



For an Equitable Sharing of National Revenue

The background features a large, abstract geometric pattern. It consists of thick white lines forming a grid of irregular polygons that recede into the distance, creating a sense of depth. A large, solid yellow shape is positioned in the lower-left quadrant, partially overlapping the white grid.

2013/14
SUBMISSION FOR THE
DIVISION OF REVENUE
FINANCIAL AND FISCAL COMMISSION

FINANCIAL AND FISCAL COMMISSION

Submission for the 2013/14 Division of Revenue

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FOREWORD

This Submission for the 2013 Division of Revenue is made in terms of Section 214(1) of the Constitution of the Republic of South Africa (1996), Section 9 of the Intergovernmental Fiscal Relations Act (1998) and Section 4(4c) of the Money Bills Amendment Procedure and Related Matters Act (Act 9 of 2009).

South Africa is trapped in a cycle of modest growth, high inequality and record unemployment. With unemployment at unprecedented levels, the stakes are high. As the main weapon at government's disposal, fiscal policy is where the battle against very high unemployment in South Africa will be won (or lost). To help government and communities, this Submission contributes by bringing forward the frontiers of knowledge and developing recommendations, to enhance the capacities of policy makers to implement innovative policy initiatives that enhance economic development. To gain greater insights into how the intergovernmental relations policy broadly affects economic development, and in particular the equitable distribution of public resources, this year's Annual Submission is based on the theme:

"Moving People Out of Poverty: Supporting Innovation in Intergovernmental Financing"

This Submission is informed by rigorous research into major cross-cutting issues, which range from job creation, to e-education, higher education, disaster management, climate change management, revenue and expenditure assignments and economic growth, capacity, and gender issues in budgeting. In line with the Commission's mandate, the Submission highlights the impact on the poor of emerging trends in intergovernmental relations and government's fiscal policy stance in an increasingly uncertain global economic environment. As powers are increasingly devolved to the sub-national governments, a central question remains: to what extent do the IGR systems support poverty eradication and what can public and private interests do about the marginalisation of the poor? Can innovative investments, scaled-up successful projects and new institutions be designed to ensure inclusion and help manage the negative consequences of disparity and deprivation? All spheres of government have an important role to play in South Africa's efforts to promote inclusive growth and development. Their role may be vital for attaining the Government Strategic Outcomes and Millennium Development Goals which agree on the importance of advancing human development and achieving a country with less poverty.

The Commission would like to express its sincere gratitude to all the stakeholders that have provided inputs at key points during the process of compiling the recommendations, the Minister of Finance for his continued support, the Chairpersons of the various Finance and Appropriations Committees and their members at both National and Provincial government, the SALGA technical team for their assistance and the staff and technical advisers of the Commission.

We, the undersigned, hereby submit the Financial and Fiscal Commission's recommendations for the 2013 Division of Revenue in accordance with the obligations placed upon us by the Constitution of the Republic of South Africa.

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Acting Chairperson/Chief Executive
Ms Lucienne Abrahams
Ms Tania Ajam,
Mr Krish Kumar
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Ms Nelisiwe Shezi

For and on behalf of the Commission



Mr Bongani Khumalo
Acting Chairperson/Chief Executive
Financial and Fiscal Commission

Date: 25 May 2012

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ASD	Alternative Service Delivery
AsgiSA	Accelerated and Shared Growth Initiative for South Africa
BUS	Business and Management
CBA	Cost Benefit Analysis
CES	Constant Elasticity of Substitution
CGE	Computable General Equilibrium
CHET	Centre for Higher Education Transformation
CSR	Corporate Social Responsibility
DAFF	Department of Agriculture, Forestry and Fisheries
DoBE	Department of Basic Education
DCoG	Department of Cooperative Governance
DEA	Department of Environmental Affairs
DMA	Disaster Management Act
DoC	Department of Communications
DoE	Department of Education
DoHET	Department of Higher Education and Training
DRMC	Disaster Relief Management Centres
DSD	Department of Social Development
DST	Department of Science and Technology
ECD	Early Childhood Development
EPWP	Expanded Public Works Programme
FBS	Free Basic Services
FCA	Full Cost Accounting
FEMIS	Further Education Management Information System
FET	Further Education and Training
FFC	Financial and Fiscal Commission
FRA	Fund-Raising Act
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GEAR	Growth Employment and Redistribution
GIS	Geographic Information Systems
GRB	Gender Responsive Budgeting
GVA	Gross Value Add
HEMIS	Higher Education Management Information System
HIV	Human Immunodeficiency Virus

HRD.....	Human Resource Development
ICASA.....	Independent Communications Authority of South Africa
ICT.....	Information, Communication and Technology
IDP.....	Integrated Development Plan
IGDP.....	Integrated Growth and Development Plan
IGFR.....	Intergovernmental Fiscal Relations
IMF.....	International Monetary Fund
IPCC.....	Intergovernmental Panel on Climate Change
KZN.....	KwaZulu-Natal
LED.....	Local Economic Development
MDG.....	Millennium Development Goals
MIG.....	Municipal Infrastructure Grant
MISA.....	Municipal Infrastructure Support Agency
MTBPS.....	Medium Term Budget Policy Statement
NDP.....	National Development Plan
NDMC.....	National Disaster Management Centres
NDMF.....	National Disaster Management Framework
NGP.....	New Growth Path
NPC.....	National Planning Commission
NSFAS.....	National Student Financial Aid Scheme
NWMS.....	National Waste Management Strategy
OECD.....	Organisation for Economic Cooperation and Development
PFMA.....	Public Finance Management Act
PPP.....	Public-Private Partnership
SADC.....	Southern African Development Community
SAM.....	Social Accounting Matrix
SASSA.....	South African Social Security Agency
SET.....	Science and Technology
SETA.....	Sector Education and Training Authority
SPU.....	Special Programme Unit
StatsSA.....	Statistics South Africa
UNDP.....	United Nations Development Programme
Unisa.....	University of South Africa
VAT.....	Value-added Tax

EXECUTIVE SUMMARY

The recent, globally induced recession and its aftermath have resulted in pressure to get the economy moving, to confront the problems of sluggish exports and to lower high unemployment. The economic crisis has highlighted the growing vulnerabilities that arise from the increasing inter-connectedness of economies. Despite originating in other countries, the crisis has had significant negative ramifications for South Africa and is expected to continue to stall the reduction of poverty and inequality. Despite recent modest economic growth and reduced overall levels of national poverty over several years, South Africa is trapped in a cycle of high inequality and extremely high unemployment. Persistent legacy issues associated with apartheid continue to undermine economic efficiency, job creation and economic growth. Empirical evidence suggests that growth has not always led to more and better jobs – or to increased income opportunities – for the vast majority of the poor, particularly women and youth. Furthermore, regional and ethnic variations and inequities continue to exist (geographically as well as across income groups). Clearly, economic growth alone does not guarantee that the poor and the marginalised will participate in, and benefit from, a growing economy. The existing economic structure coupled with the fact that the country's growth centres are operating from an aging industrial-era infrastructure, which is not labour absorbing but highly capital intensive, suggests scope to focus on policy interventions that create conditions for long-term economic development. Very little systematic thinking has been done around how the Intergovernmental Fiscal Relations (IGFR) system should respond to these pressing social and economic issues, which transcend administrative jurisdictions (i.e. municipal or provincial boundaries).

The past two decades have added a new dimension to the challenge facing South Africa, as the emergence of the global knowledge economy results in the structural transformation of economies around the world. New skills and competencies are required in order to enter and thrive in today's labour markets. Economies are becoming increasingly knowledge intensive and technology based, which is leading to new socio-economic (and indeed regional) gaps, between those who have the right skill sets (or have access to the latest knowledge and information) and those who do not. South Africa is lagging behind in identifying and nurturing these competencies and skills. The lack of awareness and understanding of the policy reforms required to respond to the demands of a knowledge economy is limiting the country's ability to meet inclusive growth as set out in its priorities.

The goal of the 2013/14 *Submission for the Division of Revenue* is to propose new insights and options for promoting policies that facilitate inclusive growth. The key hypothesis underlying the approach is that, despite tensions between growth and inclusion, growth can lead to increased economic opportunities for the poor and reduced inequality. The Submission specifically explores what local, provincial and national governments might do to enhance stronger economic development and more employment. The focus is on the IGFR system's instruments that contribute to economic development (of regions), and the transmission mechanisms, and how they unblock structural obstacles to inclusive growth. When looking specifically at the emerging knowledge economy, a key challenge for the intergovernmental system is that the emerging functional economic regions will typically not match the administrative geographic jurisdictions (such as municipalities and provinces) but transcend them in ways that will change dynamically over time. In all this, the aim is to investigate how the different elements of the IGFR system, as well as the different spheres of government, can be used efficiently to address inclusive growth and stimulate innovation¹.

The Submission is divided into three interrelated parts and contains 10 chapters. Part 1 is on *Supporting inclusive growth: jobs, knowledge and regional development*. Part 2 is on *Climate change and environmental sustainability: opportunities and risks for inclusive growth and innovation*. Part 3 of the Submission brings in capacity and equity issues and is entitled *Institutional development for inclusive growth and innovation*. A unifying theme underpinning the three parts is the role of the innovation and knowledge economy in facilitating inclusive development. This is organised around two thematic focuses: (i) enhancing the framework for subnational development and innovation; and (ii) facilitating growth with jobs.

The Submission explores specifically unemployment in general and that of the youth in particular. One way to move people out of poverty is to ensure that the intergovernmental fiscal system supports job creation and regional development. Since the poor are disproportionately affected by disasters and climate change, a pro-poor intergovernmental relations system

¹ Participation and development in innovation affect South Africa unequally. For example, government and university expenditure on R&D is focused almost exclusively in Gauteng (i.e. innovation happens mainly in metros and not as much in district and local municipalities). Given the correlation between lack of innovation and inequality, this has implications for the FFC's intergovernmental mandate.

should mitigate this risk. Finally, the poor also rely mainly on public services. Therefore, they are the hardest hit if the capacities of all spheres of government are not sufficient to ensure that grant allocations etc. are converted to effective delivery of services to those who need them most. Hence, the need is to focus on institutional development and innovation. Gender and capacity enhancement is a cross-cutting theme, with an emphasis on women's economic empowerment. Exploring synergies with climate change, the Submission gradually builds recommendations on issues related to environmental sustainability, and in particular 'green growth', which constitutes the bedrock of sustainable development.

Below is the list of the recommendations of the Commission for the 2013/14 Division of Revenue.

With respect to unemployment and the intergovernmental transfer system, the Commission recommends that government should:

- Re-direct government spending towards those activities that directly or indirectly create jobs through enhancing productivity performance. Activities such as healthcare, durable goods manufacturing, agriculture, community services, and hospitality and food service should also form the basis of much of the expanded infrastructure expenditure plan which traditionally have gone chiefly to construction activities (e.g. building highways and bridges, dams and flood control structures).
- Promote lower-paying positions, which have the highest potential for the most job gains, including those found in the informal service sector (which can help undo the losses felt by groups hardest hit by the recession of 2008–2009).
- Reduce unemployment by addressing factors other than the weak demand for goods and services. This should be done by:
 - Re-designing the state procurement framework to incorporate and grow the informal economy and formal micro-enterprises, e.g. requiring recipients of large government contracts to include an informal sector partner in their tender submissions. In addition, the Department of Performance Monitoring and Evaluation should stringently monitor the outcomes of these contracts.
 - Earmarking government procurement contracts for low-technology or service-oriented contracts (e.g. catering) for informal sector companies or micro-enterprises.
 - Better targeting of supply-side interventions for re-skilling, mobility. These policies could be implemented using mechanisms such as block grants (e.g. transport subsidy for unemployed vulnerable groups (women, youth and the disabled) so that they are better connected to employment opportunities and improving labour market information availability).
- Encourage, particularly through the relevant Departments of Labour and Performance Monitoring and Evaluation, those companies that are yielding the highest employment levels both directly and indirectly. This would entail:
 - setting up an employment performance-reward scheme for enterprises that excel in job creation
 - publicising the scheme widely and giving it a high profile.
- Develop and implement credible job plans for each sphere of government. To unblock prisoner's dilemma scenarios and work towards amicable social compacts:
 - Provide clarity on permitted and non-permitted economic activity through the job plans
 - Ensure coherence and coordination of the plans across boundaries
 - Ensure collaboration across a broad set of actors – not only employers, but also unions, economic development agencies, Sector Education and Training Authorities (SETAs), secondary schools, colleges, universities, vocational training centres and business support providers and
 - Ensure the plans are used in the budget process
 - Use the criteria proposed in Box 1.1 in Chapter 1 to evaluate respective job plans.

With respect to financing e-education and achieving policy goals in public ordinary schools in South Africa, the Commission recommends that:

- The e-education policy should be funded as a part of government's operating budget for the programme, just like teacher salaries, school buildings and other teaching aids.
- A well-structured, inter-governmental financing mechanism should be established with explicit guidelines to provincial departments of education regarding the budget line items that must be prioritised in their annual budget allocations, as well as those budget line items that will be contained in the national budget allocation. Decisions on the particular line items can be informed by a review of policy documents and various studies conducted on e-education over several years and by a broader review of the available knowledge of e-education financing across the globe.
- The national and provincial education sector requires firm and expert guidance on designing e-education, and such expertise should relate to e-education, not merely to information technology. In order to promote advances in e-education, it may be necessary to consider the establishment of an e-Education Commission, constituted of government officials and e-education specialists to act as an advisory body.
- Limited data is available on e-education expenditure and specifically on e-learning expenditure, despite clear policy goals adopted in 2004 and targets established for 2013. This should be remedied through reporting on e-learning budget allocations and expenditure and, more broadly, on e-education in the annual reporting process. Such data can inform national and provincial planning, curriculum design and the development of education human resources. It can also inform the work of an e-Education Commission, enabling such a structure to advise government effectively. Furthermore, explicit reporting on financial data will enable a better analysis of the strengths and weaknesses relevant to achieving the policy goals of the White Paper on e-Education. As a baseline, the data set out in the Table 2.6 in Chapter 2 would be required.
- In addition to the above, the impact of e-education policy and financing should be continuously assessed, taking into account cross-departmental issues and supporting measures from a range of government departments and relevant public sector bodies (Department of Basic Education, Department of Higher Education and Training, Department of Labour, Department of Science and Technology, Department of Communications, metropolitan municipalities, ICASA and others).
 - Such assessment would consider both school-level and economy-wide impacts. From an analytical perspective, the requirements would be twofold:
 - To understand how e-education affects students' decisions about acquiring ongoing skills in the education system (econometric analysis coupled with case studies, repeated over time);
 - To consider interactions between e-education and the rest of the economy. Quantifying these interactions allows the value of various policy and financing options to be compared.
- When the delivery agreement on *Outcome 5: Build a skilled and capable labour force* is next reviewed, greater emphasis should be given to overseeing the implementation of the e-education policy, noting in particular the sub-output "Enhance research, development and innovation in human capital for a growing knowledge economy". Most of the relevant departments are already signatories to the agreement, and the delivery forum can be expanded to include other relevant role players such as those mentioned in (4) (b) above. Thus, using existing coordination structures, progress on e-education can be reported to Cabinet on a quarterly basis, thereby raising the profile of e-education.

With respect to funding higher education and the post-school system as a whole, the Commission recommends that:

- Government should introduce a differentiated funding framework for a differentiated public university system, by shifting from a unitary system to three funding frameworks – one for each cluster.
 - For Cluster 1: this funding framework would reward further advances in equity, development and improved performance in the input and output indicators;

- For Cluster 2: this funding framework would reward improved performance in the input and output indicators, and moving up into Cluster 1; and
- For Cluster 3: this funding framework would reward improved performance in the input and output indicators, and moving up into Cluster 2, pushing for performance in order to win rewards.
- In order to better understand and analyse the performance and funding of the further education training (FET) sector, government should expand the HEMIS system to incorporate FET sector data, or introduce a parallel system to collect relevant data for analysis of the FET sector, a FEMIS (further education management information system). Readily available financial, funding and performance data is needed to inform a future funding framework and annual funding allocations, and to support decision making by FET colleges.

With respect to addressing impacts of climate change in rural areas, the Commission recommends that:

- The Department of Environmental Affairs (DEA) and the National Disaster Management Centre (NDMC) should develop a municipal vulnerability index and disaster-risk modelling tools to assist municipalities assess their vulnerability to climate change and non-climate change disasters and determine associated contingent liabilities.
- The DEA and NDMC should:
 - Develop a standardised Vulnerability Index that government can adopt as the basis for:
 - i. identifying and monitoring municipal jurisdictions and municipalities that are most vulnerable to disasters;
 - ii. coordinating and providing targeted national and provincial support to vulnerable municipalities;
 - iii. enabling improved planning and risk management by all municipalities.
 - The vulnerability index, at a minimum, should take into account the exposure, sensitivity and adaptive capacity of an area to disasters. Suggested indicators for these criteria are provided in the Technical Report that accompanies this Submission.
 - Standardise and use disaster-risk modelling techniques to project the potential damage of disasters on human life, livelihoods, infrastructure and property. For example, the estimated number of people who will become homeless, the number of buildings that will have to be rebuilt and the cost of reconstruction operations;
 - Develop and implement a government-wide national climate change programme, which includes monitoring climatic and oceanic parameters, ecosystem health (rivers, wetlands, estuaries, marine and terrestrial systems) and socio-economic variables.
- The Department of Cooperative Governance (DCoG) should adjust the objectives, terms and conditions, and procedures of the MIG (municipal infrastructure grant) to:
 - Permit municipalities to use grant funds for climate adaptation and mitigation investments that involve creating, rehabilitating or modifying municipal infrastructure and,
 - Ensure that these investments prioritise and directly address the vulnerabilities faced by poor households.
- The DCoG should restructure the Special Municipal Infrastructure Grant component of the MIG in order to:
 - Allow municipalities to acquire or rehabilitate ecological infrastructure (such as coastal dunes or mangroves that provide natural protection from excessive storm surge and other weather events), provided that the return on investment is greater than a comparable engineering solution;
 - Provide a funding window for rural municipalities to receive resources from the Green Fund and similar global resources (e.g. the World Bank Clean Technology Fund and the newly established Green Climate Fund) in accordance with their terms and conditions.

- The Department of Agriculture, Forestry and Fisheries (DAFF) should expand support services for small-scale farmers to encourage them to adopt climate-resilient farming strategies aimed at adapting and mitigating the projected local effects of climate change through:
 - Advice on diversification, mixed-cropping, drought-resistant crops and efficient irrigation systems;
 - Improved access to financial services and instruments (such as micro-credit and weather-based insurance) that can help lower their risk exposures.

With respect to alternative financing mechanisms for disaster management, it is recommended that:

- The Minister for Cooperative Governance and Traditional Affairs should streamline guidelines and gazette uniform standards governing and guiding the classification, declaration, assessment and response to disaster events in terms of the Disaster Management Act (DMA) and National Disaster Management Framework (NDMF). The absence of a standardised and coordinated approach to damage assessment and relief provision to people affected by disasters results in unnecessary duplication of effort and funding across government and delays in response and rehabilitation efforts.
- The DCoG should, through the DMA, require municipalities, starting with the most vulnerable, to incorporate in their Integrated Development Plans (IDPs) disaster-risk reduction evaluations, strategies and measures, including:
 - The development and enforcement of *land-use planning* and management measures so as to reduce infrastructure being built on seismic fault lines, in coastal regions subject to storm drainage and river shorelines subject to frequent floods;
 - The development and enforcement of *buildings standards* (or retrofitting requirements) to ensure adequate robustness against earthquakes or cyclones.
 - Engineering interventions to mitigate the degradation of environmental assets (such as soil erosion) through the creation of *dams* for flood control, *fire breaks*, and *sea walls* to break storm surges; and
 - Financing strategies for these measures.
- Government should develop a policy framework for municipal disaster risk financing that:
 - Differentiates between municipalities based on their vulnerabilities and fiscal capacities;
 - Leverages private resources to fund long-term disaster risk management by combining private risk financing, intergovernmental grant financing (including the Green Fund) and municipal own revenues;
 - Encourages and incentivises, where appropriate, the use of innovative market-based financing of disaster relief and recovery. Instruments that can be considered include sovereign insurance, risk pooling, reinsurance, index-based insurance, weather derivatives, micro-insurance, and catastrophe bonds.
- The National Treasury should require that environmental management and vulnerability objectives are explicitly incorporated into the design of existing key municipal grant programmes. These objectives should promote disaster risk-reduction methods (*ex ante* approach) and enhance municipal resilience to climate change through mitigation and adaptation methods. They should:
 - Include the Integrated Housing and Human Settlement Development Grant, the Urban Settlements Development Grant, the Municipal Infrastructure Grant, the National Electrification Grant, the Public Transport Infrastructure and Systems Grant and the Regional Bulk Infrastructure Grant;
 - Incorporate a statement of environmental and climate resilience objectives in each grant programme, together with measurable indicators;
 - Prioritise the most vulnerable municipalities when determining the horizontal division of available resources in each programme;

- Provide for beneficiary municipalities to conduct appropriate climate-resilience evaluations on existing infrastructure over the medium term, subject to disaster risk-reduction methods being incorporated in respective IDPs;
- Be accompanied by capacity support to and engagement with the most vulnerable municipalities to ensure that they are able to identify and address disaster risks comprehensively.

With respect to financing of waste management, the Commission recommends that:

- By the end of the 2015/2016 financial year, government should phase in full cost accounting (FCA) for solid waste management within municipalities. To achieve this goal:
 - Government should develop specific FCA guidelines for integrated municipal solid waste management that addresses the specific and inter-related environmental and service delivery needs of the sector, within the framework of activity-based costing that the National Treasury is introducing.
 - Government should develop a capacity-support programme to implement the guidelines that allows a phased introduction of FCA starting with high-capacity municipalities that face major solid waste management challenges.
- Government should take greater advantage of the opportunities for job creation in the solid waste sector, by incentivising municipalities to create 'green' jobs through labour-intensive service delivery. In particular:
 - The Department of Public Works should review the Expanded Public Works Programme (EPWP), which may negatively impact on the ability of municipalities to support job creation in the sector due to the comparatively higher capital costs associated with solid waste collection and recycling activities;
 - The Department of Cooperative Governance (DCoG) should review the funding conditions of the Municipal Infrastructure Grant (MIG) to ensure that local-level municipal waste management assets are eligible for financing.
 - A portion of resources from the recently established Green Fund should provide transitional financial support to municipalities that introduce innovative, labour-intensive waste collection, reduction and recycling mechanisms to areas where services are currently inadequate. These might include developing small waste collection and recycling contractors, or community cooperatives to manage waste buy-back centres and materials recovery facilities;
 - The DEA should develop municipal guidelines and regulations that support community involvement in waste management activities through community-based trusts and partnerships.
- The DEA should delay implementing the regionalisation of solid waste landfills policy until the fiscal risks and benefits for municipalities are better understood, and adequate decision-support measures for municipalities are in place. In particular:
 - The DEA should commission a full cost-benefit analysis of regionalisation options, to ensure appropriately scaled projects within a fiscally sustainable licencing and service delivery framework;
 - The DEA should develop adequate decision-support tools to guide municipal choices on appropriate investments and the associated governance frameworks, including the use of multi-jurisdictional Municipal Service Districts where appropriate.
 - The Commission notes its availability to assist the DEA, on request, to explore further the policy options and risk mitigation tools associated with regionalisation proposals.

- Government should emphasise the expansion of access to solid waste services to poor communities, while strengthening the policy framework for the provision of refuse removal free basic services (FBS). In particular:
 - The DCoG should review the MIG guidelines to ensure that (i) adequate funding for solid waste assets is available to municipalities with weaker fiscal capacity; and (ii) expenditures on specialised vehicles and equipment required for solid waste management services are eligible for financing;
 - The DEA should prioritise support to municipalities seeking to expand services to poor communities using labour-intensive service delivery, including investigating potential fiscal instruments that might be incorporated with the EPWP or Green Fund;
 - The DEA should commission a review of the refuse removal FBS policy, with a specific focus on its impacts on (i) expanding and sustaining services to poor households; (ii) the affordability and quality of service to poor households; (iii) environmental impacts, such as the extent of reduction in illegal dumping.

With respect to alternative aggregate revenue and expenditure assignments for provinces and municipalities, it is recommended that:

- Key principles of national strategies such as the New Growth Path (NGP) document and National Planning Commission's (NPC) Vision for 2030 need to permeate provincial and local strategies. This can be achieved by translating these principles into complete sub-national strategies with full details on sustained implementation, followed by provincial and local governments' commitment to achieve the goals identified in the strategies.
 - Key components for sub-national government to consider are capital and labour inputs, and multifactor productivity. Provincial and municipal governments should continue to invest in physical and human capital, focusing specifically on issues such as lack of adequate skills and physical infrastructure needs (maintenance, better location, etc.). In addition, effective management and accountability mechanisms should be aimed at increasing multifactor productivity.
- The results reported in this chapter imply that economic development powers are well-placed at the provincial level, while economic growth powers could be better placed at the municipal level.
- Municipalities, and particularly non-metropolitan municipalities, should be encouraged to play a more direct role in economic growth. This can be achieved by:
 - National government assigning greater revenue and tax handles to the municipalities than is presently the case;
 - Reassessing all elements to support the growth-enhancing roles of municipalities, when reviewing the fiscal framework. These elements would include the local equitable share (LES), local own-revenue sources (e.g. local business taxes) and conditional grants.
 - Such re-assessment should also ensure a better balance between equity and growth objectives in the local government fiscal framework.
- Municipalities are not necessarily doing a good job of collecting revenue from the public. Hence, municipalities need to improve their revenue-collection efforts, as these can contribute positively towards economic growth.²
 - It is well known that in South Africa some municipalities (for example, metropolitan municipalities) are raising substantial revenues, while other municipalities are still very dependent on transfers from national government.
 - Issues that need to be addressed include weak capacity within local administrations, small tax bases, delivery of free basic services requiring high municipal expenditures (that can only be financed through national transfers), and a lack of 'payment culture' for services.

² In its 2012/13 Annual Submission, the Commission had made some recommendations aimed at improving revenue performance of municipalities in South Africa which are still relevant. These include (among others) regular updating and maintaining of data and information on indigents, outsourcing of functions, establishing municipal service districts and expanding the powers of municipalities to exercise more punitive recovery measures.

With respect to alternative service delivery arrangements (with a focus on municipal agencies), the Commission recommends that:

- Government's approach to regulating agency formulation should balance maximising the potential benefits of utilising an alternative service delivery (ASD) arrangement with minimising the attendant risks. In the quest to improve performance and efficiency, ASD arrangements may (in appropriate circumstances) provide a creative way for municipalities to deliver services, particularly against the backdrop of limited financial and human capital resources. Therefore, the regulatory framework for municipal entities should ensure that:
 - The use of an ASD arrangement is contingent on a demonstrably sound business case for its establishment and sustainable operation;
 - Unnecessary, costly and time-consuming regulations are avoided. To this end, government should review existing legislation, specifically Section 77 and Section 78 of the Municipal Systems Act and Section 33 of the MFMA, which places onerous demands on municipalities wanting to use an ASD arrangement.
- Establishment of municipal agencies, or any ASD arrangement, should be linked to the parent municipality having an adequate level of performance and effective oversight ability. Determining whether performance is adequate or not should be linked to the audit outcomes of the parent municipality. Government should discourage the creation of agencies where the parent municipality is manifestly weak; for example, if the municipality is found to have a severely qualified, adverse or disclaimed audit result.
- Legislation that requires municipal entities to make public details of their performance and plans (as required in terms of Section 127(5) (a) (i) of the MFMA) should be strictly enforced, and non-compliance reported to the Auditor-General. This is necessary not only for compliance but also for greater transparency of agency performance, thereby enabling better monitoring and oversight by parent municipalities and treasuries.
- Government should establish a central portal of financial and performance-related information on municipal agencies. Such a facility could also serve as a peer-learning mechanism through which success stories are shared. Municipalities and agencies could also use the information to benchmark their performance, while greater public availability of this information will improve oversight and transparency. National government should take a more proactive approach, perhaps through the National Treasury's PPP Unit, to advising municipalities, especially lesser resourced ones, on the applicability of using an ASD arrangements in different instances.
- Government (particularly the National Treasury's PPP Unit) should put together a list of criteria to assist municipalities in deciding whether a sound business case for the creation of entities exists. The criteria should:
 - Establish whether benefits exceed potential costs;
 - Ensure potential risks are mitigated;
 - Focus on aspects such as measurability and asset specificity of the service in question.

