to be moving away from the strictly Mediterranean model towards the federal pattern.

### Other countries

Finally, we have the cases of Holland and Luxembourg, which do not correspond exactly to the characteristics of any of the models described above. Holland bases its taxation primarily on a property tax (68% of its tax revenue), and in this respect it is similar to the model adopted in the English-speaking countries, but this is not the sole tax levied at the local level as it is in the UK and Ireland. In the case of Luxembourg, the main tax is a tax levied on economic activities, which generates 92% of tax revenue.

**Table 6: Holland and Luxembourg model of local taxation**

Country	PIT	Company Tax	VAT	Excises on goods and services	Tax on economic activity	Property Tax	Vehicle Tax	Others
Holland						68	18	14
Luxembourg					92	6		2

South Africa is at present closest to the UK model, with local governments heavily reliant on the property tax as a source of tax revenue. The abolition of the levies and the exploration of other sources places South Africa more in the Federal or Mediterranean models, which have a more broadly based set of local revenue sources.

## 5.2 Themes that Emerge

A number of generalisations can be made which are of relevance to the search for alternative revenue sources in South Africa.



### 5.2.1 Diversity versus ‘monoculture’ in taxation

The four models represent varying degrees of diversity in the tax base. The English system is effectively a single tax system, while the Mediterranean systems are pluralistic, not dominated by a single tax. There are good motivations to be made both for a simplified ‘English’ system, and for a complex ‘Mediterranean’ system. Simplified systems are easier for taxpayers to comply with, and more economical to administer. The greater certainty associated with such systems is less distorting than a less certain complex system. A pluralistic tax system, on the other hand, accommodates greater diversity among municipalities, allowing each one to design its own tax system by drawing on a range of local options. The unitary ‘English’ system imposes greater uniformity, and necessitates greater control of local administrations by central government.

In the context of European municipalities, which range very widely in size and form, the ability to accommodate diversity is clearly important. Its importance in a substantially rationalised English local system is less clear.

The pluralistic ability to accommodate diversity is most important in the context of local reform or restructuring. In the context of rapid change, there is a need for flexibility both in the assignment of roles and functions and in the sources of financing of local government. As the change plays itself out, municipalities need the scope to manoeuvre within the law in order to adapt themselves to changing needs. This suggests to us that the local fiscal environment could benefit from a move towards a pluralistic approach, rather than a move towards fiscal ‘monoculture’ implied by the English system.

### 5.2.2 Differentiation of roles

Throughout the countries surveyed, there is a wide diversity of capacities and needs at local level. In Hungary and Spain the size of the typical municipality is much smaller than in South Africa after the demarcation of 2000. In the UK, the median population size of 140 000 is similar to the average size of category B municipalities in South Africa. Municipalities accommodate their different circumstances by ‘drawing down’ their permitted functions as required. The funding must then follow the functions in order to avoid unfunded mandates. As a result, few of the countries experience uniformity in the roles and functions of municipalities or in their funding sources.

This holds an important lesson for South Africa: there should be differentiation of municipalities, depending on their circumstances, based as far as possible on the perceived needs and resources of the municipality itself. This differentiation should find expression both in the functions of the authority and in the sources of its revenue. In designing a package of replacements for the RSC levies, there should therefore be scope for such differentiation.

### 5.2.3 Wide local reliance on local business taxes

Particularly in the Mediterranean countries, there is a strong reliance on the taxation of business. In Hungary the local business tax is the only serious source of revenue for local government. It was introduced at the time of the market transition in 1992, and today constitutes 90% of local tax revenues, or 12% of total revenue.

It is evident that local business taxes are relied on for local revenue in a number of countries. A major strength is the strong relationship between local developmental policies and programmes and the growth of the business tax base. They remain on balance a valuable source of own funding, and strengthen the independence of local government.

## 6. Survey Study of South African Municipalities

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Information on economic circumstances of different municipalities had to be gathered to identify a basket of revenue instruments that municipalities can choose from, and also to provide concrete recommendations on the effective revenue sources for different municipalities. To this end, different municipalities were interviewed with the aim of establishing what their potential revenue bases are as well as the extent of the capacities of these municipalities to collect their own taxes. The sample of municipalities was chosen in order to allow access to as wide a range of viewpoints as possible. The questions were focused on the following areas:

### 6.1 Importance of the Levies

The effect of the abolition of RSC/JSB levies varies across municipalities. As can be seen from Table 7, RSC/JSB levies contributed significantly to these municipalities' own revenue<sup>5</sup>.