With respect to the dynamics of capacity challenges at local government level, the Commission recommends that:

- Capacity-building efforts should be comprehensive and sustainable, instead of quick-fix, short-term solutions. To this end, it is necessary to:
 - Establish a single capacity-support agreement per municipality. This agreement should stipulate all actions to be undertaken by national and provincial government and other relevant role-players. Measurable objectives for capacity-development programmes should be clearly defined (relative to credible baselines) and independent exit evaluations should be compulsory.
- Environmental constraints, specifically with respect to the allocation of powers and functions and the formulation of conditional grants, may need to be simultaneously adjusted.
- With respect to capacity-related conditional grants:

- The grants' conditionality must commit municipalities to specific, independently verifiable capacity and performance improvements.
- Grants should be redesigned to consider the quality of capacity-building interventions, instead of having a narrow quantitative focus.
- An external, objective evaluation dimension should also be included in capacity grant requirements
- Capacity-building interventions should holistically coordinate individual, organisational and institutional-level dimensions of capacity building in a particular municipality over the medium term. Instead of focusing disproportionately on training, support programmes should include technical support for new systems, business process redesign and change management, based on an assessment of the relevant municipality:
 - Individual: officials must have the necessary technical skills, knowledge, experience and competencies to fulfil their particular functions. This means appointing the correct person to the correct post (adherence to recruitment, selection and any minimum competency requirements) and ensuring that officials then receive training (both accredited and non-accredited) relevant to their areas of responsibilities, to ensure continued workplace effectiveness..
 - Organisational: municipalities should be supported in compiling realistic IDPs, implementing functional and effective performance management systems and knowledge management policies, to enhance organisational memory and data management, and to ensure accurate and relevant reporting. Critical vacancies must also be filled and workable staff-retention strategies implemented. Skilled individuals must be appointed to vacant positions for which affirmative action candidates cannot be found, and audits should be conducted of municipal positions that fall outside the approved organisational structures.
 - Institutional: greater differentiation and flexibility is required in the design of the local government fiscal framework. A differentiated approach is needed for the assignment of functions to municipalities, based on their capacity to effectively manage them. Once a municipality has proved its ability to provide a specific basket of services, decisions can be made regarding expanding the range of services provided by such a municipality. Where service delivery failures persist, such services should be removed from municipalities. Furthermore, the establishment of a coordinated capacity-building function across all local government departments is recommended. These actions must be complemented by simplified, streamlined and coordinated reporting requirements for local government and clearly defined roles and responsibilities for national and provincial departments. To assist rural municipalities, the value and practicality of an assistance programme should be explored, aimed at attracting and retaining scarce skills in these areas (similar to the scarce skills payments made to doctors in rural areas).
- To improve municipal capacity, the medium and senior management of municipalities need urgently to be stabilised, through greater insulation from political interference in the retention of skills and in the recruitment process. The link between actual performance of managers and the renewal (or not) of performance contracts should be strengthened. The human-resource function within municipalities needs to be proactive in identifying possible incentives for retaining scarce skills and ensuring that roles and responsibilities are clearly defined within municipal job descriptions. This challenge will also only be solved through increasing the pool of available people to fill vacant positions.
- Minimum competencies as entrenched in the MFMA should be enforced so as to ensure that appropriate technical skills are in place. Based on field work conducted by the Commission, the following functions require particular attention: revenue management, supply chain management, sewerage and water treatment plant operators, road maintenance supervisors, health inspectors and planning and project managers.

With respect to assessing gender-responsive budgeting in the local government, the Commission recommends that:

- National and provincial governments should:
 - Run gender budgeting pilots in a few municipalities first and evaluate results before wider application. These pilots could be linked to ensuring gender disaggregated data for key conditional grants as part of the grant framework in the Division of Revenue Act.
 - Ensure municipal IDPs institutionalise gender planning by sector (e.g. water and sanitation, LED etc.) and include gender disaggregated performance indicators and targets.
 - Provide gender budgeting good practice guides and toolkits.
 - Provide guidelines for collecting sex-disaggregated data for budgeting processes and ensure that municipalities have the capacity to analyse budgets from a gender perspective.
- Local government should:
 - Institutionalise gender-responsive budgeting process linked to IDPs.
 - Build capacity for gender mainstreaming and GRB at local level.
 - Ensure gender-responsive appropriations and budget allocations.
 - Ensure gender-sensitive public participation and consultations at local level.

Part 1

SUPPORTING INCLUSIVE GROWTH: JOBS, KNOWLEDGE AND REGIONAL DEVELOPMENT

Technological change and transportation improvements have led to the organic formation of large, urban-centred regions. Yet, political discourse and media reports typically ignore this fundamental transformation of how economic activity is organised, continuing to evoke a rural–urban divide that is often based on landscapes rather than what people are actually doing. Fiscal consolidation, Millennium Development Goals (MDGs), infrastructure, densification, education, housing, healthcare, jobs, transportation and the environment are issues that affect both rural and urban areas. This lack of awareness means that institutional and governance changes rarely reflect the rise of mega-regions across South Africa. Instead of working together, local or rural communities compete with their neighbours for economic development and provision of public services. Very little systematic thinking has been done around how the Intergovernmental Fiscal Relations (IGFR) system should respond to these functional economic regions that transcend administrative jurisdictions (i.e. municipal or provincial boundaries).

Regions can be defined in many ways to reflect particular perspectives. The Commission's view of regions is 'people-centric', which is more appropriate when addressing public service delivery, infrastructure development, planning and economic development. There is a need to understand exactly how regions and regional economies have evolved and the new opportunities and challenges that have emerged. Two aspects of regional evolution are central to the knowledge and productivity necessary for competitiveness. First, as more 'rural' space becomes functionally tied to main urban centres, regional boundaries are in the process of expanding. Second, the effects of the information, communication and technology revolution (ICT) and globalisation have resulted in regions becoming more open, with goods and services being exchanged across more porous borders.

Local production must be globally competitive, and producers and consumers can also create effective worldwide input–output linkages. Consumers have instant access to information about goods, services and prices anywhere in the world. The labour force has ready access to information about global employment opportunities. The result is a regional impact 'multiplier'³: as an increasing proportion of regional income is spent outside the region (and often in other countries), the local multiplier will decrease. Policy-makers need to be aware of the possible complementarities or trade-offs when pursuing growth and redistribution strategies simultaneously (see Chapter 1). The Commission argues that education policies matter here. Policies that increase graduation rates from upper secondary and tertiary education and that promote equal access to e-education help to increase competitiveness and eventually reduce inequality (see Chapter 2 and Chapter 3).

3 Multiplier effects on the economy refer to changes in prices, incomes and employment other than the direct effect of the change in the policy.

Chapter 1

PERSPECTIVES AND PROSPECTS FOR JOB CREATION AND THE INTERGOVERNMENTAL FISCAL RELATIONS SYSTEM

1.1 Introduction

The global economy is going through its worst economic crisis for fifty years, affecting employment and spreading to South Africa. In 2009, South Africa experienced its first economic recession for 19 years. More recently, the economy has been negatively affected by the uncertain global economic climate, in particular because of South Africa's exposure to euro-zone economies through trade and financial markets. Data for early 2010 suggests that unemployment may have peaked and that economic recovery is underway. However, the recovery will not be strong enough to bring the millions of newly unemployed back to work quickly. In 2011, economic growth (in real terms) increased to 3.1%, from 2.8% in 2010, which reflects the ongoing economic recovery since the downturn in 2008. If these projections are confirmed, unemployment will decline slowly but will still be significantly higher at the end of 2011 compared to before the crisis. Current –and projected –economic growth is sluggish and poses a real threat to the targets outlined in the New Growth Path (NGP) and the National Planning Commission's (NPC) Vision for 2030. A major concern is that this sluggish growth and accompanying unemployment will become a longer-term problem, with the unemployed drifting into long-term joblessness or dropping out of the labour force altogether.

These observations suggest that formulation of any future government policy must consider sluggish economic growth, scarce public resources and extreme income disparity. This chapter studies the relationship between job creation and fiscal policy reforms through a labour model embedded within an economy-wide modelling framework. Section 1.2 reviews the facts and myths about the unemployment situation, and Section 1.3 builds a national labour model for South Africa. In Section 1.4, the general implications of introducing alternative policies in such a framework are discussed and how it can assist government to solve problems of job creation, while taking into account fiscal consequences. Section 1.5 summarises the main findings and offers policy recommendations.

1.2 Understanding Causes of Unemployment in South Africa

After more than 19 years, high unemployment persists, and South Africa is still facing the challenge of creating sustainable employment for a growing labour force. The economy's poor performance in creating employment has led to many debates. One is South Africa's capacity to compete globally: high unemployment is a sign of domestic industries' inability to compete with either the high-tech or the low-wage countries. Another is trade and technologies: new technologies and globalisation can explain the massive restructuring of South African industries and consequent job losses. Other debates point to the skills mismatch, to insufficient aggregate demand or to the overly generous social policies that negatively affect employment. In preparing recommendations on an employment strategy, this chapter takes a close look at unemployment drivers in South Africa.

Figure 1.1 shows South Africa's annual gross domestic product (GDP) growth for the period 1990–2010. Growth in South Africa was positive between 1993 and 2008 but became negative in 2009 following the 2008 global financial crisis. Recovery started slowly in 2010, with a growth rate of 2.9%. Despite this mostly positive growth, South Africa's economic growth needs to be more labour intensive (Nattrass, 2000). The policies that accompanied the institutional transformation of 1994 focused on dealing with the high inequality in wealth, income and opportunity in the South African economy (McCarthy, 2005). However, what is needed is increased employment, as almost all of South Africa's household income comes from participating in the labour market, mainly through wages (Nattrass, 1998).

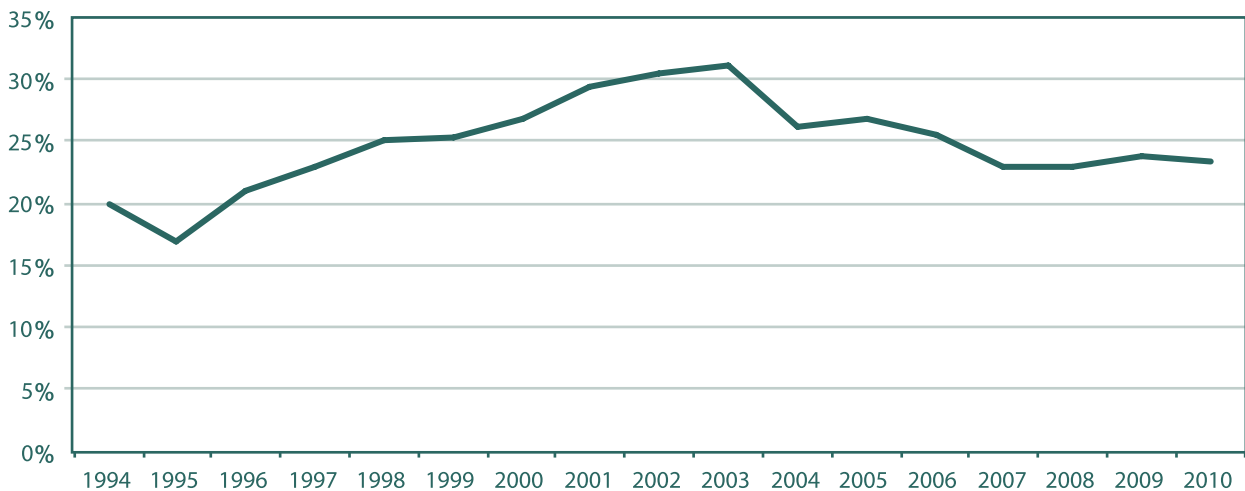
Figure 1.1. South Africa's annual GDP growth: 1990–2011



Source: NYU, 2009; SARB, 2012

As Figure 1.2 shows, unemployment increased from 1994, and from 1996 rates remained stubbornly above the 20% threshold. Although international comparisons of unemployment are fraught with problems, the evidence suggests that South Africa has exceptionally high rates of unemployment.

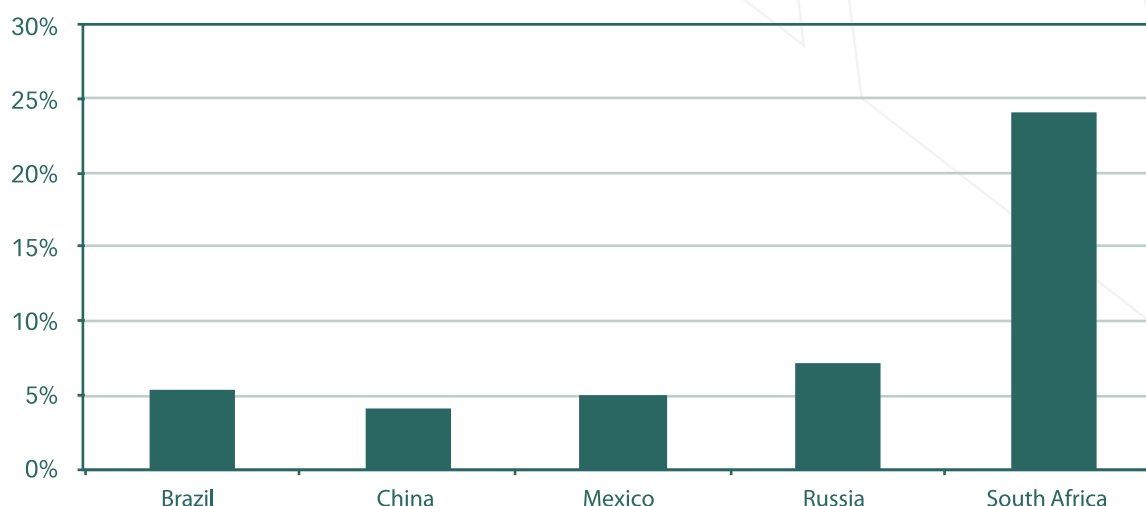
Figure 1.2. South Africa's unemployment rate: 1994–2010



Source: World Bank, 2012; CIA World Fact Book, 2012

Figure 1.3 illustrates that South Africa's unemployment looks abnormally high when compared with other middle-income countries (as classified by the World Bank).

Figure 1.3. Unemployment rate for Brazil, China, Mexico, Russia and South Africa (2010)



Source: *Trading Economics, 2012*

South Africa's inability to handle macroeconomic shocks is a central factor that explains employment developments (FFC, 2010). Over the last 18 years, periods of job growth have been followed by periods of heavy job losses. Jobs were created during the recovery periods but were destroyed by the millions in the downturn periods because of (in part) uncoordinated macro and microeconomic policies. This questions the validity of jobless growth in South Africa since the new democratic dispensation and indeed the links among economic growth, job creation and unemployment. Between September 2001 and September 2008, as economic growth continued and accelerated, as many as 2.5 million new formal- and informal-sector jobs were created in South Africa (The Presidency, 2010, p 20). The period of 'jobless growth' during the early and mid-1990s represented an aberration: since the Second World War, employment growth often lagged output growth in South Africa, but jobless growth has been rare (Hodge, 2009, pp 497–498).

Research suggests that supply-side and demand-side factors have hampered the ability of the South African economy to create enough jobs. South Africa's labour force has grown rapidly, especially during the second half of the 1990s (Hodge, 2009, pp 499–500)⁴. The labour force has expanded much more rapidly than the working-age population (Kingdon and Knight, 2007, pp 816–819), which implies that many more people are participating in the labour force.⁵ The increase in participation rates – which has been particularly noticeable among African women – is ascribed to actual and perceived improvements in employment opportunities following the scrapping of apartheid-era restrictions on the mobility of Africans (Burger and Woolard, 2005, pp 5–8; Kingdon and Knight, 2007, pp 816–819). Other factors include the introduction of employment-equity legislation, rising education levels, and rapid growth in the number of households because of changes in household structure and HIV/AIDS-related deaths among household heads.

Mismatches between labour supply and demand have constrained the labour intensity of economic growth. Most notably, since 1970, the economy has undergone considerable structural change, with the primary sectors (agriculture and mining) shedding labour and new job opportunities arising in tertiary sectors such as finance, wholesale and retail trade, and community, social and personal services (Banerjee *et al.*, 2009, pp 723–724). These changes have contributed to increased demand for more skilled labour and a fall in demand for unskilled labour, which has markedly worsened the employment prospects of the large, unskilled portion of South Africa's labour force (Burger and Woolard, 2005, pp 16–18).

Table 1.1 confirms the shift since 1995 in the skills composition of employment, from unskilled and semi-skilled to skilled labour. Between 1995 and 2008, only 17.7% of the new jobs created required unskilled workers, and by 2008 only 22.8% of all jobs were classified as 'unskilled'. Of the new jobs created between 1995 and 2008, 46.4% were in the semi-skilled category, but this category's share of all jobs also decreased. In contrast, jobs requiring skilled workers increased from 21.8% in 1995 to 26.1% in 2008.

⁴ After 2000, labour-force growth slowed sharply, averaging only 0.7% per annum from 2000 to 2007 (Hodge, 2009, p 500).

⁵ Kingdon and Knight (2007, pp 816–819) point out that immigration also contributed to rapid labour-force growth. However, as much immigration has been informal or illegal, the extent of this contribution is difficult to quantify.

Table 1.1. The skills composition of employment (1995–2008)

Year	Percentages		
	Unskilled	Semi-skilled	Skilled
1995	25.1	53.1	21.8
2004	23.4	52.7	23.9
2008	22.8	51.0	26.1
Job growth (1995-2008)	17.7	46.4	35.9

Source: National Treasury, 2010, p 41

The relationship between labour-market institutions and outcomes is a controversial aspect of the unemployment debate in South Africa. Since 1995, government has promulgated a series of laws that have substantially changed the labour-market institutions.⁶ Some economists (e.g. Arora and Ricci, 2005, pp 25–30) have argued that this institutional framework – including the laws governing collective bargaining processes and working conditions – has in part contributed to high unemployment in South Africa by making the labour market inflexible. However, having invested much political capital in establishing this framework, the South African Government has long resisted calls for reform.

Analysis of the South African labour market has highlighted two additional constraints to overcoming the unemployment problem. First, the legacy of apartheid-era spatial planning (which separated black job seekers from job opportunities) and residual vestiges of racial discrimination may undermine the effectiveness of employment searches in the labour market (Banerjee *et al.*, 2009, p 734). Second, young people seem to experience exceptional difficulty finding their first jobs and are affected particularly harshly by the scarcity of jobs.⁷ When making hiring decisions, firms apparently put a high premium on work experience, possibly as a screening mechanism in an environment where virtually all younger workers now have at least ten years of formal education (Banerjee *et al.*, 2009, pp 736–737).

Another notable feature of the South African labour market is the small size of the informal sector (Kingdon and Knight, 2004, pp 391–392). In contrast to most developing countries, the informal sector appears not to have expanded rapidly to compensate for the scarcity of formal-sector jobs.⁸ For example, in the fourth quarter of 2009, about 2.1 million workers were active in the non-agricultural informal sector, whereas 5.8 million were either openly unemployed or classified as discouraged work-seekers (StatsSA, 2009, vi).

1.3 Models and Data for Analysing Job Creation Policy

The facts and analysis presented above are about the past and to some extent the present. What about the future? In preparing recommendations for an employment strategy, future trends in the economy and the labour force need to be taken into account. Therefore, the analysis looked at

- (a) the role of current policy on future employment,
- (b) the role of new technology, and
- (c) changing demographic conditions.

The Commission developed a methodology to estimate the potential effects of policy changes on employment. The modelling framework, which is described in greater detail in the accompanying Technical Report, is summarised in Figure 1.4.

6 The most important pieces of legislation were the Labour Relations Act (1995), the Basic Conditions of Employment Act (1997), the Employment Equity Act (1998) and the Skills Development Act (1998).

7 According to the National Treasury (2010, pp 51, 42), more than 3 million young people do not work, and 73% of the unemployed are aged 15–35 years.

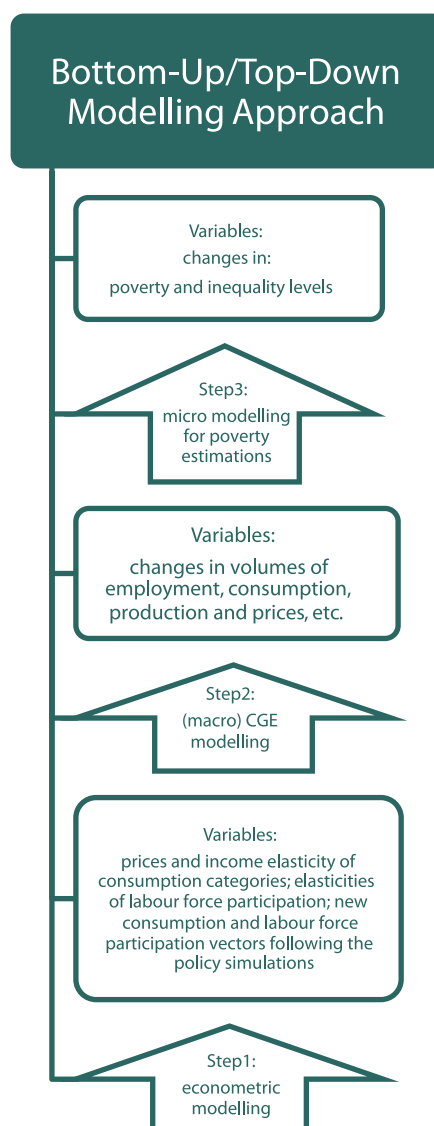
8 According to Heintz and Posel (2008), a comparison of Statistics South Africa and International Labour Organisation data for 2006 confirms that the ratios between non-agricultural employment in the informal sector and total employment were markedly higher in Latin and Northern American middle-income countries such as Argentina (36.1%), Brazil (40.6%), Mexico (38.0%) and Paraguay (50.1%) than in South Africa (18.5%). Data on the size of informal sectors in sub-Saharan African and Asian developing countries also suggest that the informal sector in South Africa is unusually small (cf. Kingdon and Knight, 2004, pp 391–392).

Conceptually, the modelling process starts with **Step 1**, which consists of micro-simulation modelling. Here the following variables were estimated and fed into the Computable General Equilibrium (CGE) model:⁹

- i. Estimated consumer prices and income elasticities, and simulation of the effect of a change in government policy on consumption patterns.
- ii. Estimated model for labour force participation, and simulation of the effect of a change in government policy on labour force participation.

Once the relevant changes have been estimated, they are transmitted to the macro CGE model. This constitutes **Step 2** of the modelling process. This model simulates changes in different variables (e.g. volumes of consumption and production, prices and employment), which can then be inserted into the micro module in order to produce changes in poverty and inequality following the reform in government policy (**Step 3**).

Figure 1.4. Modelling framework



⁹ A CGE model is a multi-market model based on real-world data of one or several economies or regions. It simulates a working economy by incorporating various institutional and structural characteristics that simple analysis fails to capture. The prices and quantities of all goods and factors are determined simultaneously in every market – hence G for ‘general’ – by the need to equate supply with demand – hence E for ‘equilibrium’. The system of equations is simultaneously solved using a numerical database arranged in a matrix format called a Social Accounting Matrix (SAM), and a computer with appropriate software – hence C for ‘computable’.

For the purpose of this chapter, the labour force is disaggregated into occupations. Integrated economic accounts from Statistics South Africa, which splits the labour force according to occupation and population groups, are used after ensuring concordance with the Social Accounting Matrix (SAM) economic activities codes. Then, the different occupations are identified as skilled, semi-skilled and unskilled, as shown in Table 1.2.

Table 1.2. Correspondence between occupations and skills level

Legislators	Skilled
Professionals	
Technicians	
Clerks	Semi-Skilled
Service workers	
Skilled agricultural workers	
Craft workers	
Plant and machine operators	
Elementary occupations	Unskilled
Domestic workers	
Occupation unspecified	

To evaluate the long-term impacts of government policies, the dynamic Poverty and Economic Policy (PEP 1-t) standard model by Decaluwé *et al.* (2010) is used¹⁰. However, several assumptions of this standard model are changed in order to take into account the South African economy. The model has two production factors: capital and labour. Labour is disaggregated into three broad types: unskilled, semi-skilled and skilled workers. Each type is then disaggregated into occupations. Each activity uses both production factors.

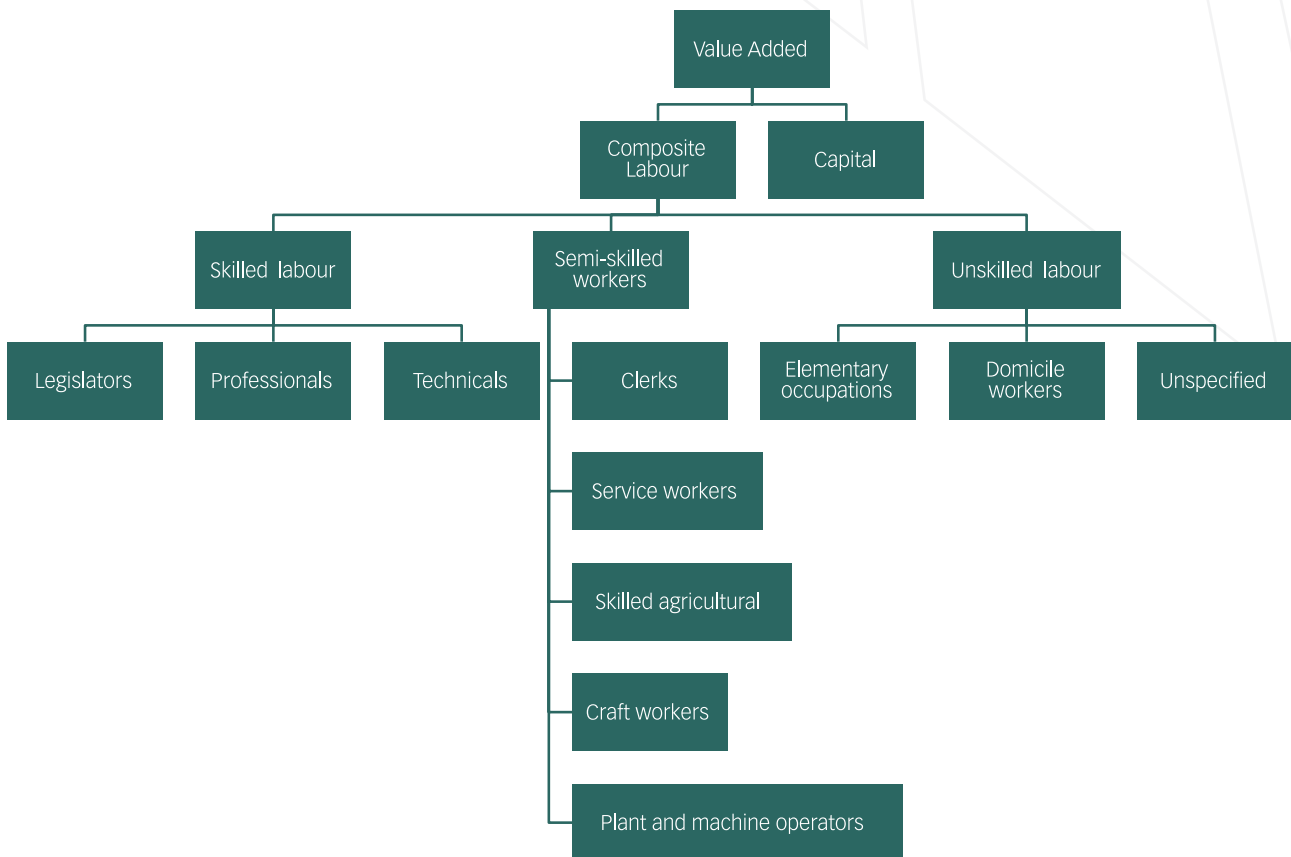
Figure 1.5 gives the detailed value-added structure used for analysing employment impacts. As shown, a Constant Elasticity of Substitution (CES) function is used to represent the substitution between composite labour and capital¹¹. Composite labour demand is also a CES function between skilled, semi-skilled and unskilled labour:

- The skilled demand is a CES with a low elasticity between legislators, professionals and technicians, to capture the fact that firms would have difficulty substituting, for instance, a lawyer for a doctor.
- The semi-skilled demand is a CES with an intermediate value of elasticity between its five components.
- The unskilled demand is a CES with a high substitution value, assuming that the producer will find it relatively easy to substitute low skilled workers.

10 The main form of analysis based on CGE models is that of comparative statics. In *comparative statics*, the start is a base solution or scenario (also known as a counterfactual); then one of the exogenous variables or parameters is altered, and the model calculates the new values for the endogenous variables. Comparison of the two sets of values of the endogenous variables suggests the estimated economic impact of the change in policy (intervention). The path taken by variables of interest to move from one equilibrium point to another is not of importance here, only the comparison of the two equilibria. *Dynamic analysis*, on the other hand, is concerned with looking at the path from one equilibrium to another.

11 Elasticity of substitution is simply a measure of the responsiveness of the ratio of two inputs to a production function with respect to the ratio of their marginal products. Invented by Sir John Hicks, it is used to measure the substitutability between inputs, i.e. how easy it is to substitute one input for the other.

Figure 1.5. The value-added structure



Based on a literature review of South Africa, a total factor productivity elasticity of 0.3 was used to capture the economy-wide impacts of infrastructure investment and other related productivity improvements. In the years preceding democracy, infrastructure investment was generally very low in South Africa. From 1996 to 2002, during the Growth, Employment and Redistribution (GEAR) era, public infrastructure investment fell from 8.1% to 2.6% of GDP. During this time, the emphasis was on fiscal discipline rather than expenditure increase. In 2002, the Accelerated and Shared Growth for South Africa (AsgiSA) plan specified in policy a drive for infrastructure. Indeed, the AsgiSA plan identified infrastructure as one of the six binding constraints to economic growth. The 2008 Budget Review showed that growth in real gross, fixed capital formation increased from 16.5% in the fourth quarter of 2006 to 21.2% in the third quarter of 2007. However, between 2009 and 2010, the financial and economic crisis affected South Africa's economy and slowed down the growth rate. Since then, policy has once again turned to an emphasis on massive infrastructure investment. In his 2012 State of the Nation address, the President of the Republic of South Africa unravelled an intensive five-year infrastructure investment drive. Therefore, it is appropriate to understand the impact of infrastructure on the South African economy and employment.

Studies on the impact of infrastructure on economies have produced differing results. For instance, Jung and Thorbecke (2003) showed that infrastructure spending benefited poor people in Tanzania but worsened the plight of the poor in Zambia. Summarising the main studies on infrastructure, Kirsten and Davies (2008) found that the results vary – some infrastructure investments are beneficial for poverty reductions, while others actually cause poverty. The studies looked at various infrastructure sectors: roads, sanitation, electrification and dams. Using a CGE model, Perrault, Savard and Estache (2010) showed that the impact of infrastructure spending is very varied in selected sub-Saharan African countries. Further, using the same model, they showed that the financing options produce very different results in different countries. The underlying structure is important when determining the impact of infrastructure expenditure in a country.

The number of studies into the impact of infrastructure expenditure on the economy of South Africa is growing. The extensive work done by Bogetic and Fedderke (2005) and Fedderke and Bogetic (2006) has led to greater interest in analysing the importance of infrastructure, from its impact on growth to its impact on productivity. Fedderke and Bogetic (2006) found infrastructure investment had a positive impact on productivity: total factor productivity increased by 0.04% when investment in economic infrastructure increased by 1%. However, Fedderke and Garlick (2008) suggested that the AsgiSA infrastructure plan might have unfavourable effects in South Africa.

Kirsten and Davies (2008, p 4) point out that, even if increased spending increases the rate of growth, the impact of increased infrastructure spending on poverty and employment is not clear. Such micro impacts can only be uncovered by more in-depth, sectoral analysis of the expenditure patterns, which is one of the purposes of this chapter.

A study of the impact of transport infrastructure in South Africa, using a SAM model, found that middle-income households benefited the most from an increase in transport infrastructure (Mabugu and Chitiga, 2009). A possible problem is that public infrastructure investment could potentially crowd out other investment (Mabugu and Chitiga, 2009, p 36). However, an increase in infrastructure has positive effects on the economy, increasing consumption and investment and thereby creating spill-over effects (Mabugu, Rakabe and Chitiga. 2009). As this study used a static CGE model, it opens the way for a dynamic CGE study, as typically the effects of infrastructure are dynamic.

Another key South African characteristic that was modelled is the problem of high unemployment, notably for semi-skilled and unskilled labour. In South Africa, unions are very strong. The trade union movement is the most disciplined and the largest in Africa – and influential in labour-market and other related industrial policies. Unions negotiate salaries and wages, conditions of service, workforce restructuring and retrenchments on behalf of their members. As a result, wages and salaries are rigid, which the model takes into account by assuming a binding minimum wage. Thus, if production decreases, producers will not be able to decrease their employees' salary below the minimum wage. This rigidity will also have an impact on unemployment: if producers cannot decrease the wage bill, they will have to retrench some workers.

Finally, the model also accounted for the skills gap. While technology continues to evolve, the labour force is ageing through labour supply accumulation (in the midst of rising youth unemployment) and technical factor productivity in the respective sectoral production functions. In the real world, bridging this skills gap will be a huge challenge for basic education, industry and society as well as for the universities (see Chapter 2 and Chapter 3).

1.4 Policy Simulations, Results and Analysis

Using this carefully designed tool, several forward-looking policy simulations were run to examine (*ex ante*) several job creation policy interventions. The simulations are summarised below:

Three sets of scenarios were run using the models, each one implying four financing scenarios. Thus, there are 12 scenarios in total.

1. Government's spending increases by 3% per year during 2013–2016 and then increases at the population rate thereafter.

Four different ways of financing this policy are proposed. First, government totally finances the increase (i.e. government's savings are endogenous and, given the policy set up, might decrease). Then, in the next three scenarios, government's deficit is kept constant, and the increased spending is financed through increasing direct taxes on households (scenario A), increasing firms' direct taxes (scenario B), and increasing indirect taxes (scenario C).

2. Government's investment programme increases. This investment programme is split into three components:
 - Investment in government sectors (e.g. education, justice). These investments will increase the stock of capital of public sectors.
 - Investment in infrastructure (e.g. roads, harbours, airports). These investments do not increase the stock of capital of any sectors. Indeed, a new road belongs to all the sectors and agents and can be considered a public good.
 - Investment in productive sectors (e.g. investment in the energy sector) that increases the capital stock of a given sector. For instance, when government invests in a nuclear plant, the capital stock of the electricity/energy sector increases.

For this second scenario, an increase in public investment is stimulated for the three components, following the investment plan for the period up to 2016, and thereafter at the population rate. The same four different ways of financing government's deficit as in scenario 1 are applied.

3. The third scenario presents the same simulation as scenario 2 but takes into account the productivity effect of infrastructure investment on other sectors. For instance, the construction of a bridge (investment in infrastructure) will have an impact on other sectors if the use of this bridge reduces travel time.

Simulation 1

The impact of simulation 1 on GDP at basic prices is positive for all the periods and also produces very positive results for unemployment and benefits to households. However, in the long term, total investment drops, which tends to reduce economic growth. When the policy is debt financed, unemployment decreases for the complete period. Skilled and semi-skilled workers benefit more from the proposed policy, as government's activities are very intensive in these two types of labour.

As it is not sustainable for government to let its deficit run unabated, three different ways of financing the government deficit were explored, and none of these was found to be neutral. Indeed, household tax financing will affect more households, decreasing their demand for commodities, which will almost immediately affect other activities. Sectors such as food and footwear will be particularly hard-hit. Financing through taxing firms will be more harmful for firms, as they will pay more direct taxes, and will have an impact on total investment in the long run. The value-added tax (VAT) financing scenario will affect the whole economy, as the VAT increase will have an impact on final and intermediate consumption for agents and activities.

Simulation 2

Building on these results, Simulation 2 went on to explore whether infrastructure-intensive expenditure would do a better job. The idea with this type of policy is to see what happens in the long run. Simulation 2 shows that in the short term government's deficit increases considerably, but the question is will this spending create greater economic activity that generates new revenues in the long term? For instance, a policy that creates jobs will have a fiscal impact, as new workers will receive an income and pay new taxes (direct and indirect). Yet, in terms of unemployment, results are surprisingly negative. However, it should be noted that the unemployment level for skilled workers in the base year is very low, and thus variation is very high. Another explanation could be the existing economic structure of the country together with growth centres, which operate from an ageing industrial-era infrastructure that is not labour absorbing and is highly capital intensive. In any case, whatever the scenario and the labour type, unemployment is hardly affected.

Simulation 3

In the last set of scenarios, Simulation 3, the same simulations are run but take into account the effect of infrastructure productivity on other sectors. Understandably, government investment in building a road (infrastructure spending), or in constructing or renovating a harbour, will have an impact on the other sectors: it will decrease transport margins, allowing more trade with the same quantities of labour and capital (in short, lowering the cost of doing business). The impact on unemployment is better, with unemployment decreasing in one of the scenarios for all types of workers in the long run. However, in the short term, only workers in the elementary occupations will benefit from a decrease in unemployment; for the rest, unemployment rises.

1.5 Conclusion

This chapter has illustrated that fiscal policy actions intended to increase demand for goods and services can affect employment in three key ways: by boosting households' disposable income, by providing support to businesses and by increasing grants or government spending on infrastructure. Initiatives that reduce the marginal cost to businesses of adding employees, or that target people most likely to spend the additional income (generally people with lower income), would have the greatest effect on employment per rand of budgetary cost. Despite the near-term economic benefits, such actions would add to the already large projected budget deficits that exist under current policies, either immediately or over time. Unless other actions are taken to reverse the accumulation of government debt, the nation's output and people's income would ultimately be lower than otherwise would have been. The negligible impact on growth of interventions such as an expansive infrastructure strategy or expanded public expenditures has important implications for fiscal policy. At the very least, the finding suggests that government interventions that emphasise infrastructure alone will make little impression on employment. Therefore, such interventions are not an adequate basis for introducing new economic sectors or raising the capabilities of existing economic sectors. Hence, rather than replacing ageing infrastructure, new infrastructure should be used as a catalyst and long-term solution for economic development and job creation.

The analysis shows clearly that fiscal policy (infrastructure and current expenditures) alone is not going to solve job-creation problems unless complemented by other interventions. New investments are required that allow shifts towards jobs and knowledge-intensive production and provision of government services. In all cases, fiscal policy needs to be consistent with long-term fiscal objectives and take into account the limits of direct public sector employment. A 'prisoner's dilemma' scenario¹², which is currently preventing a coordinated social compact among the role players who can influence employment, requires urgent redress.

1.6 Recommendations

With respect to unemployment and the intergovernmental transfer system, the Commission recommends that government should:

- Re-direct government spending towards those activities that directly or indirectly create jobs through enhancing productivity performance. Activities such as healthcare, durable goods manufacturing, agriculture, community services, and hospitality and food service should complement government's expanded infrastructure expenditure plan which traditionally has focused chiefly on construction activities (e.g. building highways, power plants, bridges, dams and flood control structures).
- Promote lower-paying positions, which have the highest potential for the most job gains, including those found in the informal service sector (which can help undo the losses felt by groups hardest hit by the recession of 2008–2009).
- Reduce unemployment by addressing factors other than the weak demand for goods and services. This should be done by:
 - Re-designing the state procurement framework to incorporate and grow the informal economy and formal micro-enterprises, e.g. requiring recipients of large government contracts to include an informal sector partner in their tender submissions. In addition, the Department of Performance Monitoring and Evaluation should stringently monitor the outcomes of these contracts.
 - Earmarking government procurement contracts for low-technology or service-oriented contracts (e.g. catering) for informal sector companies or micro-enterprises.
 - Better targeting of supply-side interventions for re-skilling, mobility. These policies could be implemented using mechanisms such as block grants (e.g. transport subsidy for unemployed vulnerable groups (women, youth and the disabled) so that they are better connected to employment opportunities and improving labour market information availability).
- Encourage, particularly through the relevant Departments of Labour and Performance Monitoring and Evaluation, those companies that are yielding the highest employment levels both directly and indirectly. This would entail:
 - setting up an employment performance-reward scheme for enterprises that excel in job creation
 - publicising the scheme widely and giving it a high profile.

12 'Prisoner's dilemma' refers casually to situations where role players (unions, government and business) could gain important benefits from cooperating but suffer from the failure to do so, finding it merely difficult or expensive, (but not necessarily impossible) to coordinate their activities to achieve cooperation.

- Develop and implement credible job plans for each sphere of government. To unblock prisoner’s dilemma scenarios and work towards amicable social compacts:
 - Provide clarity on permitted and non-permitted economic activity through the job plans
 - Ensure coherence and coordination of the plans across boundaries
 - Ensure collaboration across a broad set of actors – not only employers, but also unions, economic development agencies, Sector Education and Training Authorities (SETAs), secondary schools, colleges, universities, vocational training centres and business support providers and
 - Ensure the plans are used in the budget process
 - Use the criteria proposed in Box 1.1 below to evaluate respective job plans.

Box 1.1. Criteria for Evaluating Government Job Plans in South Africa

Magnitude of policy change and debt implications. There is no commonly agreed upon, optimal amount of national debt. Higher debt has a number of negative consequences that the Commission has discussed in its earlier work, but reducing debt or constraining its growth will imply alternatives forgone so that policy changes themselves can have negative consequences. Hence, government will need to make judgments about how much national debt is acceptable.

Specificity of the policy. This criterion asks whether a plan is explicit or not in how job creation would be achieved. Specificity is critical not only to evaluating a plan but also to the effects of the plan. Credible policy changes that would substantially reduce inflation in the coming decade and beyond could boost economic expansion in the next few years by holding down interest rates and increasing people’s confidence in the nation’s long-term economic prospects. Such an approach would be most effective if the future policy changes were sufficiently specific and widely supported by households, businesses, state and local governments, and if participants in the financial markets believed that the future fiscal restraint would truly take effect.

Amount and composition of government spending. Over time, government will need to collect revenues roughly equal to its expenditure. Hence, government will need to decide the size and composition of such expenditure. Since the 2009 recession, South Africa has experienced a future budget trajectory that looks very different from the past, and budget (job) plans have the opportunity to reinforce current trends or to reverse them.

Short-term economic impact. Government faces difficult trade-offs in deciding how quickly to implement policies to create sustainable jobs. On the one hand, immediate spending cuts or tax increases would represent an added drag on the current weak economic expansion. In addition, implementing spending cuts or tax increases abruptly would give families, businesses, and provincial and local governments little time to plan and adjust. On the other hand, cutting spending or increasing taxes slowly would tend to boost output and employment in the next few years, compared with what would happen if those changes were made rapidly. However, it would also lead to a greater government debt and might raise doubts about whether the longer-term deficit reductions would ultimately take effect.

Medium- to long-term economic impact. Beyond the next few years, budget plans could affect output and income by altering the size and skills of the labour force, the amount and composition of the capital stock, and the efficiency with which those inputs are combined. Smaller deficits would lead to higher national savings in the medium and long term, and higher national savings would lead to a larger capital stock.

Distributional impact. This criterion addresses the question of who would bear the burden of the proposed changes in tax and spending policies. Different sorts of spending cuts and tax increases would affect different people to different extents, both directly (who pays certain taxes or receives certain benefits or services) and indirectly (how the changes in policies affect the economy and thereby affect people’s well-being).

Chapter 2

FINANCING E-EDUCATION AND ACHIEVING POLICY GOALS IN PUBLIC ORDINARY SCHOOLS IN SOUTH AFRICA

2.1 Introduction

This chapter is intended to highlight key issues for consideration with respect to the financing of e-education in South Africa, in light of the forthcoming ten-year anniversary of the White Paper on e-Education: Transforming Learning and Teaching through Information and Communication Technologies (South Africa, 2004). The chapter presents an overview of key issues in financing e-education and lays the foundation for further research to be conducted for the next Annual Submission (2014–2015).

The world is shifting to a knowledge-based economy. South Africa's ability to promote inclusive growth depends on producing successive generations of well-educated young people contributing to socio-economic development. A South African society with a large, well-educated population will overcome more easily the many obstacles to social and economic equality experienced by the majority of households. One of many approaches to building the necessary long-term capacity is e-education, which uses Information and Communications Technologies (ICTs) to enhance the quality of the learning and teaching experience. The result is potentially greater completion rates and better educational outcomes, as learners can have access to a more complex knowledge base and engage in more self-learning, with the guidance of teachers.

This chapter reviews only the financing of e-education in public ordinary schools, which fall under the Department of Basic Education (DoBE). Financing of e-education has occurred mainly through the national budget and through two provincial budgets, Gauteng and Western Cape. Furthermore, a number of e-school initiatives and projects (Isaacs, 2007) are being run, including those promoted by the DoBE, the Department of Communications (DoC) and the Department of Science and Technology (DST). While cross-governmental collaboration on e-education is necessary and to be encouraged, the main focus of this chapter is financing of e-education from the DoBE budget.

2.2 View of the Problem: Schooling, e-Education and Financing

During their schooling years, the majority of the 12.1 million learners in 24 681 public schools in the nine provinces (DoBE, 2011) acquire only limited knowledge, and a very large proportion fail to complete 12 years of schooling (FFC, 2011):

In South African schools, gross enrolment rates are quite high at primary levels of education, which shows that the country has expanded access (not necessarily quality) to basic education and is on track to meet the MDG2 of achieving universal primary education (Jansen, 2008). The challenge facing basic education in South Africa is that completion rates are low at secondary level, where fewer than 20% of youths drop out before Grade 9 (Gustaffson and Morduchowicz, 2008). Analysts support this point, noting that over 1.3 million learners began Grade 1 in 1999, but less than half of them reached Grade 12 and became the "2010 matriculants" (Bowie, 2011). This is due to various reasons including but not limited to high drop-out rates and high grade repetition levels. There is thus a critical and urgent need for attention by the developmental state.

This low level of education negatively affects South Africa's capacity to develop. It limits the ability to create economic value and to ensure that an increasing proportion of the population participates in economic production at reasonable rates of reward, often referred to by government as 'decent jobs'. Many interventions are needed in the basic education

system to increase capacity, including leadership, good school governance and increased access to knowledge for both teachers and learners.

South Africa does not have a comprehensive life-long learning programme for teachers. After their teacher training, most teachers are confined to the classroom and have limited access to new knowledge, through changes in the curriculum and/or teaching guides and/or learner materials. As a result, opportunities are limited for teachers to become conversant with important educational content in a particular subject area or to stay abreast of trends in teaching language, science or mathematics.

The limitations that affect the knowledge base of the teaching fraternity also have a negative impact on learners, who are thus poorly prepared for further and higher education and for the world of work. Introducing and integrating ICTs, electronic and visual media into the educational process and culture can provide a platform for increasing access to knowledge for teachers and learners. This includes textbooks and other learner materials available online, free download of content, and access to text, visual media (graphs, maps), and audio-visual media (video, film, music). Devices such as electronic tablets and e-books can bring knowledge to the classroom and to the learner's desk. Many private schools and colleges have introduced e-books and tablets (the 'new blackboard') as learning devices in the classroom. E-Books are a "game-changer" (Gray, 2011), and failure to make this shift over the next three to five years will further disadvantage and entrench the knowledge divide among South African learners, reducing the chances of many young people from poor backgrounds of becoming professionals, job creators and the next generation of teachers in a digital knowledge era.

Introducing e-education as a way of improving the quality of education does not require the most sophisticated and expensive equipment. An e-education business model can be designed that makes the widespread introduction of technology affordable. However, inhibiting factors in the public sector may include inefficiency and corruption in the delivery chain. A systematic approach is required, with a strategy, plan, and adequate financing and risk management to ensure that e-education is alive and makes an impact in schools. In reality, despite generally well-expressed policy goals, e-education is largely dormant, appearing to be poorly financed, with only limited management and evaluation.

2.3 Policy Goals: e-Education and Quality in Basic Education

The DoE was one of the first government departments to introduce public policy for integrating ICTs and to consider transforming the sector through the introduction of new technology. The policy goal of the White Paper on e-Education (South Africa, 2004, section 2.23) is:

Every South African learner in the general and further education and training bands will be ICT capable (that is, use ICTs confidently and creatively to develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community) by 2013.

This policy goal is supported by the Information Society and Development (ISAD) Plan 2006, which gives e-education as one of three priorities (DoC, 2006, section 4.1.1) and states:

The education system of this country therefore, has an obligation to support the development of a citizenry that can actively participate in this new (information) society and deliver on public expectations of delivering quality education for economic growth and social development.

Two of the main targets for e-education (DoC, 2006, p 58) are:

- All schools connected and using ICT for teaching and learning.
- All provinces have budget allocated for e-education.

Furthermore, the policy goal for e-education is in line with the strategic outcomes of the current administration for (a) improved quality of basic education and (b) a skilled and capable workforce to support an inclusive growth path.

The policy foundation for e-education appears to be relatively comprehensive, located in various components of the government machinery. As the policy anniversary of 2014 approaches, this foundation will require reviewing and updating, as technology and digital content production has advanced considerably in the past decade, and many innovations are now available that can bring e-learning to schools at a lower cost.

2.4 Some Perspectives on Financing e-Education

The value of e-education is not contested, as shown by the adoption of the White Paper on e-Education with its focus on e-school development. This chapter looks at the financing of the e-learning component of e-education (the other component being e-administration). Financing of e-learning has been left to the discretion of provinces, which are in charge of the education function. Government has not yet introduced a specific inter-governmental financing mechanism for funding e-learning content and e-education infrastructure (DoBE, 2012). Schools differ widely across provinces, from those that have relatively good infrastructure to those that use mud huts as classrooms. Given the great diversity of learning environments, an inter-governmental financing mechanism must address specific components of e-learning across all provinces. A gradual, progressive approach would encourage the evolution and equitable development of e-learning across provinces.

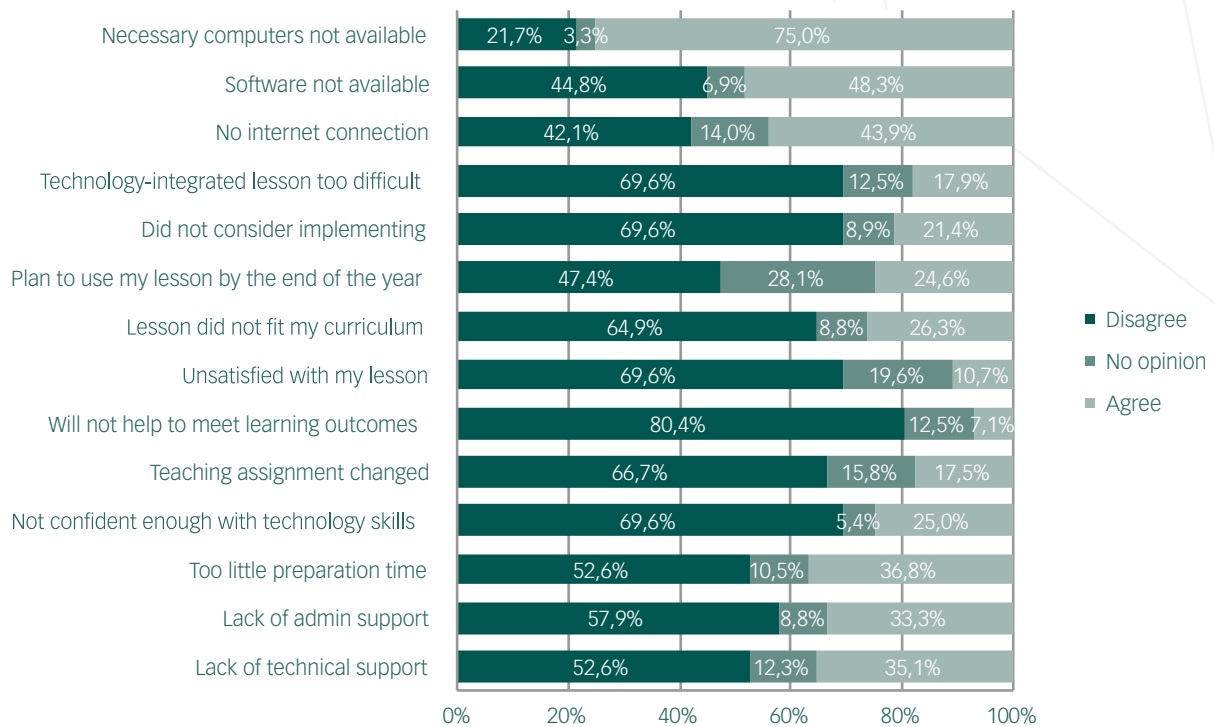
The e-learning components that require funding need to be clearly defined, so that funding allocations can be prioritised to ensure well-resourced e-learning. Virtual learning centres, such as computer laboratories, have advantages and disadvantages (Morse, 2010). Ideally e-learning should take place in the classroom, so that every subject benefits from access to knowledge through online materials or electronic media. Some forms of e-learning require minimal expenditure of public funds, for example sending key learning points via sms or podcasts to mobile phones. E-learning can be introduced within the constraints of a particular budget allocation, emphasising low-cost initiatives where appropriate and more costly and beneficial approaches in the medium to long term. For the more advanced forms of e-learning, the design of future funding models will need to take into account: (a) the requirement for broadband access to download or upload large documents, video or music files; and (b) the need for local content production and dissemination, to promote greater availability of, and access to, South African languages, culture and knowledge alongside global culture and knowledge.

As the majority of Internet connections are too slow for downloading useful content, the private sector's historical investment in providing Internet access to public schools may soon become obsolete. Traditionally investment has been through universal access and service obligations that the telecoms sector regulator, the Independent Communications Authority of South Africa (ICASA), set for approximately 17 500 schools. The 'last mile' is the need for broadband connectivity to the classroom, to facilitate access to web-based learner materials, e-books, e-education applications and/or IPTV (Internet Protocol TV).

Therefore, national, provincial and local governments will need to facilitate broadband connectivity across the country, through a combination of public and private initiatives, including funding. Linking schools to the government's virtual private network (VPN) is one approach being considered in the DoBE feasibility study (DoBE, no date). Another approach is to make use of the broadband networks built by the metropolitan municipalities of Cape Town, Ekurhuleni, Johannesburg and Pretoria, and the provincial government of Gauteng. The billions of rands invested in these broadband initiatives have been justified by referring specifically to schools as important users of the network infrastructures. These investments need to be made to work for South African schools. A third, possibly parallel, approach would be to make available, and give access to, mobile broadband networks (small WiFi or WiMax networks), especially in rural areas.

The funding of e-education must also target certain aspects that hinder delivery of e-education to schools and the integration of technology into everyday learning. Research conducted by Wilson-Strydom and Thomson (2005) reveals the reasons for poor adoption of e-learning in the early years following the publication of the White Paper:

Figure 2.1. Reasons for not implementing technology-integrated lessons



Source: Wilson-Strydom and Thomson, 2005

Figure 2.1 helps to identify the areas that need funding so that e-learning can spread throughout ordinary schools. An important line item relevant to all budget allocation is computing hardware and software, using a suitable electronic device, possibly an e-book or electronic tablet device (often cheaper than a laptop or desktop). What is required is adequate and relevant curriculum content, which can be adapted for electronic media and technological devices in the classroom, and therefore needing appropriate budgetary allocation. Too many e-education initiatives in South Africa have focused on technology as the solution, rather than the medium. Budgets have been exhausted building computer labs that are under-utilised. Electronic media for educational purposes should be about the daily application and use of educational technologies, which teachers and learners continuously adapt to their particular uses and needs. Hence, budget allocations should tend towards a learning-intensive rather than a technology-intensive approach. Financial modelling for e-education should take into account the whole school budget, the whole district education budget, as well as provincial and national budgets, in order to ensure that e-education is fully integrated within financial allocations.

While the initial investment may appear very costly, cost containment measures can be explored within a medium to long-term budgetary perspective. For this to happen, the modelling exercise is vital to the future of e-education. It is noted that the DoBE is currently engaged in a relatively comprehensive feasibility study, and the Commission is able to provide useful comment to government on this study, its strengths and weaknesses.

Funding for e-learning is a challenge, as most funds are targeted at teaching and not at technology-integrated learning. According to the Organisation for Economic Cooperation and Development (OECD, 2005), the two main challenges for e-learning are pricing and costing of e-learning, and sustainable funding for e-learning.

Pricing and costing is a challenge because most institutions have not clearly defined what e-learning entails and what aspects of e-learning will need to be funded. The DoBE's feasibility study to better understand the costing and funding of e-learning found (DoBE, no date):

1. Insufficient experience of e-learning to make a judgment on relative cost.
2. Considerable experience, but no firm evidence on relative cost.
3. Experience to date suggests e-learning is fundamentally more expensive than face-to-face delivery, but this is offset by other benefits.
4. Experience to date suggests that initial development and delivery costs were often more expensive than in the case of face-to-face delivery, but other factors have shown or suggest that e-learning will prove less expensive across the product cycle.

Funding e-learning sustainably is a challenge in many countries. To reap the benefits of e-learning, South Africa needs to find long-term, sustainable ways of financing e-learning in public ordinary schools. One way is to look at how each sphere of government can contribute to financing the required infrastructure (including broadband connectivity) and electronic content production to supplement the already available learner materials. For the purpose of this report, only the DoBE programme-level budgets have been examined, as data on provincial budget allocations for e-education and e-learning is limited and still needs to be compiled into a comprehensive report to facilitate analysis.

Various methods can be considered for the financing of e-learning (Intel Corporation, 2007), but these are merely supporting measures to government financing:

- Combining education funding sources: Funding educators' electronic equipment via the use of both salary budgets and treasury funds. This helps in offsetting technology costs, with teachers sacrificing a small portion of their salary. While this may contribute to the cost of electronic curriculum and learning content for teachers, it does not address the main budget item, which is learners' access to e-education.
- Public-private partnerships (PPPs): Incorporating private financing and risk management into the e-learning funding mix. However, this is mainly applicable to the infrastructure components and is not a traditional PPP where the private sector gets a financial return. Hence, PPPs for e-education can bring in only limited financing.
- Forming consortia: This approach considers the advantages of schools pooling their purchasing power so as to get favourable prices from the suppliers and is a government-led initiative.
- Philanthropy and grants from development agencies: This approach deals with the contribution of grants to funding e-learning, but these are generally a very small proportion of the total funding requirement.

In South Africa, government historically chose to fund the introduction of e-learning via a combination of public funds and other income sources. However, the funding mix has not achieved the desired results of wide-scale access to online learner materials and knowledge resources. Contributions to infrastructure financing and availability from the private sector, based on regulated universal access and service obligations placed on the fixed and mobile telecoms operators, has led to limited Internet connectivity (BMI-Techknowledge, 2010), and has seen little or no positive impact on ICT usage in e-education in South African schools.

2.5 An Overview of Historical and Projected e-Learning Expenditure

In this submission, it has only been possible to examine the DoBE programme level budgets. Only limited data is available for provincial budget allocations to e-education and e-learning, and these have not yet been compiled in a comprehensive report to facilitate analysis.

The targeting of funding for e-learning will help the implementation of the e-learning goals as set by the White Paper on e-education. In addition to understanding the evidential basis for targeting funding at particular items required for successful introduction of e-learning (see the results of the Wilson-Strydom and Thomas 2005 study), it is also necessary to consider historical expenditure on e-education in the context of total expenditure on basic education (see Tables 2.1–2.4 below).