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5 *Information taken from financial statements of these municipalities.*

Table 7: Contribution of RSC levies, 2004 – 2006

Municipality	RSC/JSB/JSB income 2004/05	RSC/JSB/JSB income 2005/06	Interest earned on investment	Other income
Nkangala	R140.5 m	R160.3 m	R7.3 m	R255 000 (Agency fees)
Uthungulu	R68.7 m	R74.1 m	R12.6 m	R19.6 m (Trading services)
Frances Baard	R23.8 m	R24.8 m	R5.5 m	R599 712 (Agency fees)

It was concluded that in the larger towns surveyed (e.g. Nkangala and Uthungulu) the levies have been a substantial source of revenue, allowing the municipality to exercise considerable discretion in the allocation of capital and operating funds to its constituent local municipalities.

In some cases this is carried out in a well-ordered and consultative manner (Nkangala). In others it is more haphazard and ad hoc. In the smaller towns (e.g. Vhembe) the levies have never constituted an adequate source of revenue for local needs, and have provided little basis for the exercise of local discretion. We conclude therefore that the correct policy direction is to differentiate between the well capacitated and poorly capacitated municipalities. This differentiation should be reflected in the revenue sources provided (Bahl and Solomon, 2000).

## 6.2 Powers and Functions

Local government respondents stressed the importance of the principle that revenue assignment should follow the assignment of functions. Municipalities are also of the view that revenue being made available to them for the performance of functions allocated to them should be adequate to cover their expenditure needs. However, there were situations where municipalities were allocated certain functions and no corresponding revenue was made available<sup>6</sup>. These municipalities were compelled to finance those unbudgeted functions. It was concluded that the current alignment between functions and revenue sources is unsatisfactory in respect of both the amounts of revenue and the suitability of the revenue source in terms of local linkages. This lack of alignment is particularly problematic in the cases of the smaller districts with poor revenue bases.

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*For instance, Uthungulu budgeted R2.7 m for disaster management in 2007/08, but there is no direct allocation from government, which is currently a legislative requirement in terms of the Disaster Management Act.*

## 6.3 Alternative Revenue Sources

In discussions with municipalities regarding the criteria to assess local government taxes, all municipalities expressed support for the principle that whatever revenue source is available to them, it should enhance local independence. The literature reveals the following as general criteria for a good local revenue source:

- **Local autonomy:** Tax or surcharge rates should be set and administered locally.
- **Yield:** A tax should be considered only if it makes a significant contribution to the municipal revenue.
- **Collectability:** If the tax cannot be administered or can only be administered at very high cost, the tax should not be considered, regardless of any theoretical advantages it might have.
- **Economic efficiency:** Any economic damage caused by raising revenue should be minimised.
- **Immobility of base:** Local taxes are best based upon assets or activities that cannot easily move to another jurisdiction.
- **Base stability in economic cycles:** Minimise vulnerability of local finances to fluctuations in macroeconomic conditions.

The FFC concludes that the following criteria should guide the choice of revenue instruments at the local government sphere:

- Potential to strengthen local independence.
- Fairness (Equity): Fairness relates to the equitable distribution of the tax burden vertically and horizontally.
- Efficiency: suggesting that municipalities should levy taxes on immobile factors in order to preserve the local tax base in the face of the movement of economic resources between municipal jurisdictions.
- Revenue adequacy: i.e. the tax should be able to match expenditure responsibilities of municipalities.
- Political acceptability.

- Ability of local municipalities to control the key variables: i.e. municipalities should have some discretion to adjust the tax rate.
- Suitability for local collection.

## 6.4 Revenue Bases, both Existing and Potential

Questions were asked to solicit the views of local officials on the potential of existing revenue sources, and to identify which alternative sources have the most potential in the local context.

The following existing and potential revenue sources which could be further enhanced were identified by municipalities: user charges; residential property; commercial and industrial property; property transactions; business turnover; agricultural property; public service infrastructure and tribal land.