Table 2.1. Basic education expenditure

Programme	Audited outcome			Adjusted	Revised	Medium-term expenditure estimate			
	2007/08	2008/09	2009/10	appropriation	estimate	2010/11	2011/12	2012/13	2013/14
Administration	106,101	121,429	154,617	257,981	257,981	301,740	320,787	339,977	
Curriculum Policy, Support and Monitoring	295,037	540,949	564,228	1,351,950	1,071,950	1,835,137	1,901,347	2,013,482	
Teachers, Education Human Resources and Institutional Development	176,126	283,284	497,507	495,026	495,026	521,989	747,195	973,163	
Planning, Information and Assessment	2,808,135	3,320,132	4,030,416	4,928,102	3,376,852	6,387,529	8,405,342	11,614,737	
Educational Enrichment Services	1,414,118	2,118,201	2,607,518	3,891,203	3,891,203	4,821,739	5,183,265	5,468,265	
TOTAL	4,799,517	7,854,286	10,924,262	10,924,262	9,093,012	13,868,134	16,557,936		
Administration	2%	2%	2%	2%	3%				
Curriculum Policy, Support and Monitoring	6%	8%	7%	12%	12%				
Teachers, Education Human Resources and Institutional Development	4%	4%	6%	5%	5%				
Planning, Information and Assessment	59%	52%	51%	45%	37%				
Educational Enrichment Services	29%	33%	33%	36%	43%				

Source: National Treasury, 2011

For the 2013/2014 financial year, the total budget allocation at national level for basic education is scheduled to increase to over R20 billion. Historically the largest part (over 80%) of this expenditure has been on the planning, information and assessment programme (51% in 2009/10), followed by the educational enrichment services programme (33% in 2009/10). These programmes should collectively make a significant contribution to the input required for fostering successful e-learning introduction across all provinces.

The national budget is directed towards policy design and review, and schooling is a provincial function, hence the main budgets that would be used to build e-education lie in the provinces. Ideally, since e-education is a major long-term policy initiative, e-education should be a specific programme, and therefore a specific item, in the national and provincial budget allocations.

Table 2.2. Computer services expenditure

Programme	Adjusted						
	Audited outcome			appropriation	Medium-term expenditure estimate		
ZAR thousand	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Administration	7,852	7,593	13,859	16,274	15,537	16,461	17,337
Curriculum Policy, Support and Monitoring	2,803	2,686	1,341	2,024	1,798	1,863	1,954
Teachers, Education Human Resources and Institutional Development	1	430	3,486	17	9	11	12
Planning, Information and Assessment	13,162	15,616	20,512	40,732	35,463	36,458	38,550
Educational Enrichment Services	5	5	2	–	4	4	4
TOTAL	23,823	26,330	39,200	59,047	52,811	54,797	57,857

Source: National Treasury, 2011

The expenditure on computer services is significantly greater in the planning programme than in any other programme. Expenditure on computer services in the curriculum policy, support and monitoring programme shows a decline from 2007/08 to 2011/12. The education human resources and institutional development programmes show very small budgets. If e-learning was a funding priority, a greater proportion of the computer services budget would be expected to be allocated to these programmes.

Table 2.3. Communications expenditure

Programme	Adjusted						
	Audited outcome			appropriation	Medium-term expenditure estimate		
ZAR thousand	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Administration	1,607	1,738	2,199	1,680	2,289	2,437	2,582
Curriculum Policy, Support and Monitoring	510	775	749	539	687	723	796
Teachers, Education Human Resources and Institutional Development	382	354	424	415	482	512	543
Planning, Information and Assessment	611	616	663	839	846	875	924
Educational Enrichment Services	258	215	267	304	311	311	326
TOTAL	3,368	3,698	4,302	3,777	4,615	4,858	5,171

Source: National Treasury, 2011

Communication is an anchor in e-learning, as the delivery of e-learning services pivots around efficient communication systems. The relatively low expenditure on communications is indicative of an environment with only a very limited e-learning focus.

Table 2.4. Learner and teacher support material expenditure

Programme	Adjusted						
	Audited outcome			appropriation	Medium-term expenditure estimate		
ZAR thousand	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Administration	625	105	73	87	66	81	90
Curriculum Policy, Support and Monitoring	1,197	12,390	1,061	391	16	17	19
Teachers, Education Human Resources and Institutional Development	–	384	2	–	4	4	4
Planning, Information and Assessment	3	9,892	486	–	–	–	–
Educational Enrichment Services	43	–	–	–	2	2	3
TOTAL	1,868	22,771	1,622	478	88	104	116

Source: National Treasury, 2011

Expenditure on support material does not appear to have a predictable expenditure pattern, as over the years expenditure on support material in the different programmes has declined overall. There is a paucity of data that illustrates the e-learning initiative's prioritisation. Discussions with the Commission and the DoBE indicate that as yet no dedicated budget exists for promoting e-learning or e-education. While policy is made at national level, certain aspects of policy implementation would need to be addressed at Council of Education Ministers' level, particularly the design of budgetary allocations as a foundation for provincial level implementation.

With regard to the current feasibility study, one particular weakness noted is that the study is too technology-oriented and not sufficiently oriented to e-learning and to broader e-education. There is an imbalance towards funding physical infrastructure, ICT infrastructure and connectivity (approximately 92% of the estimated finances), when compared to professional development, curriculum and content, monitoring evaluation and research (approximately 7% of estimated finances). The assumptions of the e-education model (physical buildings, desktop and laptop computers) can be amended towards a much less costly infrastructure approach and a stronger e-education approach (tablet-type devices and content), thereby building a more affordable financial model, as well as a learning orientation. The assumptions of an e-education model should be based on a sound understanding of educational practice, as a school will not be well-served by a technology model designed for a large corporate organisation, or even a small or medium enterprise.

2.6 Conclusion

It is necessary to understand why the e-education challenge is not being met, in order to present options for remedy. There are a few possible reasons which require action: (a) the need for concerted cultural and technological adaptation; (b) the need for specific e-education knowledge and leadership at both national and provincial levels, as education is a concurrent function between national and provincial government; (c) a requirement for explicit budget allocations for e-education at national and provincial levels; (d) supporting strategies and funding from institutions such as the DoC, ICASA and municipalities; (e) building public accountability for policy implementation into the education ecosystem.

With respect to specific e-education financing issues, based on the data in Tables 4.1 to 4.4 above, the Commission is of the view that budgets are at present more focused on the e-administration than on the e-learning component of e-education. This approach will require review to inform real investment in e-education. Furthermore, e-education financing need not be high budget. Appropriate scoping of the requirements, contributing parties and budget design can lead to an elegant, yet effective model for the advancement of e-education, specifically of e-learning.

2.7 Recommendations

With respect to financing e-education and achieving policy goals in public ordinary schools in South Africa, the Commission recommends that:

- The e-education policy should be funded as a part of government's operating budget for the programme, just like teacher salaries, school buildings and other teaching aids.
- A well-structured, inter-governmental financing mechanism should be established with explicit guidelines to provincial departments of education regarding the budget line items that must be prioritised in their annual budget allocations, as well as those budget line items that will be contained in the national budget allocation. Decisions on the particular line items can be informed by a review of policy documents and various studies conducted on e-education over several years (Abrahams, Akinsanmi & Zimri, 2012; DoBE, no date; DoC, 2006; Isaacs, 2007; OECD, 2005; South Africa, 2004; Wilson-Strydom and Thomson, 2005), and by a broader review of the available knowledge of e-education financing across the globe. An initial set of line items can be extracted from Table 2.5.

Table 2.5. Guidelines for inter-governmental financing

Financial data (expenditure) on e-education spending by province	Value obtained
<ul style="list-style-type: none"> • School Internet connectivity (dial-up) by province • School broadband connectivity by province • School mobile broadband connectivity by province (eg WiFi) • Learning devices (not necessarily desktops or laptops) • E-learning materials developed nationally and by province, including hosting online content • Accessing online content – nationally and by province • Development of teachers' e-skills • Adaptation of classrooms to incorporate electronic media • Introduction of lower-cost devices to the classroom/learner • Establishment of computer labs/computer libraries (should be very limited) • Research, monitoring and evaluation of policy goals of the 2004 White Paper on e-Education 	<p>Progress in expenditure on e-learning and e-education in terms of the goals of the White Paper on e-Education</p>

- The national and provincial education sector requires firm and expert guidance on designing e-education, and such expertise should relate to e-education, not merely to information technology. In order to promote advances in e-education, it may be necessary to consider the establishment of an e-Education Commission, constituted of government officials and e-education specialists to act as an advisory body.
- Limited data is available on e-education expenditure and specifically on e-learning expenditure, despite clear policy goals adopted in 2004 and targets established for 2013. This should be remedied through reporting on e-learning budget allocations and expenditure and, more broadly, on e-education in the annual reporting process. Such data can inform national and provincial planning, curriculum design and the development of education human resources. It can also inform the work of an e-Education Commission, enabling such a structure to advise government effectively. Furthermore, explicit reporting on financial data will enable a better analysis of the strengths and weaknesses relevant to achieving the policy goals of the White Paper on e-Education. As a baseline, the data set out in Table 2.6 would be required.

Table 2.6. Guidelines for analysing e-education financing

Broad Data Required	Analysis Required
<ul style="list-style-type: none"> Total ordinary schools' budget by province Total budget spent on e-education by province Total budget spent on learner materials Total budget spent on e-learning materials 	<ul style="list-style-type: none"> e-education spending as a proportion of total spending e-learning spending in comparison to spending on learner materials
<ul style="list-style-type: none"> Key elements of e-education as per DoBE policy Line items of e-education as per DoBE budget/financing plan 	Comparison of policy and financing approaches to e-education
<ul style="list-style-type: none"> Total number of schools by province Number of public ordinary schools with desktop computers Number of public ordinary schools with laptop computers Number of public ordinary schools with e-books, tablets or other content-enabled devices Number of public ordinary schools with email access Number of public ordinary schools with Internet access (indicators for dial-up, total broadband and mobile broadband) 	Analysis of the foundations for e-education in terms of availability of infrastructure and resources
<ul style="list-style-type: none"> Statistics on ICT usage by learners in public ordinary schools per subject per grade Statistics on ICT usage by teachers in public ordinary schools per subject per grade 	Analysis of the educational value created

- In addition to the above, the impact of e-education policy and financing should be continuously assessed, taking into account cross-departmental issues and supporting measures from a range of government departments and relevant public sector bodies (Department of Basic Education, Department of Higher Education and Training, Department of Labour, Department of Science and Technology, Department of Communications, metropolitan municipalities, ICASA and others).
 - Such assessment would consider both school-level and economy-wide impacts. From an analytical perspective, the requirements would be twofold:
 - To understand how e-education affects students' decisions about acquiring ongoing skills in the education system (econometric analysis coupled with case studies, repeated over time);
 - To consider interactions between e-education and the rest of the economy. Quantifying these interactions allows the value of various policy and financing options to be compared.
- When the delivery agreement on *Outcome 5: Build a skilled and capable labour force* is next reviewed, greater emphasis should be given to overseeing the implementation of the e-education policy, noting in particular the sub-output "Enhance research, development and innovation in human capital for a growing knowledge economy". Most of the relevant departments are already signatories to the agreement, and the delivery forum can be expanded to include other relevant role players such as those mentioned in (4) (b) above. Thus, using existing coordination structures, progress on e-education can be reported to Cabinet on a quarterly basis, thereby raising the profile of e-education.

Chapter 3

BUDGET REVIEW OF PUBLIC UNIVERSITIES IN SOUTH AFRICA

3.1 Introduction

The funding of the post-school and higher education systems is an important matter, *inter alia*, because of the South African economy's structural weaknesses. Over the past several decades, the agriculture and resources sectors have shrunk significantly and contribute only a small percentage to gross domestic product (GDP), while the manufacturing sector appears to be in slow, long-term decline and has shed jobs. The services sector is a large and powerful contributor to GDP and employment but is largely a low value-added sector. Given these constraints, the South African economy will struggle to reach and sustain growth levels above 4% per annum, which will make increasing revenue and expanding employment difficult.

To break out of this constraint-driven trajectory and increase value-addition in all sectors, a few key levers are needed for production and trade and to enhance the quality of services in the private and public sectors. One lever is to create a well-established, good quality, post-school education system, so that both the further and higher education sectors improve significantly in the next two decades. Quality improvements in academic throughput, and research and innovation output, can not only introduce greater added value and higher employment into all sectors of the economy, but also potentially contribute to long-term poverty reduction and development. South Africa must transition from a low added-value economy to a more knowledge-intensive economy that combines low-, medium- and high-knowledge intensive productive activity in order to increase the proportion of medium to high income jobs. Such a transition requires a strong, adequately funded, post-school education system comprising colleges, vocational institutions and universities.

3.1.1 Objective of review

This chapter focuses on the generic budget and funding framework for higher education. Regrettably, very limited data is available on the financing of the further education and training (FET) sector, which makes analysis of FET funding relatively challenging; a full analysis of post-school funding is a task for future research work by the Commission. Furthermore, this review analyses broad funding allocations and does not delve into specific allocations, such as funding for research, innovation and scholarly publishing, which will be the subject of a future review.

The South African post-school education system has three subsystems, as summarised in Table 3.1.

Table 3.1. Estimates of enrolments in South Africa's further and higher education system

Further and higher education subsystems	Student enrolments (to nearest thousand)		Source
Public universities	893 000	(final 2010)	Higher Education & Training (1)
Public further education at post-secondary level			
Further education and training colleges	164 000	(estimate 2009)	Sheppard & Sheppard
Police colleges	8 000	(provisional 2010)	Badsha & Cloete
Nursing colleges	33 000	(provisional 2010)	Badsha & Cloete
Agricultural colleges	1 000	(provisional 2010)	Badsha & Cloete
Private post-secondary colleges	82 000	(provisional 2010)	Badsha & Cloete
TOTAL	1 181 000		

Source: DoHET, 2010; CHET, 2011b; Badsha & Cloete, 2011

As Table 3.1 shows, public universities had the largest share (75%) of enrolments, followed by public FET colleges (with 14%) and private colleges (7%). The public vocational colleges for nursing, police and agriculture had a 3.5% share of the estimated total enrolments (excluding private higher education).

The further and higher education system in South Africa is expected to fulfil a number of major functions. These include:

- Producing graduates with the vocational and professional skills required by the labour market;
- Contributing to higher levels of social and economic equity by enabling students from disadvantaged backgrounds to enter life-enhancing academic programmes, and by allowing flexible transfers between different levels in the higher education system;
- Producing, through research and innovation, the high-level outputs that South Africa requires to be competitive in the global knowledge economy.

The analysis in this chapter is limited to a review of public universities because comprehensive financial and performance data is unavailable for the other sectors. For example, for 2007–2009 the data available on students and staff in FET colleges are estimates drawn from a number of different sources. Furthermore, the financial statements for individual FET colleges within a province are very sketchy. The only available financial data are estimates of proposed expenditure on the FET colleges, which can be extracted from provincial budget statements.

The data systems of the post-school education sectors need (a) to be brought in line with the Department of Higher Education and Training's (DoHET) higher education management information system (HEMIS) for universities, and (b) to submit annual financial statements along the lines of the department's requirements for universities.

3.1.2 Structure of the Chapter

Section 3.2 outlines the main features of the two funding frameworks employed in South Africa's public university system during 2000–2011. The first one was introduced in 1983 for the historically white universities and was gradually applied in the 1980s and 1990s to technikons (now universities of technology) and historically black universities. The life of the 1983 framework was extended to 2003 and was replaced by a second, new framework in 2004. The underpinning assumptions and principles of the two frameworks differ radically. The 2003 framework was designed to be goal oriented and move the public university system away from its apartheid past (DoHET, 2004). It links the funding of public universities to institutional performance in implementing the goals of the 1997 Education White Paper 3: A Programme for Higher Education Transformation and of the 2001 National Plan for Higher Education (DoHET, 1997).

Section 3.3 picks up the principle of linking funding to performance and covers the years 2000–2010. The analyses end with 2010 because quantitative data for all universities for the 2011 academic year will only be available towards the end of 2012. It assesses the performance of the public university system in relation to the White Paper 3 and National Plan goals that deal with:

- Improving access opportunities;
- Increasing participation of disadvantaged students and of women;
- Ensuring that enrolments increase in academic programmes linked to economic development and in postgraduate programmes at Master's and doctorate level;
- Improving the quality of teaching and research through enhancing the qualifications of academic staff;
- Increasing the numbers of graduates produced by the university system;
- Increasing the outputs of high-level knowledge products in the form of doctoral graduates and research publications.

The section concludes by noting that, while the public university system as a whole is not yet a well-performing system, many individual public universities consistently perform at a high level of throughput and research productivity. It shows that the South African public university system has become differentiated, and the performances of universities relative to the White Paper 3 and the National Plan goals differ widely.

Section 3.4 reviews the total income of universities from government and other sources. The total incomes of universities are linked to their places in a performance-differentiated system and shows that some of the principles adopted in the 2003 government funding framework have become strained.

Section 3.5 discusses the issues of (a) determining appropriate levels of government funding for public universities, (b) resolving funding inequalities between universities, and (c) funding and institutional differences. Section 3.6 recommends a review of the 2003 funding framework and raises the important issue of reviewing higher education research funding as a foundation to move the system to a higher plane.

3.2 South African University Funding Models

3.2.1 Two funding frameworks

Over the past 30 years, two sharply contrasting government funding frameworks (of 1983 and 2003) have been used in the South African public university system. A ministerial committee is at present reviewing the 2003 framework and will submit its report to the minister of Higher Education and Training on 31 August 2012. None of its findings or recommendations have been released yet.

1983 Funding Framework

This framework has three key features:

- i. Students are considered to be agents who are able to respond rationally to the demands of the labour market in their choice of institutions, qualifications and major fields of study. Under this approach, the public university system becomes no more than a set of choices made by individual students. As a consequence, the role of government in the national system is to fund student demand and to correct any market failures that may occur.
- ii. Government higher education funding is assumed to be based on (a) determinations of the actual costs of reasonably efficient institutions, and (b) decisions about which costs should be covered by government subsidies.
- iii. Government and students and their families must share the costs of higher education, as it generates public and private benefits.

The 1983 framework divided academic programmes into two broad categories: (a) natural sciences (including the health sciences, engineering, the life and physical sciences, agriculture, mathematical and computer sciences), and (b) the humanities (a catch-all category for all other disciplines). In each of these categories a 'subsidy student' was taken to be a combination of 50% enrolled and 50% successful students, where success was defined as passing individual courses rather than full degrees or diplomas.

Then, based on actual institutional costs and assumptions about cost efficiencies, various cost units per humanities subsidy student and per natural sciences subsidy student were calculated. These cost units covered staffing costs, operations, equipment, libraries, and building and equipment renewals. Each year, the rand values assigned to the various cost units changed, to take into account inflation and changing cost patterns. Once the rand values of the cost units had been determined for a given year, the units were applied to the subsidy student data, generating a rand figure of an institution's 'ideal' government subsidy income. In effect, as similar calculations were made for each university, the 1983 framework operated from the bottom up to determine what government's funding commitment would be in any given year.

Soon after the 1983 framework was introduced, the previous government found it could not meet the 'ideal' generated by the framework. Therefore, limits to the ideal government share totals were introduced early on, by applying 'a-factors'. These a-factors were in effect the reductions needed to bring the total 'ideal income' in line with the government's actual budgetary provision for public universities. The final amounts paid by government to institutions became the government share multiplied by the a-factor.

During the 1980s and 1990s, problems increased, as the 1983 framework was implemented beyond the group of historically white universities. Both the previous apartheid government and the new post-1994 democratic government found that they could not meet the 'ideal' government subsidy amounts generated by this framework.

Transition to 2003 Funding Framework

The 1997 Education White Paper 3 and the 2001 Plan for Higher Education accept one and reject two of the central features of the 1983 funding framework. The accepted feature is the principle of government and students sharing higher education costs. However, both the 1997 Education White Paper 3 and the 2001 Plan for Higher Education assert that (a) government's key responsibility to higher education is not to contribute to institutional costs and (b) the choices of students cannot be the sole determinants of the enrolment size and shape of the higher education system.

The model of higher education being the sum of student choices was rejected, as it had not worked in South Africa and would prevent higher education emerging from its apartheid past. The White Paper and the National Plan stress further that the role of government in funding higher education cannot simply be to meet a total cost generated by the enrolment practices of individual institutions. In any new funding framework, government must first decide how much it can afford to spend on higher education and then allocate funds to institutions, according to national needs and priorities.

The White Paper stresses that government should take account of labour market signals but cannot adopt the 'hands-off' stance embedded in 1983 framework. The relevant minister must formulate policies and plans for the higher education system, approve plans for individual institutions and implement them through the funding framework. As a consequence, the funding framework becomes a distributive mechanism to allocate government funds to individual institutions, in accordance with the budget made available by government, government's policy priorities and approved national higher education plans.

3.2.4 Government funding under the two frameworks

During 2000–2011, government funding of public universities fell into three phases: (i) 2000–2003, funds were generated and allocated in terms of the 1983 framework; (ii) 2004–2006, a migration strategy was applied to ensure that the new 2004 framework's implementation did not destabilise the funding of individual universities. The 2004 *Ministerial Statement on Higher Education Funding* (DoHET, 2004–2010) describes the operation of the three-year migration strategy for block grant payments to individual universities. (iii) 2007–2011, the implementation in full of the 2003 framework. Table 3.2 summarises government funding totals during these three phases.

Table 3.2. Summary of government allocations to public universities (rands millions)

	Allocations under 1983 funding				Migration to 2003 framework				Allocations under 2003 framework			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Block grants	6,204	6,718	7,123	7,818	8,568	9,145	9,956	10,233	11,550	12,767	14,533	16,387
Direct earmarked transfers	394	364	396	563	733	771	873	1,725	2,248	2,531	2,983	2,966
NSFAS	474	450	500	545	578	864	926	1,099	1,322	1,444	1,592	2,644
TOTAL	7,072	7,532	8,019	8,926	9,879	10,780	11,755	13,057	15,120	16,742	19,108	21,997

Source: DoHET, 2011b

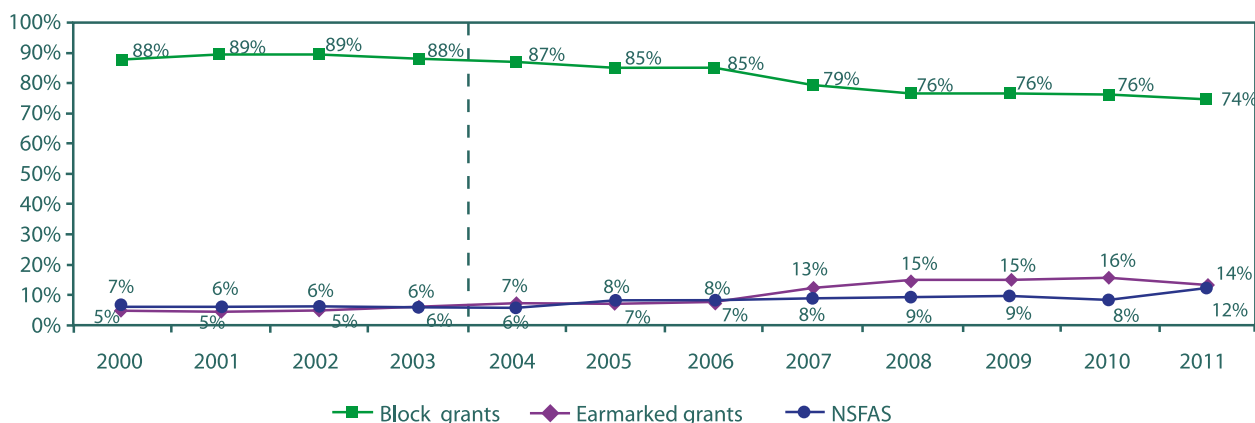
The categories employed in the table are:

- **Block grants** are funds generated by the formulas in the two frameworks. They are called 'block' grants because they are not earmarked for any specific purpose and can be spent at the discretion of the Council of each university.
- **Direct earmarked transfers** are funds transferred to individual universities to be used for designated purposes. Before 2006, designated purposes included payments of municipal rates, interest and redemption on loans and small capital projects. After 2007, the use of direct earmarked funds broadened to include teaching and research development grants, recapitalisation grants, and grants for foundation programmes, clinical training, veterinary sciences, infrastructure development, and institutional restructuring and redevelopment.

- **Funds that are not transferred directly to individual universities.** Most of these funds are transferred to the statutory body that controls the national student financial aid scheme (NSFAS). For convenience, in the table these funds are labelled 'NSFAS', although by 2008 small amounts had been allocated directly to other bodies, such as the African Institute for Mathematical Studies and the national institutes in the Northern Cape and Mpumalanga.

In 2003, the initial split among the different funding categories was assumed to be: block grants 89%, direct earmarked transfers 5% and NSFAS 6%. Figure 3.1 shows how the actual shares changed during the three funding phases.

Figure 3.1. Shares by broad categories of government funding allocations to public universities



Source: DoHET, 2011b

While the 1983 funding framework was in operation, the shares of the three categories were close to the assumptions made during the design period of the framework. In particular, in 2000–2003, block (or university council discretionary) grants remained above 88% but dropped to 85% by the end of the migration period in 2006. During the full implementation of the 2003 funding framework, a significant feature is the steady decline in the share of block grants: 74% in 2011 compared to 87% at the start of the migration period.

The changes in the proportions reflected in Figure 3.1 are the result of different average annual increases in the allocations made to each category. During each of the three phases, total block grants grew at slower rates than earmarked funds.

Public universities have expressed disquiet at the fall in block grant funding because they believe that their best interests are served by having large proportions of discretionary funds. However, universities also need to improve the governance of discretionary and earmarked funding, the latter being valuable for achieving particular focused objectives, such as infrastructure renewal, rather than addressing systemic weaknesses.

3.3 Review of the Performance of Public Universities

3.3.1 Performance goals and targets

The 1997 Education White Paper 3 and the 2001 National Plan for Higher Education laid out a series of goals against which the performance of the higher education system was to be measured. Funding was to be the primary lever for ensuring that these higher education goals were met.

The Centre for Higher Education Transformation (CHET) has published a number of reports on higher education performance indicators for the South African public university system. A 2004 report, *Developing Performance Indicators for Higher Education: A South African Case Study* (CHET, 2004), included a number of tables listing performance goals that had been included in either the 1997 White Paper or the 2001 National Plan. These goals were linked to quantitative indicators and to targets that could be extracted from the National Plan and other government documents published between 2001 and 2004.

Table 3.3 shows eight of the goals, indicators and targets used by the 2004 and later reports (CHET, 2004; CHET, 2010; CHET, 2012). These indicators and targets will be used to assess the performance of the higher education system in 2000–2010.

Table 3.3. Goals, indicators and targets for the public university system

Adapted 1997 White Paper goals for the public higher education system	Basis for goals	Targets for the public university system
Student enrolments in the public higher education system		
Goal 1: Opportunities for entry into the system must improve	Social and economic development require large numbers of students to enter public universities	Gross participation rate of 20% by 2010
Goal 2: The participation of disadvantaged students in the system must increase	Equity requires access to public higher education to be equalised	Gross participation rates are equalised
Goal 3: The participation of female students in the system must increase	SET, finance and management are important drivers of economic development	Enrolment proportions to be 30% SET and 30% BUS
Goal 4: Science & technology (SET) and business/management (BUS) enrolments in the system must grow	Knowledge economies require increasing numbers of citizens with high-level qualifications	15% of enrolments to be Master's plus doctoral students
Goal 5: Masters and doctoral enrolments in the system must grow		
Academic staff in the public higher education system		
Goal 6: The academic staff of the system must be well-qualified	There is a strong correlation between the quality of knowledge outputs and the qualifications of academic staff	50% of permanent academics to have doctorates, and 40% to have Master's degrees
Teaching and research outputs of the public higher education system		
Goal 7: The output of graduates of the system must improve	Increased levels of graduate outputs are needed to meet skills needs of the labour market	(a) Growth in total graduates must exceed growth in enrolments, and (b) cohort completion rate to be 65%
Goal 8: The high-level knowledge outputs of the system must improve	Research outputs in the form of doctoral graduates and research publications are critical if South Africa is to participate in the global knowledge economy	(a) Total research outputs must increase. (b) Ratios of doctoral graduates to permanent academics should be 0.15, and of research publications should be 1.0

Source: CHET, 2004; 2010; 2012

3.3.2 Goals 1 to 3: participation rates

A distinction is normally drawn between net participation rates and *gross participation rates*. A net participation rate is calculated by dividing the total of the population in a specified age group (e.g. 18–22 years) into the number of people in that age group who are registered in the higher education system. Higher education students who do not fall into the specified age group are not included in the calculation.

However, net participation rates are not normally used in comparative higher education statistics because of (a) differences between countries in the typical higher education age group, and (b) difficulties in removing students who do not fall into the specified age group from the higher education total.

The standard way is to use a gross participation rate, which is calculated by dividing the total population in a five-year age band into the total number of students enrolled in the higher education system, regardless of their age. The age-band usually selected for international comparative statistics is that of 20–24 year olds; Statistics South Africa presents its population estimates in the age bands 15–19 years and 20–24 years.

Here is an example of the calculation of a gross participation rate for South Africa:

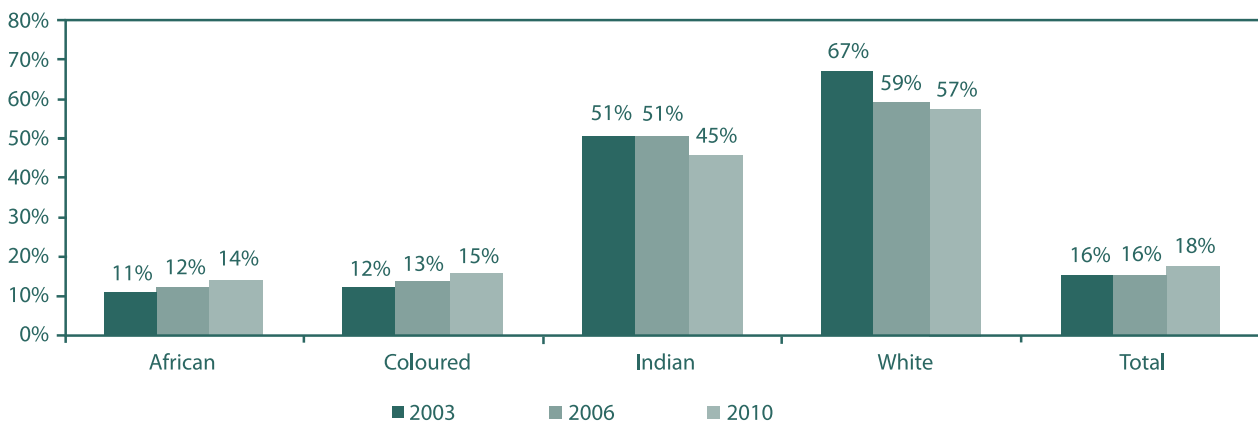
$$\text{Gross participation rate in 2010} = \frac{893\,000}{5\,019\,000} = 17.8\%$$

The Statistics South Africa mid-2010 estimate of the population in the age group 20–24 years was 5 190 000, and the total head count enrolment in the public university system was 893 000.

As Table 3.2 shows, Goal 1 set a gross participation rate target of 20% for the public university system by 2010. Calculations show that the total gross participation rates increased from 14% in 2000, to 16% in 2005 and to 18% in 2010. If the higher education student enrolments in FET colleges are added to the total enrolments in the public university system, in 2009 the public higher education system achieved a 20% gross participation rate.

Despite the improvement in the overall participation rate, Table 3.2 shows that Goal 2 (of equalised participation rates) has not been met.

Figure 3.2. Gross participation rates by race group in the public university system



Source: calculations based on Statistics South Africa mid-year population estimates for 2003, 2006 and 2010, and student enrolment data for the same years from the national Higher Education and Management Information System (HEMIS)

With regard to Goal 3, gross participation rates achieved gender equity. The participation rate of female students increased from 16% in 2002 to 21% in 2010. The male participation rate was 16% in 2003 and 15% in 2010.

3.3.4 Goals 4 and 5: student enrolments in the public university system

Goal 4 is concerned with student enrolments in what are considered to be key fields of study for economic development: (a) science and technology, covering agriculture and food technology, architecture and the built environment, computer and information sciences, engineering, health sciences, life and physical sciences, and mathematical sciences, and (b) business and management, covering accounting, auditing, banking, public finance, investments and securities, taxation, insurance, marketing, human resource management, and other management services.

Table 3.4 below summarises the public university system’s enrolments in these fields and in the humanities and social sciences. This last is a broad field that includes the visual and performing arts, education, languages and literature, psychology, philosophy and theology, social services, sociology, political studies, history and anthropology.

Table 3.4. Head count student enrolments in the public higher education system by broad field of studies ('000)

	2000	2002	2004	2006	2008	2010	Average annual increase
Science and technology	161 (29%)	172 (27%)	202 (27%)	212 (29%)	225 (28%)	251 (28%)	4.6%
Business and management	139 (25%)	197 (30%)	237 (32%)	223 (30%)	235 (29%)	279 (31%)	7.2%
Humanities and social sciences	255 (46%)	275 (43%)	305 (41%)	306 (41%)	340 (43%)	363 (41%)	3.6%
TOTAL	555	643	745	741	799	893	4.9%

Source: DoHET, 2010

As Table 3.4 shows, the growth rates in science and technology enrolments did not meet Goal 4's targets. Throughout 2000–2010, the proportion of students enrolled for science and technology majors remained well below 30%, while enrolments in business and management met the target of 30%.

Goal 5 deals with the proportion of Master's and doctoral students enrolled in the public university system. As modern knowledge economies require increasing numbers of citizens with high-level qualifications, the target is for 15% of enrolments to be Master's and doctoral students. Data available show that the average for the period 2000–2010 was only 1% for doctoral students and less than 6% for Master's students, which is way below the target.

3.3.5 Goal 6: Academic staff in the public university system

The goal of a well-qualified academic staff is based on the important role academics play in delivering the public university system's teaching and research mandates. The qualification requirement assumes (a) academics with doctoral degrees are the major producers of research outputs and the main supervisors of doctoral students; (b) quality teaching at university level requires permanent academic staff to hold at least a Master's degree. The targets for permanent academics' highest formal qualification are that at least 50% should have doctoral degrees and at least 90% should have either doctoral degree or a Master's degree.

During 2000–2010, the public university system fell short of these goals, as on average only 33% of staff had doctorates. A large proportion of academics were under-qualified: below Master's level was the highest formal qualification of on average 35% of the academic staff in public universities.

3.3.5 Goal 7: Graduate outputs

Goal 7 is the first that deals with the knowledge outputs of the public higher education system. The goal requires increased productivity – that the total of graduates produced must grow – and improved efficiency of graduate outputs.

A comparison of total growth in graduates and the total growth in head count enrolments shows that the graduate total increased from 88 000 in 2000 to 153 000 in 2010. The productivity aspects of the goal appear to have been met, since graduate enrolments grew from 4.8% to 5.7% per annum.

In South Africa, the standard measures of graduate output efficiency are the ratios between graduates and student enrolments in any given year, converted into cohort output equivalents. They indicate how many students entering the public university system can be expected to finally complete their qualifications and graduate.

The cohort output target is 65% for Goal 7, which signals that a drop out (or non-graduation) rate of 35% would be acceptable. The data shows that the public higher education system failed to meet this target during 2001–2010. However, the graduation rate for undergraduate cohorts entering the system did improve, from 45% for the first 5-year period to 55% for the second. The completion rate of cohorts of Master's and doctoral students remained below 50% throughout the period, again an indication of a poorly performing system.

3.3.6 Goal 8: High-level knowledge outputs

High-level knowledge outputs are critical if South Africa is to participate fully in the global knowledge economy. Like the Human Sciences Research Council and the OECD, this goal is analysed using research publications and doctoral graduates as the key outputs. Research publications consist mainly of articles that appear in accredited journals, which have editorial boards of experts in a field and employ 'blind' peer review procedures.

During 2000–2010, the productivity of the public university system improved. The total of research publications (research articles, published research conference proceedings and research books) increased from 5 602 in 2000 to 9 748 in 2010, an average annual increase of 5.2%. The doctoral graduate total grew at a lower average annual rate of 3.6%, rising from a total of 961 in 2000 to 1 421 in 2010.

The efficiency targets for Goal 8 in Table 3.2 are one research publication per permanent academic per year, and 0.15 doctoral graduates per year. The doctoral graduate target assumes that each permanent academic should produce at least one doctoral graduate every seven years. The public higher education system failed to meet these efficiency targets. However, the publication ratio did improve, from 0.38 to 0.58 per permanent academic in 2010. The average doctoral output ratio was below half of the target ratio of 0.15.

3.3.7 System and individual institutional performance

The performance of universities in South Africa differs widely, and the funding implications of this differentiated public university system will be discussed later in the chapter.

The CHET has argued that the knowledge-production performance of any university should be judged within its 'academic core', which consists of two elements: (a) the inputs that the university has available for teaching and research, and (b) the knowledge outputs produced on the basis of these inputs (CHET, 2011a).

At the input level, the important student-related components are the proportion of student enrolments in SET and BUS, and Master's and doctoral programmes. The important academic staff-related components are their formal qualifications and the numbers of doctoral students they are supervising.

At the output level, the knowledge-production aspects are postgraduate and undergraduate student graduation rates, and ratios of doctoral graduates and research publications to permanent academics.

Table 3.5 includes values for these academic core indicators from data that universities are required to submit annually to the national HEMIS. The data values are three-year averages for 2008–2010. The targets set out in the final row of the table are based on those employed for the public university system in Table 3.2, together with further adaptations by the CHET. The public universities are grouped into three clusters, based on comparing each university's average for each input and output indicator. The methodology used was simple, but possibly controversial. A four-point rating scale was used:

- 4 = meets or exceeds target
- 3 = average is in range 75% to 99% of target
- 2 = average is in range 50% to 74% of target
- 1 = average is less than 50% of target

Then for each university, separate average ratings were calculated for the five input and five output indicators. These average scores were sorted first by average for the five output indicators and then by the combined average for input plus output indicators.

Finally, the universities were placed in the clusters using these criteria:

- Cluster 1: either an output average above 3, or an input plus output average above 3
- Cluster 2: output or input averages above 2, and an overall average of 2
- Cluster 3: either an output or input average below 2

These three clusters are used in the financial analyses that follow.

Table 3.5. Public universities clustered on basis of academic core indicators

	Input indicators: averages for 2008 – 2010					Output indicators: averages for 2008 – 2010				
	SET majors as % of total head count enrolments	BUS majors as % of total head count enrolments	Masters + doctors as % of total enrolments	% of permanent academics with doctorates	Ratio of doctoral enrolments to permanent academics	Ratio of bachelors and diploma graduates to undergraduate enrolments	Ratio of masters graduates to master enrolments	Ratio of doctors graduates to doctors enrolments	Ratio of doctors graduates to permanent academics	Ratio of research publications to permanent academics
CLUSTER 1										
University of Cape Town	41%	23%	19%	61%	1.1	20%	27%	15%	0.17	1.2
Stellenbosch University	43%	21%	23%	53%	1.1	20%	22%	14%	0.16	1.2
Rhodes University	24%	18%	15%	56%	0.9	22%	26%	12%	0.11	1.0
North West University	18%	12%	7%	49%	0.8	26%	25%	15%	0.12	0.5
University of Pretoria	36%	14%	13%	40%	0.9	22%	21%	13%	0.11	0.7
University of KwaZulu-Natal	36%	18%	13%	40%	0.8	20%	16%	13%	0.11	0.7
University of the Witwatersrand	45%	17%	23%	53%	1.1	17%	16%	11%	0.11	0.9
CLUSTER 2										
University of Johannesburg	31%	39%	5%	22%	0.6	20%	21%	12%	0.07	0.5
University of the Western Cape	33%	15%	11%	49%	0.9	17%	20%	11%	0.10	0.5
University of the Free State	30%	17%	10%	44%	0.8	18%	22%	13%	0.10	0.6
Nelson Mandela Metropolitan University	33%	29%	8%	38%	0.7	19%	19%	13%	0.09	0.4
University of Fort Hare	24%	18%	9%	33%	0.7	17%	22%	12%	0.08	0.4
Durban University of Technology	48%	35%	2%	11%	0.1	22%	19%	10%	0.01	0.1
Tshwane University of Technology	39%	34%	2%	19%	0.2	20%	14%	12%	0.02	0.2
Cape Peninsula University of Technology	49%	30%	3%	12%	0.2	24%	12%	10%	0.02	0.2
Central University of Technology	46%	29%	2%	27%	0.2	20%	13%	7%	0.00	0.1
CLUSTER 3A										
University of Zululand	14%	10%	4%	34%	0.6	16%	15%	11%	0.07	0.3
University of Limpopo	47%	13%	11%	20%	0.2	18%	12%	9%	0.02	0.1
Vaal University of Technology	52%	40%	1%	14%	0.1	16%	10%	11%	0.01	0.1
University of Venda	39%	20%	4%	32%	0.3	21%	10%	6%	0.02	0.2
UNISA (University of South Africa)	11%	42%	2%	32%	0.6	7%	9%	8%	0.05	0.5
Walter Sisulu University	26%	29%	1%	11%	0.0	15%	4%	4%	0.00	0.1
Mangosuthu University of Technology	58%	33%	0%	6%	0.0	14%	0%	0%	0.00	0.0
CHET TARGETS FOR ACADEMIC CORE	30%	30%	15%	50%	1.0	20%	25%	15%	0.15	1.0

Source: Indicator, targets and notion of academic core derived from CHET, 2010; CHET, 2011a; CHET, 2012; DoHET, 2010; www.dhet.gov.za

In terms of the differentiated performance of universities, the following combination of indicators stands out:

- Input indicator: percentage of permanent academics with doctorates.
- Output indicator: ratio of graduates to enrolments (undergraduate and postgraduate levels).
- Output indicator: ratio of research publications to permanent academics.

Universities can use these indicators to inform future strategies for moving up into the next cluster. For example, a university in Cluster 2 that has a relatively high percentage of permanent academics with doctorates could move up into Cluster 1 by slightly improving its graduation success rate and significantly improving its research publications output (moving its output, or input plus output average, to above 3). Similarly, a university in Cluster 3 could move up into Cluster 2 by significantly increasing the percentage of permanent academics with doctorates, thus increasing its throughput and research publications. Ideally, all universities should move into Clusters 1 and 2 through good long-term strategic planning and using discretionary funding effectively.

3.3.8 Issues arising from analyses of the performance of public universities

During 2000–2010, the public university system as a whole under performed. Although many universities excel, some strive for improvement and others require revitalisation and major improvements in productivity and quality. Some of the main issues that arise are:

- (i) Gross participation rates in the public university system are low and have not met the target of a 20% rate set by the 2001 National Plan for 2010.
- (ii) Gross participation rates have also been unequal. The participation rate for White students has been close to 60%, whereas the participation rate for African students (which increased over the period) was less than 15% at the end of the period.
- (iii) Student enrolments in the major fields of study and the number of research students did not meet the targets set. For the period 2000–2010, humanities and social science majors were over-represented, with an average enrolment share of 42% compared to the target of 40%. Enrolment in science and technology majors was 28% compared to the target of 30%. The proportions of Master's and doctoral students were less than half the targets set throughout the period.
- (iv) The academic staff of the system are under-qualified. During 2000–2010, the highest formal qualification of over a third of permanent academics was below Master's level, compared to the target of 10%.
- (v) The output performance of the system was poor throughout 2000–2010. Student drop-out rates were high, resulting in less than 50% of any cohorts of students who entered the system completing their programmes and graduating. High-level outputs in the form of research publications and doctoral graduates were also well below the targets set.

It is clear that a revised funding framework must include incentivising public universities to improve their individual performances, which would improve the overall performance of the system.

3.3.9 Performance at individual university level

Table 3.4 shows that the public university system can be differentiated using a number of input and output variables related to the academic core of individual institutions. However, the three clusters represented are not the result of deliberate government decisions; government did not intend three distinct clusters to result from implementing higher education goals and the 2003 funding framework.

A basic thread running through the block grant components of the 2003 funding framework was not to have separate funding streams for different universities. Institutions were treated equally, other than based on enrolment size and enrolment of disadvantaged students. Universities with large enrolments did not receive part of the institutional component of the block grants because they had the advantage of economies of scale. Universities that recruited large numbers of disadvantaged students received additional funding under the institutional component of the block grant.

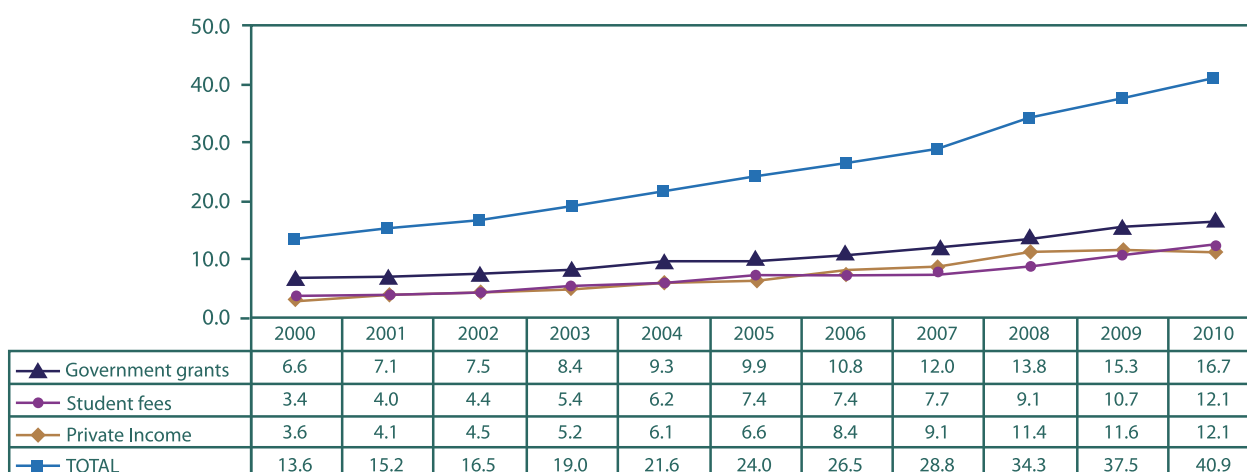
A review of the total income of the public university system (government funding + student fees + private) will show why the three different clusters emerged as a consequence of the 2003 funding framework.

3.4 Review of the Income of Public Universities

3.4.1 Total income of the system

Figure 3.3 gives a broad overview of the total income of all institutions in the public higher university system for 2000–2010. The data for the table was collected from: (a) the Department of Education’s annual publication *Information on the State Budget of Higher Education*, (b) the annual *Ministerial Statements on Higher Education Funding*, and (c) the summaries of the annual financial reports of public higher education institutions produced by the Department of Education/DoHET. The data ends in 2010, which is the latest year for which full financial reports are available.

Figure 3.3. Total income of public universities (rands billions)



Source: DoHET summaries of financial statements included in annual reports of each university

With regard to Figure 3.3, the following should be noted:

- (i) The category of government grants includes all block but not all earmarked grants. These grants are not recorded as institutional income because national student financial aid funds are transferred to a statutory body which then allocates funds to students.
- (ii) The student fees category includes all tuition and class fees, and accommodation or residence fees.
- (iii) The private income category includes donations, investment income, and income from non-government contracts for research or the delivery of other services.

Figure 3.3 shows that the share of government grants in the total income of the public higher university system fell from 49% in 2000, to 44% in 2005, and to 40% in 2010. This drop in government funding was met by student fees and private funds. As a proportion of total income, student fees rose from 25% in 2000, to 29% in 2005, and to 30% in 2010, while private income increased from 26% in 2000, to 27% in 2005, and to 30% in 2010.

In 2000–2010, the total income of public universities grew at an average rate of 11.6% in nominal rands and 5.2% in real rands, as Table 3.6 shows. However, the growth rates were different for the three main funding categories. In real terms, government grants increased by an average annual rate of 3.3%, which was about half the increases in student fees (7.1%) and private income (6.4%).

Table 3.6. Income in 2000 compared to 2010 income (rands millions)

	2000	2010		Average annual growth: 2000 – 2010	
		Nominal	Real	Nominal	Real
Government grants	6,628	16,655	9,210	9.7%	3.3%
Student fees	3,381	12,132	6,709	13.6%	7.1%
Private income	3,591	12,090	6,686	12.9%	6.4%
TOTAL	13,600	40,877	22,605	11.6%	5.2%

Source: nominal rands: DoHET summaries of financial statements included in annual reports of each university; real rands: calculations based on nominal rand totals and consumer price index data from Statistics South Africa

Table 3.7 takes the income totals from Table 3.6 and divides them by the university system's full-time equivalent (FTE) enrolled student totals, which were 386 000 in 2000 and 600 000 in 2010. These totals do not take account of the weightings in the funding grid for teaching input units.

Table 3.7. Income per FTE enrolled student (rands thousands)

	2000	2010		Average annual growth: 2000 – 2010	
		Nominal	Real	Nominal	Real
Government grants	17.2	27.8	15.4	4.9%	-1.1%
Student fees	8.8	20.2	11.2	8.7%	2.5%
Private income	9.3	20.2	11.1	8.0%	1.8%
TOTAL	35.2	68.1	37.7	6.8%	0.7%

Sources: nominal and real rand data from Table 3.6; FTE student data from the national Higher Education and Management Information System (HEMIS)

Table 3.7 shows that government grants per FTE enrolled student rose from R17,200 in 2000 to R27,800 in 2010, in nominal rands. Student fees per FTE enrolled student, also in nominal rands, rose from R8,800 in 2000 to R20,200 in 2010. The average growth rates show that, in real terms, government funding per FTE enrolled student fell by 1.1% annually between 2000 and 2010, while student tuition fees per FTE enrolled increased by 2.5% per year.

3.4.2 Amendment to institutional clusters

The financial analysis uses the three clusters of universities identified in Table 3.5, with one amendment. The University of South Africa (Unisa) is not included in Cluster 3 but treated as a separate entity. This is because of the size of its enrolments (293 000 heads in 2010, or 33% of all enrolments in the public university system) and because it is South Africa's dedicated distance-education institution. The amended Cluster 3 will be labelled Cluster 3A, and the University of South Africa will appear as Unisa.

Table 3.8 adjusts the clusters from Table 3.5 by adding information about their government planning categories and historical classifications. The planning categories are university, university of technology, and comprehensive university. A university is defined as an institution that offers general formative and professional academic programmes. Universities of technology are defined as institutions that offer primarily career-focused programmes. Before 2005, universities of technology were classified as technikons, and so the programmes they offer are described as technikon-type programmes. A comprehensive university is then defined as an institution which offers both university- and technikon-type programmes.

Table 3.8. Public higher universities by institutional cluster

	Category	History
CLUSTER 1		
University of Cape Town	University	Historically white university
Stellenbosch University	University	Historically white university
Rhodes University	University	Historically white university
North West University	University	Merger of historically white and historically black universities
University of Pretoria	University	Historically white university
University of KwaZulu-Natal	University	Merger of historically white and historically black universities
University of the Witwatersrand	University	Historically white university
CLUSTER 2		
University of Johannesburg	Comprehensive university	Merger of historically white university and historically white technikon
University of the Western Cape	University	Historically black university
University of the Free State	University	Historically white university
Nelson Mandela Metropolitan University	Comprehensive university	Merger of historically white university and historically white technikon
University of Fort Hare	University	Historically black university
Durban University of Technology	University of technology	Merger of historically white and historically black technikons
Tshwane University of Technology	University of technology	Merger of historically white and historically black technikons
Cape Peninsula University of Technology	University of technology	Merger of historically white and historically black technikons
Central University of Technology	University of technology	Historically white technikon
CLUSTER 3A		
University of Zululand	Comprehensive university	Historically black university
Vaal University of Technology	University of technology	Historically white technikon
University of Limpopo	University	Historically black university
University of Venda	Comprehensive university	Historically black university
Walter Sisulu University	Comprehensive university	Merger of historically black university and historically black technikons
Mangosuthu University of Technology	University of technology	Historically black technikon
UNISA (University of South Africa)	Comprehensive university	Merger of historically white university and historically white technikon

Source: institutional clusters in Table 3.5; categories and historical descriptions of universities are those used by the DoHET

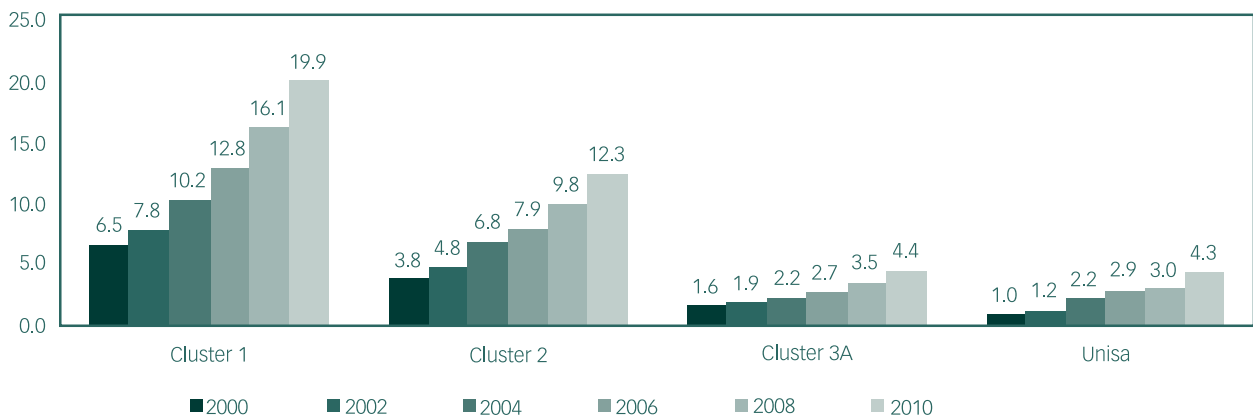
In the history column, the descriptions are based on pre-1994 governance structures, in particular the tri-cameral parliament system and the 'independent republics' (Transkei, Bophutatswana, Venda, Ciskei). Historically white higher education institutions are those that fell under the control of the chamber for Whites (House of Assembly). Historically black institutions were those controlled by the four 'republics' and by the departments and chambers responsible for the education of Africans, Coloureds and Indians. The mergers occurred during 2004–2005 and, for the purposes of the figures that follow, institutional data for pre-merger years has been consolidated under the name of the new institution.

3.4.3 Total income of public universities by amended institutional clusters

Figure 3.4 shows the total income of public universities for 2000–2010, including all government grants, student fees and private income.

The income distribution in the public university system is seriously unequal. For example, in 2010, the seven universities in Cluster 1 had 48% of the total income of the public university system but only 30% of the total FTE student enrolment. In the same year, the nine institutions in Cluster 2 (three universities, two comprehensive universities and four universities of technology) had 32% of the system's FTE student enrolment but only 30% of total income.

Figure 3.4. Income from all sources by cluster (rands billions)



Source: Income totals in Figure 3.3; DoHET summaries of financial statements included in annual reports of each university.

These income inequalities can be represented in a different way. Figure 3.5 shows each cluster's average income from all sources per FTE enrolled student. In 2010, private income per FTE student for Cluster 2 was 0.57 of the Cluster 1 average. Cluster 3A's private income per FTE students was 0.46 of that of Cluster 1.

Figure 3.5. Total income from all sources per FTE enrolled student by cluster (rands thousands)



Source: institutional clusters in Table 3.5; FTE student data from the national Higher Education and Management Information System (HEMIS)

3.4.4 Private income of public universities by amended institutional clusters

The income inequalities stem in part from the clusters' different levels of private income. As indicated earlier, the private income category includes donations, investment income, and income from non-government contracts for research or the delivery of other services. Two points that should be noted are:

- (1) In 2010, the seven institutions in Cluster 1 generated a total of R7,912 million in private income, or 40% of their total income. In comparison, the nine institutions in Cluster 2 generated R2,790 million, or 23% of their total income. The six institutions in Cluster 3A (one university, three comprehensive universities, two universities of technology) generated a total of R453 million in private income, or 10% of their total income.
- (2) Academics play a major role in generating private income for public universities, as they raise large amounts through research grants and activities, enhance the reputation of a university and generate donations and (indirectly) investment income. In 2010, the seven institutions in Cluster 1 raised 64% of the public university system's total income of R12,315 million from private sources and employed 44% of all permanent academics. The nine institutions in Cluster 2 had 33% of all permanent academics, but only 25% of the public university system's private income. The six institutions in Cluster 3A had 15% of the system's permanent academics and only 4% of its private income.

3.4.5 Issues arising from income review

The different increases in fee income and government grants imply that the amount of government funding is not sufficient to meet the needs of the public university system. This suggests that, when the 1983 funding framework was replaced by that of 2003, no mechanisms were put in place to determine how much government funding would be appropriate for public universities. In other words: can a government funding requirement be generated by a framework based on planning and institutional performance?

As subsections 3.4.3 and 3.4.4 show, the public university system contains major inequalities in the distribution of income. Such inequalities may be seen as inevitable consequences of the distributive mechanism built into the 2003 funding framework for public universities. However, it is not clear that these unequal distributions of income were intended to be outcomes of the implementation of the 2003 funding framework. Therefore, if income inequalities are unintended consequences of its implementation, should any of the 2003 funding framework's basic principles be reconsidered?

A final issue is the differentiation within the public university system. The analyses in subsections 3.3.7 and 3.4.2, of institutional performance relative to government policy goals, show that universities can be divided into at least three distinct clusters, each with different levels of output productivity and efficiency. Table 3.9 gives the total output data for the three clusters for the years 2008–2010.

Table 3.9. Output totals for 2008–2010

	All graduates below masters	Masters graduates	Doctoral graduates	Research publications
CLUSTER 1	159,221	17,910	2,968	19,944
CLUSTER 2	132,666	4,163	702	4,225
CLUSTER 3	178,741	5,088	822	5,056
UNISA	65,217	1,261	193	1,931
OVERALL TOTAL	470,628	27,161	4,492	29,225

Source: FTE graduate data from the national Higher Education and Management Information Systems (HEMIS); www.dhet.gov.za

For 2008–2010, Cluster 1 produced 66% of all Master's and doctoral graduates and 68% of all research publications. Therefore, this cluster was the most efficient and productive grouping of universities for higher-knowledge output. This raises the issue of whether revised funding mechanisms should take account of institutional differentiation.