It was concluded that the best potential revenue bases are the existing rates base, in particular the value of local business property and the businesses themselves.

Respondents favoured a tax based on local businesses. It was pointed out that the local business tax should accrue to the district local authority and not to where the head-office is situated. The previous dispensation in respect of RSC levies was distorting in effect as the levies generally accrued to metros at the expense of districts. The essence of the local business tax lies in the advantage of it being a local form of revenue earned through business and enterprise within a local authority area of jurisdiction, and ploughed back into the betterment of that region by the local authority.

## 6.5 Assessment Collection and Enforcement Capability

With regard to infrastructure required for the collection of any local tax, municipalities confirmed that existing RSC/JSB infrastructure is already in place for most of them, and remains available, with suitable training, to administer the collection of any local business tax. However, municipalities raised concerns that the powers of inspection in the RSC/JSB Act were inadequate, and that stronger powers would be needed in any new legislation, combined with more co-operation from the SARS.

It was concluded that local municipalities considered their involvement in local administration to be important and believed that they had the structures and capacity to be suitably involved. Of crucial concern is the legal framework within which the administration takes place.

## 6.6 Reactions to a List of Proposals

Municipalities were given a list of proposed revenue instruments and asked to respond to each. The list was selected from a range of instruments under current discussion, with some more controversial additions in order to extend the potential range of responses. It included the following revenue instruments:

- Special Rate on Property Tax for District Councils (controversial).
- Arrangements for both District and Local Councils to impose rates on properties within their jurisdictions (controversial).
- Capital Gains Tax on non-primary residence (controversial).
- Local Business Tax collected locally (under discussion).
- Local Business Tax collected by the SARS (under discussion).
- Tax on local sales (business turnover) (under discussion).
- Tax on local payrolls (under discussion).
- Motor vehicle tax (under discussion).

Officials interviewed were given an opportunity to reflect on these revenue instruments and suggest what would be most appropriate for their municipality, given the economic circumstances, the tax base and the capacity they currently have. Municipalities were also given the opportunity to suggest any other revenue instrument(s) that were not included in the list mentioned above. One proposal put forward by municipal officials was a surcharge on the national fuel levy, part of which should be allocated to local government as an inter-governmental transfer. This is perceived to be a productive and apparently trouble-free revenue source, despite the fact that it fails to meet the main criterion of supporting local independent decision-making. In general, the best sources of revenue for local

government are property taxes (rates) and user charges for local utilities. Municipalities are already levying property taxes and user charges and there was agreement that these should be used to their maximum before other sources are contemplated.

## 7. Conclusion and Recommendations

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It is important that reforms to the fiscal framework of local government should ensure that the fiscal autonomy of municipalities is not compromised but enhanced.

The FFC recommends that, in light of the disestablishment of the RSC/JSB levy which formed a significant source of municipal revenue, the replacement revenue source for municipalities should be a tax that:

- Enhances the fiscal autonomy and discretion of local governments.
- Strengthens the accountability of local government regarding the administration and use of the proposed tax base.
- Yields an adequate and buoyant revenue stream for municipalities in the face of cyclical instability and does not disturb the macroeconomic balance.

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## Annexure: Schedule of visits

Municipality	Date	Interviewee	Position
Eden DM	14/09/07	Mr Deon Lott	CFO
Gert Sibande DM	17/09/07	Mr Singh Mrs Magda Gerber	CFO Deputy CFO
Frances Baard DM	19/09/07	Mr Thabo Nosi Mr Hannes van Biljoen	Municipal manager CFO
Uthungulu DM	25/09/07	Mr BB Biyela Mr Naidoo Ms K Swift Mr F Naidoo Mr D Lubbe	Municipal Manager Deputy Mayor Deputy CFO (Revenue) Manager: Budget Office Deputy Municipal Manager
Nkangala DM	08/10/07	Mr H Lala Mr M Maluleke Mr T Strydom	CFO Deputy CFO Assistant Manager: Finance
Nelson Mandela Bay Metropolitan Municipality	10/10/07	Adv. JG Richards	Municipal Manager
Vhembe DM	06/12/07	Mr David Mafumadi Mr Muthotho Sigidi Mr Kent Nemanama	Acting CFO Municipal Manager Manager: Revenue



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