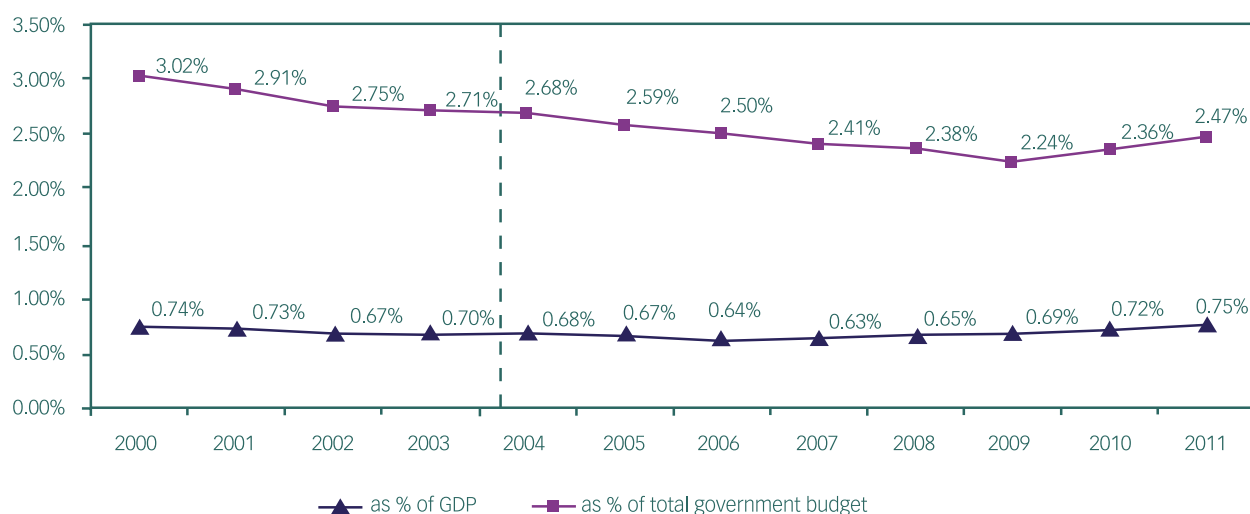
3.5 Discussion of the Funding Issues

3.5.1 Determining government funding levels

One argument is that government funding of a public university system should be linked to predetermined proportions of either GDP or total government expenditure. However, what these proportions should be, or whether lessons can be learned from the practices adopted by other countries, is not clear.

GDP and total government expenditure indicators in South Africa can be tracked over specific periods of time. Graph 3.6, which is based on the DoHET's reports on the *State Budget for Higher Education* (DoHET, 2011b), gives the changes for 2000–2011, which is divided into the implementation phases discussed in Figure 3.1.

Figure 3.6. Total government allocations to public universities as % of GDP and total government expenditure



Source: DoHET, 2011b

Figure 3.6 shows that funding for public universities as a proportion of total government funding fell during the 1983 framework period and the migration phases (2000–2006). It dropped further during the period of full implementation of the 2003 framework, reaching the lowest point in 2009. In 2007, government funding of public universities as a proportion of GDP reached its lowest point but then increased over the next four years. The proportion of 0.75% in 2011 was the highest during the 12-year period.

Any analysis of the appropriate amount of government funding for public universities must be based on an important feature of the 2003 framework: that the framework should be used in conjunction with approved plans for student inputs and outputs. This implies that, because the framework was not based on actual institutional costs, a mechanism to link planned growth targets to government budget allocations for public universities needs to be developed.

The first system-wide student input and output planning targets were published in October 2007 in a *Ministerial Statement on Student Enrolment Planning* (DoHET, 2007) that covered the academic and financial years 2005–2010. In April 2011, an updated set of targets was published in a second *Ministerial Statement on Student Enrolment Planning* (DoHET, 2011c) that dealt with the academic and financial years up to 2015.

The *Ministerial Statements* contain a number of system-wide planning targets, which are the aggregates of the targets set for individual universities. These system and institutional targets cover the following inputs and outputs:

- Student enrolments by broad fields of study and by qualification level;
- Total full-time equivalent students (without breakdowns by field or course level);
- Average success rates in all courses in all programmes (without breakdowns by field or course level);
- Total graduates produced (without breakdowns by fields of study or qualification level);
- Ratios of total graduates to total enrolments (without breakdowns by fields of study or qualification level).

The targets that were set in 2007 for the 2010 academic year are summarised in Table 3.10.

Table 3.10. Planning targets set for 2010 academic year

	Targets
FTE enrolled students	159,221
Head count students by major field and qualification	
Science and technology	30%
Business and management	33%
Humanities and the social sciences	37%
Total head count enrolments	816,200
Undergraduate diplomas	34%
Undergraduate degrees	49%
Postgraduate below masters	9%
Masters and doctors	8%
Total graduates	142,200
Ratio of total head count enrolments to total graduates	17%

Source: DoHET, 2007

The targets give a clear picture of what the student enrolments in the public university should have been in 2010. However, the output targets shown are far broader than those used in Table 3.5 (subsection 3.3.7). Nevertheless, information on research publications is added, data of this kind can be used to link planning targets to government funding allocations. The planning targets could be:

- FTE student enrolment totals as input measures;
- Total graduates as an output measure;
- Total research publications as a further output measure.

By giving them suitable weightings (e.g. 0.60 for enrolments, 0.30 for graduates, and 0.10 for research publications), these totals could be converted into a composite volume-of-activity total. Government could then set weighted, average annual increases in volumes of activity as targets for the public higher education system and, at the same time, commit to making funds available to support the approved increases in volumes. The annual increase in total government funds for public universities would be: previous year's allocation + inflation-based increase + approved increase in volumes of activity. The total of government funds made available through applying this mechanism could then be distributed to individual universities under a revised funding framework.

Further detailed analyses are needed before firm proposals for a mechanism of this kind can be developed further.

3.5.2 Reconsidering basic funding principles

Subsection 3.4.5 raised the questions (a) of whether the major income distribution inequalities within the public university system were intended consequences of the 2003 funding framework, and (b) if they were not, what changes would need to be made to the framework. To discuss these issues, a more detailed picture of government allocations is required. Table 3.11 sums up details of direct government grants to universities under the 2003 funding framework.

Table 3.11. Details of government transfers to universities (rands millions)

	Migration to 2003			Full implementation of 2003 framework					Average annual increases
	2004	2005	2006	2007	2008	2009	2010	2011	
Block grants: Council controlled funds	7,988	8,541	9,171	10,100	10,853	12,700	14,534	16,387	10.8%
Funding for inputs	6,069	6,465	6,912	7,478	8,110	9,382	10,643	11,857	10.0%
Funding for inputs	1,919	2,076	2,259	2,622	2,743	3,318	3,891	4,530	13.1%
Earmarked transfers	1,313	1,375	1,558	1,841	2,573	2,558	2,940	2,853	11.7%
Interest & redemption on loans	146	130	100	85	70	41	31	20	-24.7%
Infrastructure & efficiency projects	0	0	0	445	1,245	1,462	1,585	1,615	
Teaching development grants	300	306	329	307	337	345	393	420	4.9%
Research development grants	280	279	256	148	257	197	166	7	-41.0%
Foundation programmes	85	91	105	114	131	146	185	177	11.0%
Clinical training of health professionals	0	0	0	8	200	300	330	350	
Veterinary Sciences	0	19	50	54	58	67	102	116	
Multi-campus	0	0	0	0		0	148	148	
Developing former Vista campuses	0	0	150	80	40	0	0	0	
Institutional restructuring	502	550	568	600	235	0	0	0	-100%
Block grants + Direct earmarked transfers	9,301	9,916	10,729	11,941	13,426	15,258	17,474	19,240	10.9%

Source: DoHET, 2011b

The totals in Table 3.11 do not match those in Table 3.2 (subsection 3.2.4) because Table 3.2 reflects the total government budget for public universities, including earmarked funds such as NSFAS, which are not transferred directly to universities.

The main features of the amounts and proportions for 2011 reflected in Table 3.11 are:

- Block funds represented R16,387 million (or 85%) of total direct transfers to universities. These funds were allocated as undesignated funds, which may be spent on any teaching, research or administrative activities at the discretion of the Council of the university.
- Direct earmarked transfers amounted to R2,583 million, which was spread over a range of projects, the major ones being grants for improving the physical infrastructure of universities.

- Student enrolment inputs generated R11,857 million of the total block grant, or 72% of the block grant total and 62% of the overall total of block grants and direct transfers.
- Graduates and research outputs generated R4,530 million of the block grant total, or 28% of the block grant total and 24% of the overall total of block grants and direct transfers.

As suggested by the performance analysis in section 3.3, improvements in the funding framework should address system development and institutional performance and should be a major consideration of the ministerial committee tasked with reviewing the funding framework. The necessary revisions to the funding framework should also present a sharp instrument for improving outcomes in ways that do not undermine institutional autonomy.

The 2012 *Green Paper for Post-School Education* (DoHET, 2012) suggests that (a) income inequalities of the kind discussed in subsections 3.4.3 and 3.4.4 were unintended consequences of the 2003 funding framework, and (b) changes will have to be made to the framework. The Green Paper has this to say about the 2003 funding framework (DoHET, 2012, 6.7, pp 46-47):

- (i) Instruments within the 2003 funding framework are inadequate as far as the promoting of inter-institutional equity is concerned. The current funding mechanisms appear to entrench, and even accentuate inequalities, between previously advantaged and previously disadvantaged institutions.
- (ii) Earmarked funding is an important steering mechanism to ensure that some of the serious problems faced by the public university system are addressed. Consideration is being given to the greater use of such funding to introduce and develop key infrastructure programmes aimed at achieving greater institutional equity in the system.

To function more effectively, the funding framework will need to be adapted to the differentiation that has emerged, to foster a shift towards public universities themselves enhancing their performance, with individual universities moving up into a higher performing cluster. Such performance improvement can be supported by funding for new physical infrastructure (buildings and equipment), improving qualifications of academic staff, new teaching methodologies and building research centres that are locally, continentally and/or globally relevant. The share of the national budget allocated to direct earmarked transfers should not increase, as that would be an inappropriate response to the equity and development challenges of public universities and is an outmoded form of state intervention, which is popular in less democratic countries. The public university system must progressively mature through internal leadership and good governance applied to the challenges of rapidly improving equity, quality and a development-oriented mission.

3.5.3 Funding and institutional differentiation

The 2012 *Green Paper for Post-School Education* has in effect proposed dropping the 2003 funding framework's assumption that the public university system is a unitary one for funding purposes. The Green Paper adds that other higher education policies must now be based on recognising that public universities are part of a formally differentiated system.

The Green Paper makes a number of points about differentiation in the public university system (DoHET, 2012, 6.2, pp 39-41).

A differentiated public university system is needed because not all institutions can or should fulfil the same role. Differentiation would enable institutions to find their niches in ways that enhance their ability to meet national needs, to provide a diversity of academic programmes, to provide for flexibility and innovation throughout the system, and to increase overall participation rates in higher education in South Africa.

The development of a differentiated system for university education must take account of historical inequalities between institutions and, in some cases, between campuses within institutions. It must also take account of the existing institutional types of universities, universities of technology and comprehensive universities. The differentiation process must ensure that meaningful and sustainable roles are given to the historically black institutions. These roles must take into account their history, the particular academic and developmental needs of their regions, and their institutional ambitions for development.

The university system contains a few research-intensive universities, which are responsible for most of the postgraduates in the system and are engaged in cutting edge research and innovation. These universities are clearly a valuable

national asset and must continue to develop their capacities. However, their needs should not divert attention from the requirement that all universities, and particularly the poorer ones, have sufficient resources such as adequate electronic libraries, laboratories and lecture rooms, and sufficient staff to fulfil their allotted functions as effective institutions in a differentiated system.

Some of the principles which should be applied when a formally differentiated public university system is created are these:

- (i) The current categories of universities, universities of technology and comprehensive universities must continue to be used. A variety of institutions are required in order to ensure that the public university system serves national interests. The public university system should comprise a continuum of institutions, ranging from specialised, research-intensive universities to largely undergraduate institutions, with various levels of research focus and postgraduate niches at Master's and/or doctoral level.
- (ii) All institutions in the public university system must offer high-quality undergraduate education.
- (iii) The university system must become an integral part of the post-school system, interfacing with FET and other vocational colleges, SETAs, employers, labour and other stakeholders. Such cooperation should be taken into account when developing an institution's programme mix and planning.

Table 3.5 placed the 23 public universities in South Africa into three clusters based on their performance in meeting targets linked to national policy goals. The three clusters were amended in Table 3.7 by removing Unisa from Cluster 3. The 'history' column in Table 3.9 shows clearly that the clusters are to a large extent functions of the institutions' origins. The first cluster consists of five historically white universities and new institutions formed by the merger of a historically black university with a larger historically white university.

The clusters in Table 3.5 could form the basis for developing a differentiated system along the lines of the Green Paper principles summarised above, but further, more detailed analysis would be needed first.

What is clear is that the policies on institutional differentiation **are** an essential first step towards establishing a new funding framework for public universities in South Africa. If the principle of a unitary funding system is dropped, then a revised funding framework must be one that (a) overcomes funding inequalities, (b) improves the goal-directed performance of individual universities, (c) ensures that all universities offer high-quality undergraduate programmes, and (d) protects and strengthens those universities that produce the high-quality knowledge outputs that South Africa needs to compete in the global knowledge economy.

South Africa needs a sufficient number of public universities to be sites of cutting-edge research (a driver of innovation) and high-quality teaching. For this, funding needs to be oriented towards a strong performance focus. The funding of public universities should aim to stimulate innovation and quality teaching, thereby allowing universities to expand their portfolios. A performance focus need not (and should not) exclude critical reforms to admission and student support.

3.6 Conclusion

A new framework, based on different funding principles and on a policy of institutional differentiation, will have to be introduced in South Africa. The Commission's concern is the size, direction and impact of funding higher education and the post-school system as a whole. In particular, in order to increase new knowledge that will address economic and societal problems, the three major areas that require funding are: higher education qualifications, further education qualifications, and research. These three areas all need to grow significantly in the next three decades. However, the fiscal room is limited for increasing funding of the post-school educational system.

Given the funding constraints, the review of the funding framework needs to be supported by research into a future funding model that optimally divides revenue into funding higher education, further education and research.

3.7 Recommendations

With respect to funding higher education and the post-school system as a whole, the Commission recommends that:

- Government should introduce a differentiated funding framework for a differentiated public university system, by shifting from a unitary system to three funding frameworks – one for each cluster.
 - For Cluster 1: this funding framework would reward further advances in equity, development and improved performance in the input and output indicators;
 - For Cluster 2: this funding framework would reward improved performance in the input and output indicators, and moving up into Cluster 1; and
 - For Cluster 3: this funding framework would reward improved performance in the input and output indicators, and moving up into Cluster 2, pushing for performance in order to win rewards.
- In order to better understand and analyse the performance and funding of the further education training (FET) sector, government should expand the HEMIS system to incorporate FET sector data, or introduce a parallel system to collect relevant data for analysis of the FET sector, a FEMIS (further education management information system). Readily available financial, funding and performance data is needed to inform a future funding framework and annual funding allocations, and to support decision-making by FET colleges.

Part 2

CLIMATE CHANGE AND ENVIRONMENTAL SUSTAINABILITY: OPPORTUNITIES AND RISKS FOR INCLUSIVE GROWTH AND INNOVATION.

Climate change poses significant challenges for South Africa, but responding to these challenges may also provide opportunities for innovation that can support inclusive growth.

South African communities and households are highly vulnerable to the immediate and long-term effects of climate change. This part of the Submission investigates three ways to reduce the risks faced by the most vulnerable communities: building a rural sector that is resilient to climate change and natural disasters; strengthening the framework for disaster management; and re-invigorating municipal solid waste management practices. It recommends actions that combine responding to climate change and addressing the national priorities of reducing poverty and inequality and creating jobs. The intergovernmental fiscal system can help seize the opportunities of the green economy. These three chapters provide the basis for recommendations of measures to be put in place that will minimise the risks and realise the opportunities for:

- (a) Sound environment planning and management mechanisms, and responsive infrastructure and service delivery to mitigate the effects of climate change and reduce the impact of disasters;
- (b) Appropriate funding mechanisms;
- (c) Appropriate techniques to assess the vulnerability of communities to climate change and natural disasters.

Chapter 4

THE IMPACT OF CLIMATE CHANGE ON SOUTH AFRICA'S RURAL AREAS

4.1 Introduction

South Africa has identified rural development as a national priority for meeting the country's Millennium Development Goals (MDGs), which aim to cut poverty by half by 2015. About 40% of the country's underprivileged population reside in rural areas and depend, either directly or indirectly, on land for their livelihood. Agriculture plays a significant role in the country's economy, contributing in 2000 about 2.9% of GDP, 10% of formal employment and 10% of the total value of exports. However, global climate change will affect the government's efforts to alleviate poverty and fast-track development in rural areas.

In South Africa, climate change is expected to result in higher temperatures, more sporadic rainfall patterns and frequent droughts. Superimposed on the country's already scarce water resources, these impacts are expected to affect all sectors of the economy. South Africa is particularly vulnerable to climate change because of its dependence on climate-sensitive economic sectors, high levels of poverty and the inter-related impacts of HIV/AIDS. The poor are disproportionately affected, as they rely on sectors that will be directly affected by climate change: agriculture, biodiversity, ecosystems and water supplies.

Agriculture is highly dependent on climate and therefore particularly vulnerable. Climate change will have a significant impact on low-input farming systems in developing countries in Africa. Smallholder farmers are expected to be more vulnerable, as they lack the means for adaptation.¹³ The effect of climate change on agricultural output will directly affect rural communities, through reduced income and employment, and knock-on effects for rural economies as a whole. The result will be to put considerable strain on rural local governments, which provide services and promote development at a local level. Local municipalities need to plan for the negative impacts of climate change, as their burden will grow because of the expected increase in natural disasters, water scarcity, reduced agricultural production and food security, and diseases.

Some municipalities will be more sensitive to these changes than others, and many municipalities may not have the capacity to adapt due to existing developmental challenges. These include low incomes, weak institutions, low levels of education and primary healthcare, lack of markets and infrastructure, and already-degraded ecosystems. Rural communities and local municipalities will need to find appropriate and efficient ways of developing resilience to climate change through adaptation measures. These measures will need to be supported at a systemic level, including through intergovernmental finance mechanisms.

The overall aim of this study is to make the case for introducing fiscal mechanisms that support rural development objectives by facilitating increased resilience to climate change in rural areas. Within the limitations of a desk-top analysis, the objectives of this study are:

1. To look at the impact of climate change on agriculture productivity and on rural economies;
2. To explore the vulnerability of municipalities to climate change in South Africa; and
3. To assess and provide recommendations on financial and fiscal policy measures and instruments that can be used to ameliorate the impact of climate change in rural areas.

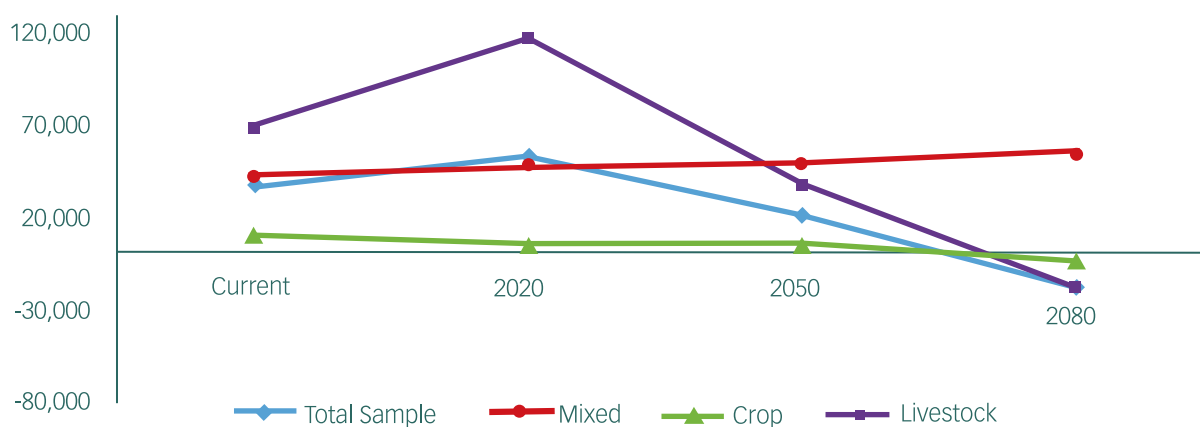
4.2 Impact of Climate Change on Agriculture

The first part of this study assesses the impact of climate change on agricultural productivity in South Africa. The study considers two types of farmers: subsistence farming households that supplement their income and food requirements through agriculture, and commercial farmers that generate revenue through farming (i.e. the farm is a business entity). The analysis is based on a nationwide sample of 1 128 subsistence farmers and 20 797 commercial farms distributed throughout the nine provinces of South Africa.

Climate change impacts are analysed using a Ricardian framework, which is a cross-sectional analysis of actual farm performance based on varying climatic regions or agro-climatic zones. The study investigates the effect on net revenue of changes in two climatic factors, rainfall and temperature, while controlling for soil type and farming characteristics. Since the results vary by type of farmer, each group of farmers (subsistence and commercial) was further subdivided into four categories: crop farmers, horticultural farmers, livestock farmers and mixed farmers.

In general, the results show that a simultaneous decrease in rainfall and increase in temperature adversely affects both subsistence farmers (151% loss in net revenue by 2080) and commercial farmers (111% loss in net revenue by 2080). The results show that by 2080 commercial farmers are likely to lose a total of R694 billion rand as a result of climate change. The effects will be more severe among crop farmers, while mixed farmers are least vulnerable to climate change. By 2080, climate change will result in subsistence crop and commercial crop farmers losing approximately 144% of their net revenue, and commercial livestock and subsistence livestock farmers losing 127%. For horticultural farmers, losses of 86% in net revenues are expected for both subsistence and commercial farmers, while commercial farmers practising mixed farming methods face losses of 71%. Subsistence mixed farmers are the only type of farmer who stands to benefit somewhat from the predicted climate changes in the longer run, with increases in net revenue of 30% predicted for 2080.

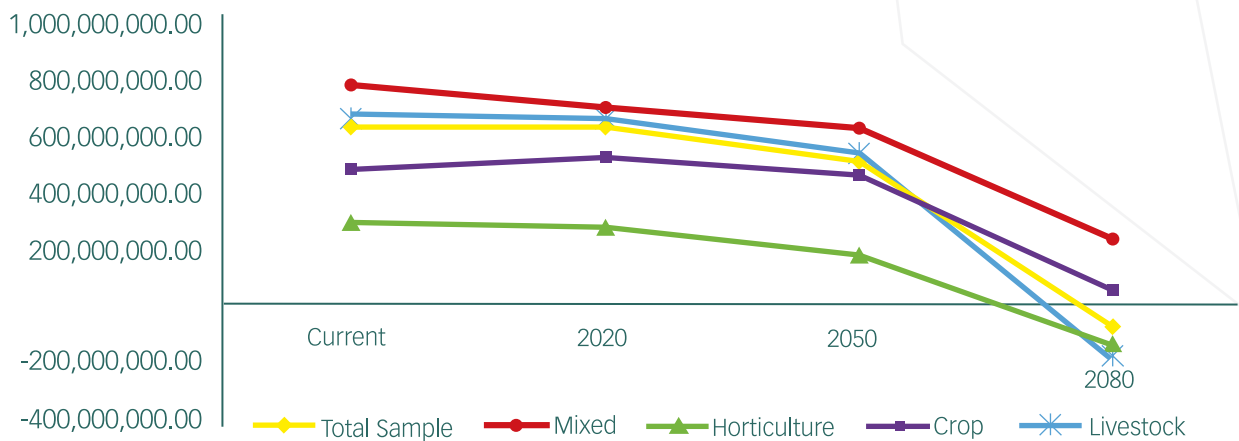
Figure 4.1. Predicted change in net revenue for subsistence farmers as a result of decreased rainfall and increased temperatures (rands)



Source: Commission's calculations

As stated earlier, subsistence farmers' households participate in agriculture primarily to supplement their household income and food requirements. Subsistence farmers use a large proportion (57.8%) of the output from crop agriculture to feed their households and sell only 30.1% to generate revenue that supplements the household's income. Among livestock farmers, a relatively larger proportion (48.9%) of livestock output is sold to generate revenue rather than kept to feed the household (26.7%).

Figure 4.2. Predicted change in net revenue for commercial farmers as a result of decreased rainfall and increased temperatures (rands)



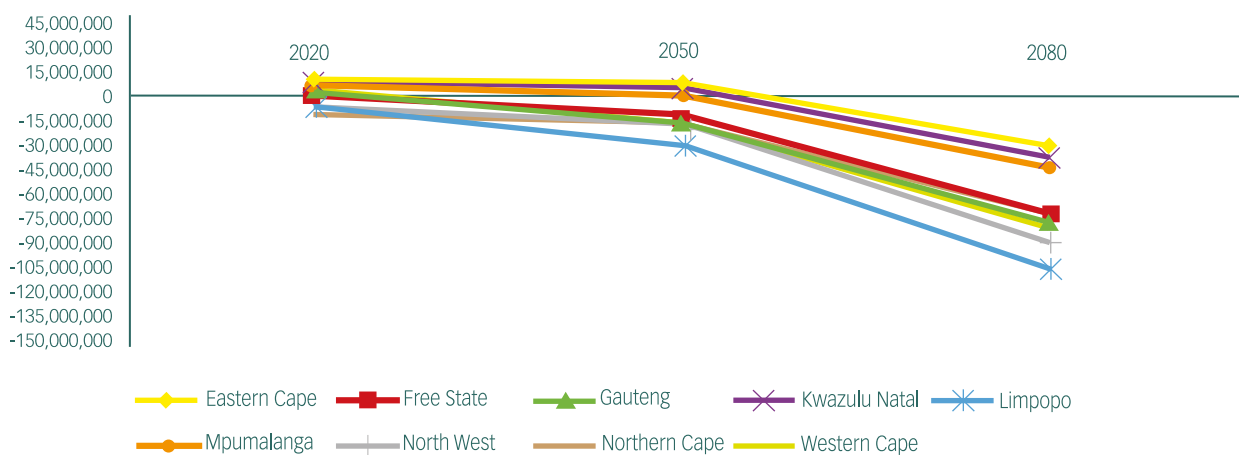
Source: Commission's calculations

4.2.1 Provincial Level Analysis

The impact of climate change will vary not only by continents but also by regions within a country (Gbetibouo and Hassan, 2005). Figure 4.2 shows the total loss in net revenue for commercial farmers at provincial level, as a result of a concurrent increase in temperature and decrease in rainfall for 2020, 2050 and 2080. In all the provinces, climate change will have an adverse effect, as net revenue is decreasing over time.

A provincial-level analysis for subsistence farmers is not presented here, as they were under-represented, with less than 50 farmers sampled in several provinces.

Figure 4.3. Predicted change in net revenue for commercial farmers at provincial level as a result of increased temperatures and decreased rainfall (rands)



Source: Commission's calculations

By 2080, the effects of climate change on revenue will vary from province to province. The most severely affected provinces will be North West (with R88,455,490 in lost net revenue) and Limpopo (with R106,544,600 in lost net revenue). In percentage terms, the Northern Cape (439% decline in net revenue) is most affected, followed by North West (231.1% decline in net revenue) and Limpopo (158.6% decline in net revenue). These three provinces already contain arid areas, and so further increases in temperature and decreases in rainfall are likely to make them even drier and hence less productive. Predictions for commercial agriculture are less severe for KZN and Eastern Cape compared to other provinces. For subsistence farmers in KZN, the predicted losses in 2080 imply a 124% decline, whereas an increase of 75% in net revenue is predicted for the Eastern Cape.

Linking these provincial findings for climate-change impacts on commercial farming to municipal areas, two provinces – Limpopo and North West – contain 11 of the most vulnerable municipalities identified. However, the municipal study also indicated that several of the most vulnerable municipalities are located in KZN and the Eastern Cape. It would therefore seem that vulnerability of agriculture to climate change does not perfectly overlap with rural municipal vulnerability.

4.2.2 Impact of Climate Change on Food Security

To understand better the effect of climate change on food security, the impact on food adequacy in subsistence farmers' households was analysed. Climate variables were found to affect significantly household food adequacy, more for crop farming than livestock and mixed farming.

The results imply that the demise of commercial agriculture due to climate change poses a very real threat to food security. By 2050, commercial agricultural net revenue is predicted to lose 18.3%, which may seem moderate, but as the predictions for 2080 show, the impacts become more drastic. Across all farmer types, predicted losses in net revenue will be 110% on average, making agriculture unprofitable.

South Africa is a net exporter of food, and so climate change could also affect food security in the Southern African region. For example, 50% of the maize (the main staple) in the Southern African Development Community (SADC) region is produced in South Africa (Kurukulasuriya and Rosenthal, 2003). Adverse effects of climate variability and extreme weather conditions in South Africa could therefore destabilise the whole region. Governments, policy-makers and development practitioners in the region need to collaborate to design efficient mitigation measures and innovative fiscal instruments that effectively deal with the impacts of climate change on the agricultural sector.

4.2.3 The Role of Adaptation in Agriculture

A potential adaptation strategy to climate change is crop diversification and changing planting and harvesting dates. One of the study's most robust findings is the extent to which different types of farming will be affected, with crop farming being the most, and mixed farming the least, vulnerable. After livestock farming (66%), mixed farming (13.7%) is the most prevalent form of farming in the sample and on average more lucrative than livestock farming, horticulture or crop farming. Mixed farming strategies are likely to become more widespread as farmers begin to respond to climate changes over time.

The study also found that climate change will have less impact on larger or more efficient commercial farms (i.e. with net revenues greater than R500,000 per year) than smaller farms. When farmers with net revenues of less than R500,000 are omitted from the analysis, the predictions for 2080 are 10–20% lower. In the longer term, smaller and less efficient farms, faced with the harsh consequences of climate change, are likely to leave the agricultural market. Larger and increasingly efficient farms, with the financial infrastructure to adapt to changing circumstances, may come to dominate the agricultural landscape.

Although climate conditions have a significant effect on net farm revenue, the results indicate that various farming characteristics and mitigation strategies can play a critical role in adapting to climate change. The resilience of farmers is strengthened through strategies such as accessing veterinary services and dips among livestock farmers. The results for crop farmers are less clear, while subsistence farmers do not use significant fertilisers and pesticides. For commercial farmers, purchasing water also has a positive and significant impact on agriculture. In so far as purchasing additional water will be available (perhaps through prospective inter-basin transfers), farmers may be able to adapt to decreasing rainfall by switching to irrigated agriculture and transporting water to feed animals on farms. Given South Africa's constrained water resources, such opportunities would clearly be limited.

The analysis of subsistence farmers produced interesting results relating to property rights and land reform. When the effect of changes in temperature and rainfall on net revenues is controlled for, crop farmers are better off when the farm is owned by the household as opposed to being part of a land reform project. In the case of livestock farming, more revenue is earned when the land is communal than when the land is privately owned. This implies that marginal net benefits can be increased by subsistence farmers having communal access to large tracts of grazing lands.

For all types of farmers, having access to insurance yielded positive and significant results. This supports the current literature that suggests access to insurance and extensions are vital climate change mitigation strategies (Murdoch, 1998; Seo *et al.*, 2008; Di Falco and Chavas, 2009; Bryan *et al.*, 2009). While the subsistence farmers' data did not allow the effect of insurance and credit on net revenues to be studied, providing access to insurance and credit to small-scale farmers will be a key factor in improving their adaptive capacity. Compared to commercial farmers, small farmers have limited access to such financial instruments to hedge against climatic risk, thereby leaving the poor and the marginalised exposed and more vulnerable.

4.3 Vulnerabilities of Municipalities to Climate Change

As the impacts of climate change will be localised, local institutions and governance will be the most important drivers of adaptation and coping mechanisms. However, since resources are limited, knowing which actions to prioritise is important, so that the most vulnerable areas can be targeted. This section looks at the South African municipalities that are most vulnerable to future climate change, as a basis for prioritising strategic interventions aimed at increasing resilience.

Vulnerability is a measure of susceptibility to damage or harm. Although the vulnerability of various socio-ecological systems and stressors is assessed, the focus here is on vulnerability to climate change. The Intergovernmental Panel on Climate Change (IPCC) uses a conceptual structure in which vulnerability is characterised as a function of exposure and sensitivity to stress on the one hand, and capacity to deal with the effects of the stress on the other. Mapping vulnerability has developed from risk-exposure mapping used in disaster management and has been enabled by the immense progress in geographic information systems (GIS).

Many metrics are available for comparing vulnerability, and the final choice of indicators is determined to some extent by the availability of spatial data at the appropriate scale. In this study, the overall vulnerability index at municipal level was compiled using 11 different spatial data layers. After summarising by municipality, the measures were reduced to a score of 1–5 based on quintiles. The measures were divided into three components: exposure, sensitivity and adaptive capacity. Equal weightings were used throughout the index apart from the sensitivity component, which was weighted 60:40 in favour of population density. The overall vulnerability score for each municipality was assumed to be the residual of impact (the average of exposure and sensitivity) and adaptive capacity.

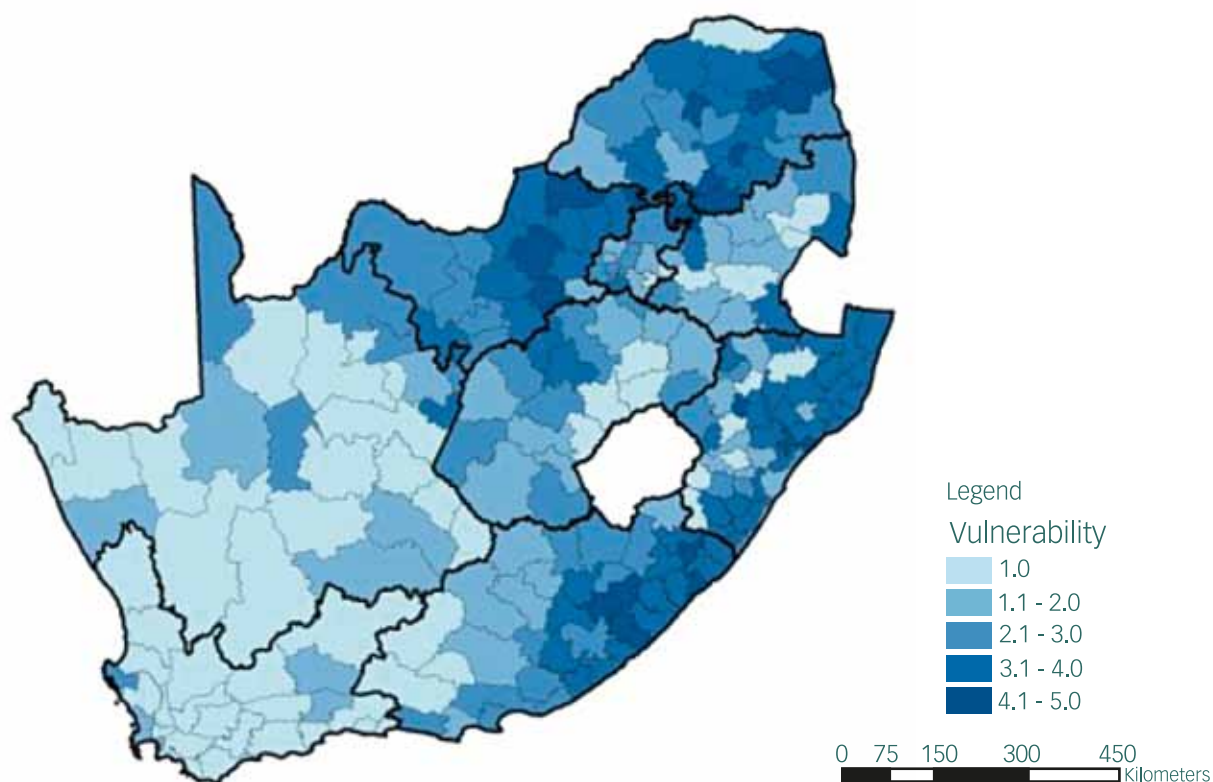
The exposure component comprised six elements: flood frequency, fire frequency and density, percentage change in future rainfall, change in temperature, the proportion of low-lying coastal urban development and malaria exposure. The north-eastern and coastal regions were found to have frequent exposure, while the north-west has relatively low exposure. Exposure in the north-east is largely because of changes in temperature, rainfall and increased exposure to malaria. The east coast's exposure can be attributed largely to relatively frequent fires and flooding, low-lying coastal areas and the potential for increased exposure to malaria.

The sensitivity component was composed of population density and water stress. Population density is highest in the eastern half of the country and the south Western Cape and reaches high concentrations in the large metropolitan municipalities. Conversely, the municipalities in the arid central, western and northern regions of the country are among the most water-stressed municipalities in the country.

The adaptive capacity component was made up of socio-economic capacity, public infrastructure, municipal expenditure per capita and governance. Overall adaptive capacity was highest for the more developed metropolitan municipalities and most of the south-western municipalities. Adaptive capacity was particularly low in the eastern half of the Eastern Cape, northern KwaZulu-Natal and parts of Limpopo and North West.

Overall vulnerability to climate change was found to be highest in the eastern half of the country, particularly in areas corresponding to former homeland areas, while most municipalities in the western half of the country and several in Gauteng and Mpumalanga are comparatively resilient (Figure 4).

Figure 4.4. Index value of vulnerability to climate change for South African municipalities.



Source: Calculated using WorldClim¹⁴ (past-present data) and the CCFAS¹⁵ (future, spatially downscaled predictions) global climate databases.

Twenty municipalities were classed as highly vulnerable (Table 4.1). As a group, rural municipalities (type B4) were significantly more vulnerable than other non-metro municipalities. The average vulnerability scores of other types of municipalities were not significantly different.

Table 4.1. The twenty most vulnerable municipalities

Municipality Name	Municipality Code	Municipality Type	Municipality Name	Municipality Code	Municipality Type
Mnquma	EC122	B4	Thulamela	LIM343	B4
Intsika Yethu	EC135	B4	Aganang	LIM352	B4
Engcobo	EC137	B4	Ephraim Mogale	LIM471	B4
Port St Johns	EC154	B4	Elias Motsoaledi	LIM472	B4
Ntbankulu	EC444	B4	Fetakgomo	LIM474	B4
Indaka	KZN233	B4	Thembisile	MP315	B4
Mandeni	KZN291	B4	Moretele	NW371	B4
Maphumulo	KZN294	B4	Moses Kotane	NW375	B4
Greater Giyani	LIM331	B4	Ditsobotla	NW384	B3
Greater Letaba	LIM332	B4	City of Matlosana	NW403	B1

Source: Commission's calculations

14 <http://www.worldclim.org>

15 <http://www.ccfas-climate.org/>

4.4 Improving Resilience to Climate Change in Rural Areas

Local government's ability to deal with development challenges is hampered by a range of factors, including lack of human capacity and limited resources. Climate change will exacerbate these challenges and increasingly stretch resources available to local governments and their ability to fulfil their mandates. Rural municipalities, in particular, have fewer opportunities to raise revenues and struggle to attract skilled personnel. Resilience needs to be built through empowerment, innovation, good governance and financial support. A number of possible mechanisms could help vulnerable rural communities build resilience to local climate change. The key is fiscal and financial measures to fund and incentivise activities that improve the resilience of local communities.

Grants and subsidies can help overcome the cost barriers to implementing mitigation and adaptation measures, especially in low-income areas without the capital to invest in new technologies. For example, new national grants could provide incentives to reward or encourage climate change-friendly actions, to maintain and repair important infrastructure, provide environmental services, fund relevant research and build capacity in local government. Many of these measures will require funds for infrastructural development. Rural municipalities already access the Municipal Infrastructure Grant (MIG), a consolidation of several existing grants that aims to provide a better managed and more efficient funding system for municipal infrastructure. The goals of the MIG include fully subsidising the capital costs of providing basic services to poor households (through bulk, connector and key infrastructure) and better coordinating the implementation of national policy targets. Government may need to extend the MIG's goals to include rehabilitating ecological infrastructure, which would enhance resilience by enabling investment in natural buffer areas for protection against floods and sea-level rise. Such funds could be accessed through the existing structure of Special Municipal Infrastructure Grants, a component of MIG. The MIG's objectives, terms and conditions, and administrative procedures should be adapted to allow municipalities to use grant funds for climate change adaptation and mitigation investments.

The government has also established the Green Fund to improve environmentally friendly actions. The fund's objectives are to "promote environmental protection through a programme comprising technical assistance, grant assistance, loan assistance and/or own-funding for projects that have a substantial public interest" (National Treasury, 2012, p 663). In the 2012/13 budget, the government injected R300 million into the Green Fund, which will increase to R500 million in 2013/2014. The Green Fund needs to have a special 'rural window' to improve the resilience of vulnerable municipalities. This rural window should be used to develop and run programmes designed to evaluate the impacts of climate change and monitor climatic and oceanic parameters, ecosystem health (rivers, wetlands, estuaries, marine and terrestrial systems), and socio-economic variables (currently receiving more attention than environmental variables). In addition, concerted efforts should be made to tap into international funding sources (e.g. the World Bank Clean Technology Fund and the newly established Green Climate Fund) for research and long-term monitoring programmes that track appropriate climatological, ecological and socio-economic factors.

Providing more support to small-scale farmers also has the potential to improve the resilience of rural areas. According to the draft Integrated Growth and Development Plan (IGDP), South Africa has approximately 200 000 smallholder farmers (Department of Agriculture, Forestry and Fisheries – DAFF (2012)¹⁶). The IGDP acknowledges that support to these farmers has been "patchy and generally inadequate" (DAFF, 2012, p 19). Government support to agriculture has declined from 1% of GDP in 1995–1997 to 0.6% in 2005–2007 (compared to 1% in developed countries). Without improved support and with the climate change burden, productivity of small-scale farmers is likely to suffer. Services, such as providing advice on diversification, drought-resistant crops and efficient irrigation systems, should be improved. In addition, scaled-up access to financial services is needed, as these are important mechanisms for lowering the risk for both subsistence and commercial agriculture. Small-scale farmers, in particular, should have access to micro-credit and weather-based insurance, and subsidies for climate change resilient agricultural inputs, e.g. drought-resistant seeds.

The development of climate change and disaster vulnerability indices needs to be prioritised, in order to improve the effectiveness of interventions designed to improve the resilience of rural areas to climate change. As resources are limited, knowing where to prioritise is important, so that the most vulnerable areas can be targeted. Climate change disasters will be felt and dealt with on a local scale, and so understanding vulnerability at the local level will be essential for meaningful adaptation strategies and prioritising strategic interventions in rural areas. Therefore, government should, through the Department of Environmental Affairs (DEA) and the National Disaster Management Centre (NDMC), institutionalise the collection of climate change data and build analytical capacity.

16 DAFF, 2012.

4.5 Recommendations

With respect to addressing impacts of climate change in rural areas, the Commission recommends that:

- The Department of Environmental Affairs (DEA) and the National Disaster Management Centre (NDMC) should develop a municipal vulnerability index and disaster-risk modelling tools to assist municipalities assess their vulnerability to climate change and non-climate change disasters and determine associated contingent liabilities.
- The DEA and NDMC should:
 - Develop a standardised Vulnerability Index that government can adopt as the basis for:
 - iv. identifying and monitoring municipal jurisdictions and municipalities that are most vulnerable to disasters;
 - v. coordinating and providing targeted national and provincial support to vulnerable municipalities;
 - vi. enabling improved planning and risk management by all municipalities.
 - The vulnerability index, at a minimum, should take into account the *exposure*, *sensitivity* and *adaptive capacity* of an area to disasters. Suggested indicators for these criteria are provided in the Technical Report that accompanies this Submission.
 - Standardise and use disaster-risk modelling techniques to project the potential damage of disasters on human life, livelihoods, infrastructure and property. For example, the estimated number of people who will become homeless, the number of buildings that will have to be rebuilt and the cost of reconstruction operations;
 - Develop and implement a government-wide national climate change programme, which includes monitoring climatic and oceanic parameters, ecosystem health (rivers, wetlands, estuaries, marine and terrestrial systems) and socio-economic variables.
- The Department of Cooperative Governance (DCoG) should adjust the objectives, terms and conditions, and procedures of the MIG (municipal infrastructure grant) to:
 - Permit municipalities to use grant funds for climate adaptation and mitigation investments that involve creating, rehabilitating or modifying municipal infrastructure and,
 - Ensure that these investments prioritise and directly address the vulnerabilities faced by poor households.
- The DCoG should restructure the Special Municipal Infrastructure Grant component of the MIG in order to:
 - Allow municipalities to acquire or rehabilitate ecological infrastructure (such as coastal dunes or mangroves that provide natural protection from excessive storm surge and other weather events), provided that the return on investment is greater than a comparable engineering solution;
 - Provide a funding window for rural municipalities to receive resources from the Green Fund and similar global resources (e.g. the World Bank Clean Technology Fund and the newly established Green Climate Fund) in accordance with their terms and conditions.
- The Department of Agriculture, Forestry and Fisheries (DAFF) should expand support services for small-scale farmers to encourage them to adopt climate-resilient farming strategies aimed at adapting and mitigating the projected local effects of climate change through:
 - Advice on diversification, mixed-cropping, drought-resistant crops and efficient irrigation systems;
 - Improved access to financial services and instruments (such as micro-credit and weather-based insurance) that can help lower their risk exposures.

Chapter 5

ALTERNATIVE FINANCING MECHANISMS FOR DISASTER MANAGEMENT IN SOUTH AFRICA

5.1 Introduction

A number of challenges have emerged since 2005, when the funding mechanisms for disaster management in South Africa were revised. Firstly, the different spheres of government do not fully apply or adhere to current legislative, policy and institutional and funding mechanisms. Secondly, relief measures often take time to reach the victims or places affected by disaster because of the lengthy processes for disbursing disaster funds. Thirdly, experience has shown that funding for disasters does not always adequately address the effects of a particular hazardous event or the cost incurred by provinces or municipalities. Finally, most municipalities and provinces do not make provision for risk-reduction funding in their planning and budgeting processes (Visser & Van Niekerk, 2009). The haphazard response to disaster allegedly creates perverse incentives: when a disaster occurs, communities are discouraged from taking minimal mitigating or preventative measures by their expectation of some form of compensation from government.

This chapter assesses alternative financing methods for reducing disaster risk in South Africa, highlighting aspects to be considered in refining the national disaster risk management funding model and policy. This is particularly important because the current funding model does not provide optimally for the dynamic risk profile of South Africa and the complexities associated with the public financial management system.

Natural disasters have a huge impact on social and economic welfare (Vakis, 2006). This impact is especially severe in low/middle-income countries, where after major disasters governments often have insufficient funds to repair critical infrastructure and provide assistance to the private sector (Linnerooth-Bayer & Mechler, 2007). The poor are particularly exposed to natural disasters and have limited access to risk management instruments. This leaves poor households in a situation where they are less able to cope with the impact of disasters than more affluent citizens (Vakis, 2006, p 4).

Disasters have two major consequences for the poor: (i) the severe effect of shocks accentuates their poverty; (ii) they may become more risk averse and unwilling (or unable) to engage in risky but higher return activities (Vakis, 2006, p 6). Therefore, to prevent sharp increases in poverty in a country following a disaster, mechanisms should be in place to mitigate the possible financial and societal impacts (Skoufias, 2003, p 1087).

According to the Disaster Management Act (DMA) No 57 of 2002 (South Africa, 2002), disasters are natural or human-caused tragedies or hazards that threaten life, health, property or environment (South Africa, 2002). They can occur progressively or suddenly and have a widespread or localised impact. Climate change and inadequate risk management and associated funding frameworks make developing countries increasingly vulnerable to disasters. The literature suggests that disasters often put severe strain on public financial resources and overwhelm the public sector's ability to respond effectively, particularly in developing countries (Hofman and Brukof, 2006; Cardenas *et al.*, 2007). South Africa, like all developing countries, has suffered significant natural and human-made hazards.

Through stakeholder consultations, the National Disaster Management Centre (NDMC), which is the main national functional unit for disaster risk management, was informed of the study. The NDMC has since responded, expressing general support of the study, its findings and recommendations. Further details of their response can be found in the Technical Report.

5.2 Summary of the Literature on Disaster Management and Funding

According to the disaster management literature, the severity (and frequency) of disasters is growing. As such, developing countries (including South Africa) are increasingly exposed, fiscally and economically. Reasons for this increase include climate change, the change in weather patterns, inefficient land use, growing populations and assets located in high-risk areas. The international trend is to emphasise funding disaster-risk reduction before an event occurs (*ex ante*) rather than the traditional approach of funding losses associated with a disaster after it has happened (*ex post*).

For disaster management to work efficiently and effectively, a combination of legislation, clear roles and responsibilities, the allocation of funding and other funding mechanisms in the form of insurance measures is critical. An optimal risk financing strategy is the key for both pre- and post-disaster management. International case studies indicate that some roles, functions and funding are best centralised, while others need to be decentralised.

The Commission has explored a number of financial tools that could be part of a medium to long-term financial strategy for disaster management. These include the use of integrated budgeting, sovereign insurance, risk pooling, reinsurance, index-based insurance, weather derivatives, micro insurance, catastrophe bonds, safety nets, government policies and regulations, Private Public Partnerships, and other alternatives (e.g. funding through the Lottery). No evidence was found of a developed or developing state that integrates all of the available tools into a coherent financial model. Therefore, *on the basis of the available evidence, the Commission urges caution in preferring any particular financial tool in a policy.*

5.3 Key Findings of the Study

The study found that, in South Africa, the focus has disproportionately been on post disaster – disasters occur and so funding is needed – rather than on integrating funding into development initiatives that reduce the risk of disasters happening. The research identified the following gaps and bottlenecks that hamper sustainable financing of disaster management:

- The focus on disaster relief and recovery funding after a disaster has happened.
- The delay in the release of funds (between when a disaster occurs and when funds are released).
- The unclear roles and responsibilities in classifying and declaring disasters.
- The general lack of capacity in critical areas such as engineering and other professions.
- Bottlenecks in the management of projects in the Municipal Infrastructure Grant (MIG) structure.
- The lack of incentive and punitive measures (e.g. incentive-based grants).
- Problems with monitoring and evaluating facilities.
- The lack of (and in some instances no) disaster risk-reduction measures.
- A lack of involvement of the private sector.
- Limited community-based funding.
- The lack of political will.

5.4 Financing of Disasters through Conditional Grants

Schedule 9 of The Division of Revenue Act (Act No. 6 of 2011) provides for funds to be released immediately to provinces and municipalities in response to disasters (*provincial and municipal disaster grants*). This process does not have an adjustment period before funds can be dispersed to provinces and municipalities. The Commission welcomes and is in support of this approach, which will help reduce the lead time between natural disasters occurring and the release of funds. The Commission also notes the conditions attached to the grant, in particular the need *for municipalities to fund the portion of the costs of the disaster based on the revenue-raising capacity of the respective municipalities.* Strict

adherence to this condition will encourage municipalities and provinces to take preventive and risk-reduction measures when a disaster strikes.

However, this process does not resolve the challenges engulfing the financing and management of disasters in intergovernmental relations. The process and institutions for declaring a disaster area need to be clarified. All spheres have a responsibility, but municipalities (especially districts municipalities) have difficulty implementing the provisions of the DMA and the guidelines provided in the National Disaster Management Framework (NDMF) of 2005. This is because of inadequate funding for planning and prevention, as provincial and municipal budgets do not have the fiscal space for this purpose – conditional grants for natural disasters are *ex post* allocations. As disasters increase, public finance is unlikely to be able to cope with the reconstruction demands. Therefore, alternative measures must be considered to reduce the physical destruction caused by natural disasters. These measures include land-use planning, building standards that ensure a level of robustness against natural disasters, and developing and regulating domestic insurance markets, including introducing innovative market-based financing of disaster relief and recovery such as risk pooling, reinsurance, derivatives, micro-insurance and catastrophe bonds.

5.4.1 Municipal Infrastructure Grant (MIG)

Once funding for a disaster is approved in line with the stipulated statutes, the requested funds are made available through the MIG structure. A municipality must comply with the following conditions:

- Submit financial statements to the Auditor-General on time;
- Demonstrate its capacity to manage the infrastructure investment programme;
- Prepare and submit all monthly reports on how the grant was used in a prescribed format by a specified time;
- Allocate MIG funds in the municipal budget;
- Prepare a project business plan for each project (which conforms with the requirements of the MIG programme);
- Register projects on the national MIG database.

The current system of channelling funds is a source of frustration for municipalities and the relevant government departments: a business plan has to be compiled and approved at provincial and national level before being registered as a Provincial MIG. A large number of bottlenecks are found in the management of the projects registered under MIG structure.

5.4.2 Community Social Relief

Government also provides community relief during disasters (such as flooding and fires) that have caused excessive damage to both personal property and livelihood – for instance destroying crops (Myburgh, 2005, p 180). The funding for community social relief has two main sources: general government funds collected through taxation and fund-raising activities in terms of the Fund-Raising Act 107 of 1978 (FRA) (South Africa, 1978).

Of the two funding sources, the FRA is crucially important, as the general funds collected through taxation are often inadequate (or in some cases non-existent) in most national, provincial and local government departments. This is because funds collected through taxation are often used for other budget items due to the perceived impracticality of budgeting for events that might or might not happen. To serve as additional sources of funding, the following funds have been set-up in terms of section 16 of the FRA (Myburgh, 2005, p 81):

- The Disaster Relief Fund,
- The South African Defence Force Fund,
- The Refugee Relief Fund,
- The State President's Fund,
- The Social Relief Fund.

The **Disaster Relief Fund** renders assistance to any person who has suffered damages or loss caused by disaster. Importantly, a Board appointed by the Minister is responsible for managing the fund and for ensuring that assistance is rendered where deemed necessary (Myburgh, 2005, p 181). The Department of Social Development (DSD) manages the Disaster Relief Fund and is responsible for distributing disaster-relief funds. Although a Board is in place to manage the fund, its current functioning is problematic. According to the DSD, the Disaster Relief Board members are often not all instantly available when a disaster occurs. As a consequence, officials have to wait for an undefined period of time for the Board to meet and approve the funding of relief efforts.

Although the FRA is a crucial funding source for disaster relief efforts, agencies that need to respond timeously to the impacts of disasters often find it difficult to access the funds (Van Zyl, 2011a, p 40). One of the major problems inhibiting the release of funds relates to the declaration of a state of disaster. According to the FRA, the process to release disaster-relief funds can only be initiated once the president has declared a disaster (Van Zyl, 2011a, p. 40). This situation is not ideal because long reporting lines to the Office of the Presidency and bureaucratic red tape at local level (where a disaster happens) severely hamper the flow of information and consequently the release of funds for relief and recovery efforts. The above is also in conflict with the DMA.

According to the DSD, more synergy is needed between the DMA and FRA when a state of disaster is declared. As the discussion below shows, the research suggests significant changes are needed to the legislation governing disaster-relief funds.

5.4.3 Private Sector Involvement

In most instances, the private sector is not involved in disaster management activities within its municipal areas. However, some exceptions were noted. For instance, in one district municipality, private sector companies are already involved in risk-assessment processes (although the specific disaster management centre is not given access to the data collected by these private sector companies). Stakeholders agreed that the private sector has a role to play in managing disaster risk. In particular, since companies often create a risk situation within a specific area, they should contribute to the mitigation of the risk by putting risk-reduction measures in place. Furthermore, private sector companies should be encouraged to participate in disaster-risk reduction projects, as part of their overall Corporate Social Responsibility (CSR). These CSR projects can be joint ventures between the private and public sector (represented by the disaster management centre of the district).

Most stakeholders agreed that the insurance industry is not yet sufficiently involved. The insurance industry has a role to play in disaster risk management activities, and more information is required on the services that can be provided.

5.4.4 Community Funding for Disaster Risk Reduction

While community-based funding mechanisms constitute some available funding for disaster, they are still very limited, and a great dependency exists on government recovery interventions. For the most part, communities depend on their extended family to help them recover from disaster impacts. It is important to note that the funds provided by family members are not used to assist with disaster risk-reduction activities. Furthermore, communities also use *stokvels* and private loans, but these coping mechanisms only provide relief to those in the community who can afford them. These interventions are generally expensive because of the exorbitant interest rates charged by either the *stokvel* members or micro lenders. Communities, especially the most marginalised and poor, also have difficulty accessing funding from institutions such as banks to assist them with the recovery process.

5.5 General Problems Hampering the Release of Disaster Relief Funds

Currently the DSD faces several challenges that hamper distribution of funds to affected communities once funds have been released from the Disaster Relief Fund. Firstly, relevant structures are not in place to streamline the distribution of funds. According to the DSD, one major structural problem is that the department currently has no disaster risk management unit, as required by the DMA. As a consequence, no dedicated team drives the DSD's disaster relief component. Secondly, another structural issue is that, unlike most line government departments, the DSD does not have decentralised offices at local government level. As a consequence, funding takes a long time to reach the affected communities. To overcome this problem, DSD officials suggest that the distribution of social relief following a disaster is cascaded down to become a provincial government competency. Officials also felt that the South African Social Security Agency (SASSA) should no longer be involved in the distribution of disaster relief funds, as SASSA is geared towards broader social relief rather than disaster relief issues.

The location of disaster risk management centres (DRMCs) is also a stumbling block to the distribution of funds following disasters. In many instances, the location of DRMCs differs from province to province and from municipality to municipality. This often hampers the DSD's ability to contact their counterparts at provincial and/or local DRMCs. As a consequence, DSD has in the past struggled to coordinate effectively the distribution of funds to affected communities.

Human resource issues add to the problems in distributing funds to affected communities, as the DSD is severely understaffed. This means that national government employees become involved in the operational activities at local level whenever a disaster strikes. No-one is playing an oversight role, which is the actual mandate of the DSD, and so nobody monitors whether funds are reaching affected communities in the shortest time possible.

A final problem relates to the current lack of satisfactory disbursement systems that can provide access to relevant statistics and reports on persons affected by disasters. Without an adequate statistics system in place, it is difficult to determine how many people need disaster relief and how much relief they need, which slows the distribution of relief funds. To speed up the distribution of relief funds, the DSD should be linked to the information and database systems of both the NDMC and the Department of Cooperative Governance (DCoG).

5.5.1 Timely Release of Funds

The time between when a disaster occurs and when funds are released is problematic (Van Zyl, 2011b, p 7). Funds can take up to two years to reach affected communities. The current budgetary process, structures, systems and documentation greatly slow the ability of all spheres of government to provide an environment conducive to the quick release of funds for disaster response, relief and recovery (Van Zyl, 2011b, p 7).

Following a disaster, the rapid assessment process impedes the timeous release of funding for relief and recovery efforts. Legislation requires that all spheres of government (i.e. the local municipality) conduct a rapid assessment of the damage and, if it exceeds their capacity, to request the involvement of the relevant provincial government; the provincial government then conducts a verification assessment, and the process is repeated at a national level (Van Zyl, 2011b, p 7). Although this process is needed to assess the total impact of a disaster, the duplication of assessments at all levels of government significantly delays the release of urgently needed funding for recovery and response.

Secondly, funds budgeted for disaster relief and response cannot always be spent in one particular financial year, as is the case for infrastructure repair. When funds cannot be spent in a short space of time, inevitably the surplus funds have to be rolled over to the next financial year, creating instability (due to funds being reassigned to other projects) and delays in the flow of funding (Van Zyl, 2011b, pp 9-10).

5.5.2 Budgeting by Sector Department for Disaster Reduction

The research shows that sector departments do not budget for the implementation of disaster risk-reduction activities. Most of the funding is masked as developmental projects (which it rightfully should be). However, the lack of knowledge and understanding of disaster risk reduction means that this integration happens almost by accident. Therefore, it could be argued that a crucial link to a new funding model is to develop and enhance the capacity of sector department officials to deal with disaster risk-reduction matters. Once the multi-sectoral and multi-disciplinary nature of disaster risk reduction is understood, evidence of disaster risk-reduction activities can be expected to appear in the various budgets, which will be financed by the Division of Revenue Act on an annual basis. One of the recommendations is to implement a specific line item for disaster risk reduction for all organs of State. This will serve to highlight the need

to think about disaster risk reduction in daily operations. Such a line item must be governed by specific guidelines to ensure that it is used for disaster risk reduction.

5.5.3 Current Financial Management Systems

Most of the stakeholders consulted are content with the current public financial management system in place for normal day-to-day operational funding. Funds are allocated to projects and aligned with the annual performance management system of the respective government sphere. In general, most DRMCs have access to operational budgets, although some constraints remain in terms of mobilising funds for capital projects. These types of disaster risk-reduction projects normally run into millions of rands and are the least likely to be funded adequately.

The general perception is that funding allocation is inadequate. In all instances, the MTEF enables all disaster risk management functionaries to budget for disaster risk reduction. However, one of the greatest problems identified is provincial and municipal financial managers' lack of understanding and comprehension of disaster risk reduction. Creating greater understanding would mean a much more favourable budget allocation for disaster risk reduction. Although the MTEF allows for a fair accounting system, the need for better reporting practices, especially in disaster recovery, were highlighted (as discussed above).

5.6 Declaration of States of Disasters

The DMA (sections 23, 26, 27, 41 and 55) and the NDMF (Key Performance Area 4 – section 4.2) provide for the classification and declaration of states of disaster at municipal, provincial and national level. Both the DMA and NDMF call for uniform standards to be developed for the assessment of a proposed disaster. Yet, although all of the "key performance indicators" linked to section 4.2 of the NDMF refer to "guidelines and uniform methods", these standards still have to be developed (with the exception of the priority guidelines mentioned earlier). In light of this, the classification and declaration of a state of disaster at all levels will continue to be ambiguous, with an obvious impact on the allocation of funding.

The first time a state of disaster was declared in South Africa under the DMA was in June 2008, when xenophobic attacks occurred in the Western Cape and Gauteng Provinces (South Africa, 2008a; South Africa, 2008b). Since then, a number of states of disasters have been declared, the most significant being the 2010/2011 floods in most parts of South Africa. The declaration of these events tested the functionality and measures of the government's response. The process and procedures for declaring states of disasters were found to be unclear and cumbersome. In almost all instances, the difference between classification and declaration was unclear (despite the explanations provided in the NDMF). Similarly, the roles of district municipalities, provinces and the NDMC were muddled. This is not surprising given the lack of clear guidance on this issue and varying opinions even at national level. The NDMC's role in classifying and declaring a state of disaster is also questionable, as one of the founding aims of the DMA was the decentralisation of disaster risk management. Yet, the classification and declaration of a state of disaster remains the role of the NDMC. An event remains a local disaster until classified otherwise by the NDMC, which basically disempowers municipalities from declaring a state of disaster. This situation leads to a lack of taking responsibility and the perception that the NDMC will in any event intervene.

Furthermore, how a disaster is scaled up to a 'new' classification by the NDMC is not clear. For example, if after their assessment the NDMC classifies a local disaster as a provincial disaster, the provincial premier still has to declare a provincial state of disaster. Neither the DMA nor the NDMF provides for this reclassification process. Another, related issue is the NDMC's internal capacities. As one respondent remarked, the NDMC can hardly do its most basic functions (with its current human resource capacities), yet it is also expected (with already limited human resources) to become involved in operational issues.

The last criticism is the duplication of disaster declarations that occurs once other legislation is invoked. The FRA is the only other Act to make provision for the declaration of a disaster. As mentioned earlier, this legislation requires the president of South Africa to declare a disaster (as opposed to the DMA declaring a state of disaster). The FRA's aim is to address the relief of social distress resulting from a disaster. In assessing the two Acts, contradictions and duplications clearly exist. On the one hand, the DMA aims to decentralise the declaration of a state of disaster and makes provision for such declarations before a hazardous event has turned into a disaster (hence the 'state' of disaster). On the other, the FRA can only be used to declare a disaster (an event that already exceeds the ability and resources of the affected community), and only the president can make such a declaration (whereas provincial premiers and municipal councils can declare local and provincial states of disaster).

5.7 Constraints in Current System/Legislation

The funding regulation provided under chapter 6 of the DMA is also subject to sections 16 and 25 of the Public Finance Management (PFMA) Act 1 of 1999 (South Africa, 1999), which allows the use of funds in emergency situations (Myburgh, 2005, p 183). Section 16 of the PFMA is especially problematic for the rapid release of funds following a disaster event, referring specifically to the release of emergency funds from the National Revenue Fund. To release funds from this fund, the legislation requires that ministerial approval be given (Visser and Van Niekerk, 2009, pp 38–39). The need for ministerial approval delays the rate at which funds can be made available for response and recovery operations.

Section 25 of the PFMA also creates problems for the release of disaster response and recovery funds at a provincial government level. Subsection 25(2) of the legislation states that, in the case of an unforeseen emergency, a maximum amount equalling about 2% of the annual provincial budget can be released from the Provincial Revenue Fund. This limitation is problematic, as response and recovery operations are often extremely costly, and the 2% of funds released is often insufficient. Another aspect relates to subsection 25(3b), which states that the release of funds should be subject to a vote of the provincial legislature. This further delays the relief of funds.

According to DSD officials, the PFMA also creates a clash of accountability with regards to the Disaster Relief Fund. On the one hand, the PFMA says that DSD officials are accountable to the departmental director-general (DG) at all times; thus officials must inform the DG before proceeding with any task. On the other hand, in disaster or emergency situations, DSD officials are also accountable to the Disaster Relief Fund Board. The confused reporting lines and additional bureaucratic procedures that need to be followed greatly hamper the quick release of funds.

Whereas the PFMA governs the release of funds to national and provincial tiers of government, the Municipal Finance Management Act (South Africa, 2003, section 29) governs the release of fund at municipal level (Visser and Van Niekerk, 2009, p 27). This Act creates similar problems for the efficient release of funds for disaster response and relief at local level, as the PRMA does at national and provincial levels (Visser and Van Niekerk, 2009, p 27). Specifically, although a municipality is allowed to authorise unforeseeable and unavoidable expenditure arising from an emergency, this expenditure is limited to a minimum percentage of the budget, which is insufficient for prolonged response and relief efforts (Visser and Van Niekerk, 2009, p 27). The municipal council also needs to ratify the emergency expenditure before the funds can be released, and so release of funds will be delayed if not all the councillors are available.

Disaster recovery and rehabilitation funds are made available through the present budgetary process, which starts long before any disaster is reported (the exception might be a prolonged drought). Funds can also be made available for unforeseen expenditure such as disasters in the Medium Term Budget Policy Statement (MTBPS), which is normally made in November each year. Because financing of these disasters happens from in-year allocations gazetted during these months, any disasters occurring between that time and March (end of the financial year) are not considered. Where the magnitude and severity of a disaster calls for a full rehabilitation of infrastructure or the result of a persistent drought, funds are normally rolled over, provided that such funding was requested and approved before the November adjustment period.

5.8 Lack of Capacity

It is well known that municipalities, provincial and national organs of state lack critical skills such as in engineering and other professions. The municipalities and provincial structures do not employ enough qualified engineers and other professionals with the necessary skills to deal with disasters.

As a result, assessment verification often lacks professional inputs, which delays the completion of many rehabilitation projects; projects can take on average almost twice as long to complete as originally envisaged. These delays occur for various reasons:

- Lack of capacity to implement such projects.
- Delays in the procurement of funding for projects.
- Misunderstandings about procedures for the release of funds.

In order to address the above, various multi-disciplinary disaster assessment teams need to be established, and national guidelines for the assessment and verification of disaster events should be developed and implemented.

5.9 Monitoring and Evaluation

The quality of rehabilitation work and the general maintenance of facilities are problematic. In some cases, the expected life of facilities and their capacity to withstand further disasters are seriously reduced. Moreover, many rehabilitation projects do not include monitoring and evaluation as part of the plan, which may result in the misappropriation of funds.

Mechanisms need to be developed for reducing delays in the processing and administration of requests – the length of time between a disaster occurring and funds being requested and approved is too long and frustrating. Such delays lead to problems in damage assessment, in providing information on the scale of damage and related requirements, and in timely issuing of emergency relief acts. Project review and monitoring arrangements are needed to ensure rapid and smooth implementation of rehabilitation. For example, to ensure improved maintenance, various measures could be introduced including more funds, increased monitoring and greater public participation. Mechanisms or strategy for each type of disaster differ, although the basic principles or approach to disaster management are the same. Each disaster needs a different assessment, response and recovery approach.

5.10 Disaster Risk Reduction

Disaster risk-reduction funding is mostly perceived as funding linked to the everyday disaster-risk management of the various government spheres. However, the majority of the respondents indicated that funding for disaster risk reduction remains one of the most problematic areas, especially within sector departments. The various DRMCs seem to have more success budgeting for disaster risk reduction and being allocated funds though the equitable share. This can mainly be ascribed to the fact that the disaster risk management function is known through the implementation of the DMA. However, many officials and politicians still see disaster risk management as part of a DRMC's activities, with very little link to the multi-sectoral approach. Similarly, the general perception is that very few sector departments fully understand their responsibilities in disaster risk reduction, which obviously leads to a lack of budgeting. Sector departments also do not integrate disaster risk reduction into their normal day-to-day operations. Although disaster risk reduction should be integrated into normal sectoral activities, additional funding will still be needed. The problem appears to be two-fold: on the one hand officials do not budget for disaster risk reduction, and on the other hand the accounting officers do not demand it.

5.11 Lack of Political Understanding

A major constraint to the current funding of disaster risk reduction is that local and provincial political leaders do not understand the crucial role of disaster risk management within their municipalities (in DRMCs and sector/line departments). Municipal and provincial officials tend not to want to fund something that 'might not happen', which makes getting funds for pro-active disaster risk-reduction projects difficult. In general, disaster risk management officials have difficulty obtaining funding because of protracted deliberation processes with municipal and provincial decision makers. This eventually leads to decision makers removing disaster relief, preparedness and mitigation funding from their list of priorities. Political leaders (and other departments) often view disaster risk management as something to be taken seriously only when an emergency or disaster occurs.

Politics also limits the release of disaster risk management funds. Politicians often do not want to provide funding because of the innate lack of good publicity associated with disaster risk reduction. In the past, local government politics has also delayed access to disaster risk management funds – one political party may want to portray another party in a bad light over its management of a disaster situation. Furthermore, as funds are only released once a state of disaster is declared, politicians may not want to declare a state of disaster for fear of economic disinvestment and losing the support of voters. Local government officials proposed that declaring a state of disaster should be totally removed from politicians and be handled by DRMCs.

The study found that one of the bigger systemic problems facing disaster risk management funding is that the disaster risk management function "is not owned by any one department", and so no department budgets for the disaster risk management.

5.12 Recommendations

With respect to alternative financing mechanisms for disaster management, it is recommended that:

- The Minister for Cooperative Governance and Traditional Affairs should streamline guidelines and gazette uniform standards governing and guiding the classification, declaration, assessment and response to disaster events in terms of the Disaster Management Act (DMA) and National Disaster Management Framework (NDMF). The absence of a standardised and coordinated approach to damage assessment and relief provision to people affected by disasters results in unnecessary duplication of effort and funding across government and delays in response and rehabilitation efforts.
- The DCoG should, through the DMA, require municipalities, starting with the most vulnerable, to incorporate in their Integrated Development Plans (IDPs) disaster risk-reduction evaluations, strategies and measures, including:
 - The development and enforcement of *land-use planning* and management measures so as to reduce infrastructure being built on seismic fault lines, in coastal regions subject to storm drainage and river shorelines subject to frequent floods;
 - The development and enforcement of *buildings standards* (or retrofitting requirements) to ensure adequate robustness against earthquakes or cyclones.
 - Engineering interventions to mitigate the degradation of environmental assets (such as soil erosion) through the creation of *dams* for flood control, *fire breaks*, and *sea walls* to break storm surges; and
 - Financing strategies for these measures.
- Government should develop a policy framework for municipal disaster risk financing that:
 - Differentiates between municipalities based on their vulnerabilities and fiscal capacities;
 - Leverages private resources to fund long-term disaster risk management by combining private risk financing, intergovernmental grant financing (including the Green Fund) and municipal own revenues;
 - Encourages and incentivises, where appropriate, the use of innovative market-based financing of disaster relief and recovery. Instruments that can be considered include sovereign insurance, risk pooling, reinsurance, index-based insurance, weather derivatives, micro-insurance, and catastrophe bonds.
- The National Treasury should require that environmental management and vulnerability objectives are explicitly incorporated into the design of existing key municipal grant programmes. These objectives should promote disaster risk-reduction methods (*ex ante* approach) and enhance municipal resilience to climate change through mitigation and adaptation methods. They should:
 - Include the Integrated Housing and Human Settlement Development Grant, the Urban Settlements Development Grant, the Municipal Infrastructure Grant, the National Electrification Grant, the Public Transport Infrastructure and Systems Grant and the Regional Bulk Infrastructure Grant;
 - Incorporate a statement of environmental and climate resilience objectives in each grant programme, together with measurable indicators;
 - Prioritise the most vulnerable municipalities when determining the horizontal division of available resources in each programme;
 - Provide for beneficiary municipalities to conduct appropriate climate-resilience evaluations on existing infrastructure over the medium term, subject to disaster risk-reduction methods being incorporated in respective IDPs;
 - Be accompanied by capacity support to and engagement with the most vulnerable municipalities to ensure that they are able to identify and address disaster risks comprehensively.

Chapter 6

FINANCING OF WASTE MANAGEMENT IN SOUTH AFRICA

6.1 Introduction

Through research and stakeholder engagements, the Commission identified the financing mechanisms of solid waste management as a key service that needs to be addressed in this Submission. Most waste management studies in South Africa have focused on operational management, environmental aspects and the legislative framework, rather than looked at the funding mechanisms and policies affecting solid waste services across municipalities. This chapter highlights some critical policy issues related to the sustainable financing of solid waste management in South Africa that must be resolved.

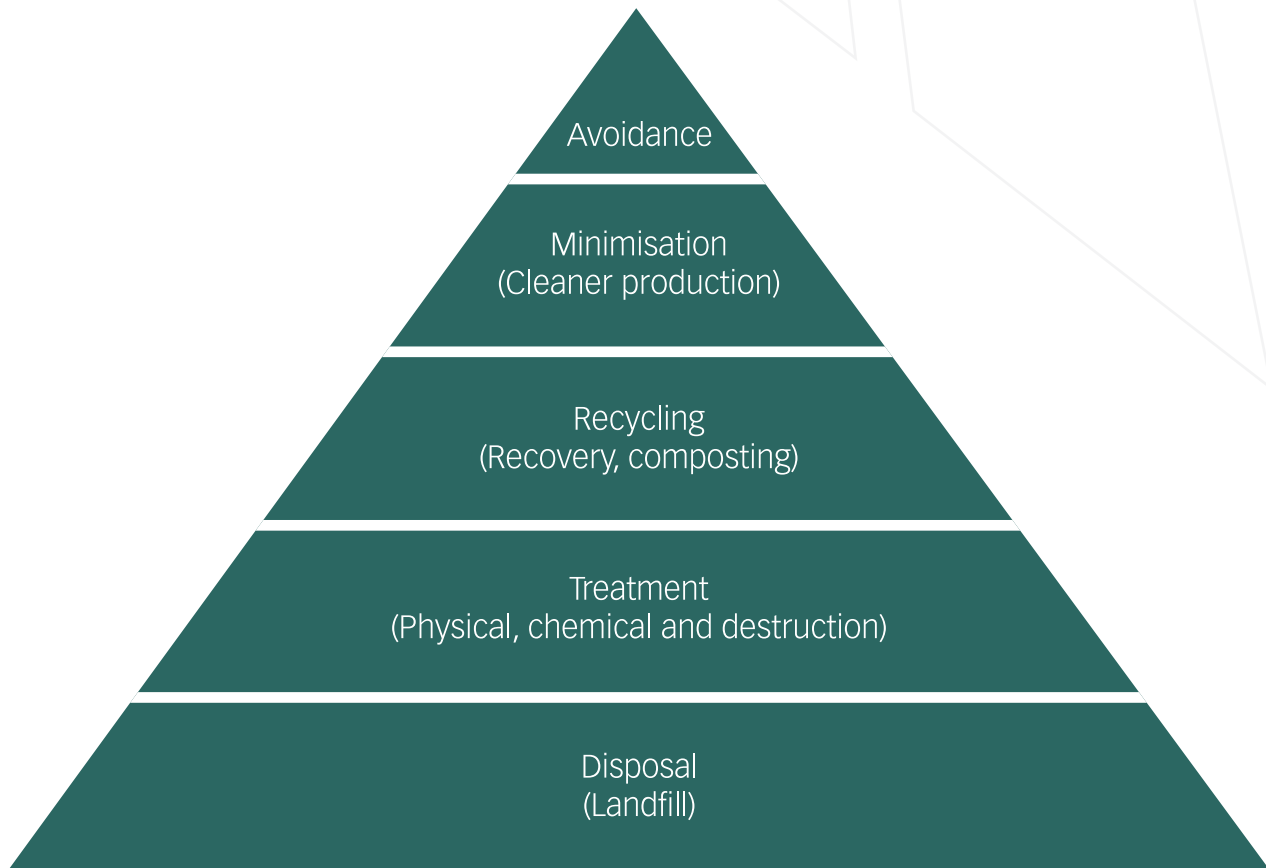
Today, the majority of municipalities and cities in South Africa face serious economic, social and environmental challenges related to solid waste management. New and innovative mechanisms for financing solid waste management are needed in order to address these challenges in an integrated and coordinated manner. The South African Constitution (South Africa, 1996) and other legislation ensure that local government provides communities with equitable, affordable and sustained basic services (including waste management). The current patterns and rates of waste generation and disposal are unsustainable and negatively affect the environment. They fail to account for the needs of future generations as per the basic tenets of our Constitution and the National Environmental Management Act (South Africa, 1998) and other environmental laws. Municipalities can no longer afford the 'collect and dump' approach to solid waste management because collection and transportation costs are soaring. This problem is compounded by the depletion of available landfill airspace,¹⁷ particularly in the large cities and metros. Currently, most of the major metros and cities in South Africa have exhausted their landfill airspace, and no suitable land is available for new landfills.

Municipalities, especially in small towns and rural areas, struggle to find funds to develop and rehabilitate their waste management infrastructure. This is mainly because of the lack of awareness and low prioritisation of waste management. Moreover, when funds are available to develop the infrastructure, often the money is insufficient to operate and maintain the facilities. The one funding option – the Municipal Infrastructure Grant (MIG) – does not often cater for operational expenditure. Therefore, municipalities have to find innovative ways to fund and generate revenue in order to build, operate and maintain these facilities. Traditionally, municipalities generate revenue through user charges (tariffs), levies, rates and taxes. However, in most cases these revenue sources are inadequate and, because they are mainly taxes, they are becoming unaffordable for communities, especially the poor. For municipalities with large indigent populations, revenue from refuse tariffs, rates and levies is not sustainable and inadequate.

All spheres of government need to take a radically different approach to waste management, which is adequately laid out in the National Waste Management Strategy (NWMS) as promulgated in terms of the National Environmental Management Waste Act, Act 58 of 2008 (South Africa, 2008). The NWMS calls for an integrated approach to waste management that adopts *waste hierarchical* principles which avoid, reduce, recycle, re-use and only dispose waste as a last resort, as illustrated in Figure 6.1.

17 The term airspace refers to the volume of space on a landfill site permitted for the disposal of municipal solid waste.

Figure 6.1. Hierarchical structure of waste management



Source: DEAT, 1999, 2004

During the Commission's 2011 stakeholder engagement, the Department of Environmental Affairs (DEA) raised a concern that the cost of solid waste management in South Africa is unclear. This has a bearing on the extent of funding received from national government and how much funding is ring fenced at local government level. The current narrow view of cost effectiveness needs to be broadened, as it is limited to a financial perspective, i.e., the financial cost-effectiveness based on the monetary values of the service or product in the market. A broader approach is needed, one that considers South Africa's socio-economic challenges, the equity policy, the Bill of Rights, the environmental cost and the impact of waste management. All of these may result in significant costs and impacts that are not included in the current financial accounting systems of most municipalities. In order to address these challenges and deficiencies, an integrated cost benefit analysis (CBA) or a full cost accounting (FCA) for municipal waste management should be encouraged and implemented. The FCA encompasses both internal (i.e. financial) and external (e.g. macro-economic, environmental and social) items simultaneously.

Solid waste recycling has the potential to create direct, indirect and induced 'green' jobs. For example, direct jobs can be created in public and private waste recycling facilities, while indirect jobs can be created through businesses that purchase recyclable commodities such as processors (compost manufacturers and scrap metal dealers). Induced types of jobs include remanufacturers or re-users of recyclable materials and charity shops that sell used merchandise. Creating jobs within the waste management sector is about creating valuable and sustainable 'green jobs', or jobs in sectors that demand less excessive carbon emissions. As landfilling – the traditional source of waste disposal – has become more expensive because of closures and stricter operating requirements, recycling is becoming an alternative for waste disposal (Halstead, 1994).

Even though the data has gaps, internationally, especially in the United States, the United Kingdom and the European Union, recycling has been shown to contribute significantly to the economy through gross value add (GVA), tax revenue and job provision. However, the studies caution against job displacement within the sector, as the employment and social dimensions may be overlooked in waste and resource allocation policies. Friends of the Earth (2009) suggest that these challenges can be met through creating opportunities for valuable and sustainable 'green jobs'. In the United

States, recycling generates more than twice the revenue of landfill and incineration industry. Recycling also produces ten times more jobs because it recovers greater economic value, which is bound up in discarded products and equipment.

A strengthened approach to waste management alternatives and their funding is needed. Alternatives include waste minimisation, recycling and regionalisation of waste management activities in the form of disposal sites, transportation and waste incinerations. Currently, despite alternatives in place, waste management services favour landfill sites because of the lack of incentives or punitive measures to act otherwise. The regionalisation of waste management activities can be done in a phased approach to cater for the different municipal capacities. For example, eThekweni and the City of Johannesburg have started converting waste to energy, but other non-metros could start with regional landfills and gradually move to the waste incineration and energy conversion methods.

Many South African municipalities contain a large number of indigents who cannot afford to pay for basic services. Government's policy on free basic services (FBS) provides these indigents with basic services that include refuse removal. Ironically, refuse removal is a FBS that most municipalities do not have the resources to offer, while many indigent communities reside in settlements outside the 'urban edge' (partially as a result of apartheid spatial planning) and so are excluded from municipal services. Within some municipalities, the problem is further compounded by incomplete or no indigent persons' registers, which means that FBS are not provided to everyone.

6.2 Recommendations

With respect to financing of waste management, the Commission recommends that:

By the end of the 2015/2016 financial year, government should phase in full cost accounting (FCA) for solid waste management within municipalities. To achieve this goal:

- Government should develop specific FCA guidelines for integrated municipal solid waste management that addresses the specific and inter-related environmental and service delivery needs of the sector, within the framework of activity-based costing that the National Treasury is introducing.
- Government should develop a capacity-support programme to implement the guidelines that allows a phased introduction of FCA starting with high-capacity municipalities that face major solid waste management challenges.
- Government should take greater advantage of the opportunities for job creation in the solid waste sector, by incentivising municipalities to create 'green' jobs through labour-intensive service delivery. In particular:
 - The Department of Public Works should review the Expanded Public Works Programme (EPWP), which may negatively impact on the ability of municipalities to support job creation in the sector due to the comparatively higher capital costs associated with solid waste collection and recycling activities;
 - The Department of Cooperative Governance (DCoG) should review the funding conditions of the Municipal Infrastructure Grant (MIG) to ensure that local-level municipal waste management assets are eligible for financing.
 - A portion of resources from the recently established Green Fund should provide transitional financial support to municipalities that introduce innovative, labour-intensive waste collection, reduction and recycling mechanisms to areas where services are currently inadequate. These might include developing small waste collection and recycling contractors, or community cooperatives to manage waste buy-back centres and materials recovery facilities;
 - The DEA should develop municipal guidelines and regulations that support community involvement in waste management activities through community-based trusts and partnerships.

- The DEA should delay implementing the regionalisation of solid waste landfills policy until the fiscal risks and benefits for municipalities are better understood, and adequate decision-support measures for municipalities are in place. In particular:
 - The DEA should commission a full cost-benefit analysis of regionalisation options, to ensure appropriately scaled projects within a fiscally sustainable licencing and service delivery framework;
 - The DEA should develop adequate decision-support tools to guide municipal choices on appropriate investments and the associated governance frameworks, including the use of multi-jurisdictional Municipal Service Districts where appropriate.
 - The Commission notes its availability to assist the DEA, on request, to explore further the policy options and risk mitigation tools associated with regionalisation proposals.
- Government should emphasise the expansion of access to solid waste services to poor communities, while strengthening the policy framework for the provision of refuse removal free basic services (FBS). In particular:
 - The DCoG should review the MIG guidelines to ensure that (i) adequate funding for solid waste assets is available to municipalities with weaker fiscal capacity; and (ii) expenditures on specialised vehicles and equipment required for solid waste management services are eligible for financing;
 - The DEA should prioritise support to municipalities seeking to expand services to poor communities using labour-intensive service delivery, including investigating potential fiscal instruments that might be incorporated with the EPWP or Green Fund;
 - The DEA should commission a review of the refuse removal FBS policy, with a specific focus on its impacts on (i) expanding and sustaining services to poor households; (ii) the affordability and quality of service to poor households; (iii) environmental impacts, such as the extent of reduction in illegal dumping.

Part 3

INSTITUTIONAL DEVELOPMENT FOR INCLUSIVE GROWTH AND INNOVATION

The performance of the majority of sub-national governments in South Africa has been less than optimal. The two tiers of government face challenges of all sorts; challenges that have impacted negatively on service delivery and the country's overall development. Part 3 of the Submission, which is underpinned by the theme "Institutional development for inclusive growth and innovation", interrogates institutional and developmental issues that have the potential of unlocking value of sub-nationals, and more importantly, building government institutions that advance the principle of inclusive growth and development. The four Chapters in Part 3 interrogate institutional and developmental issues that are at the heart of the performance and effectiveness of sub-national governments namely, decentralisation, capacity, service delivery mechanisms and gender. The first Chapter argues for the adoption of more proactive regional governance models, particularly to take advantage of the differential growth impacts of alternative assignment of revenue and expenditure instruments. The Chapter examines the role that sub-national governments are currently playing in the growth process and carefully examine the ways and means that their contribution can be made more effective. The second Chapter evaluates government's institutional and human capacity building efforts and how such constraints can be eased to enable optimal performance of sub-national governments. The third Chapter evaluates the efficacy of government and quasi government institutions, especially government agencies in service delivery and inclusive development. The question that runs through this Chapter is, "are there alternative service delivery challenges"? The last chapter in this part adds a gender dimension to inclusive growth. The Chapter argues that institutionalising gender budgeting not only promotes an efficient and effective distribution of public resources, but it also advances inclusive development.

Chapter 7

THE IMPACT OF AGGREGATE REVENUE AND EXPENDITURE ASSIGNMENTS ON ECONOMIC GROWTH: THE CASE OF PROVINCES AND MUNICIPALITIES IN SOUTH AFRICAN INTERGOVERNMENTAL RELATIONS

7.1 Introduction

The overriding question of this chapter is whether or not the distribution of competencies among the different spheres of government in South Africa has an impact on economic growth. Different fiscal ‘arrangements’ determine conditions for economic growth, and so their relative advantages can be assessed based on their effect on economic growth. The assignment of decision-making competencies to different levels of government can influence national economic growth by shaping regional (i.e. provincial and local) growth-promoting policies. In this regard, the traditional public finance instruments (i.e. taxes and government expenditures) can enhance or dampen regional economic growth. The chief objective of the South African assignments’ system is to reduce interregional inequalities (through the provision of public services) and improve socioeconomic indicators¹⁸ (Yemek, 2005). This system agrees with the broad public finance principles of expenditure assignment (which level of government does what, and which level of government pays for what) and revenue assignment (which level of government should levy what taxes) – in other words, there is a link between the geographic dimension of benefits from a specific service and the level of government responsible for its provision.

The empirical question over the importance of the assignment of decision-making competencies for economic growth in South Africa has not yet been addressed in literature. Hence, this chapter aims to fill this gap by answering whether or not South African provinces and municipalities play a useful role in promoting economic growth and, if so, in what way (i.e. through revenue assignment, expenditure assignment or both). Revenue and expenditure assignments are important pillars of the intergovernmental fiscal relations (IGFR) system and for fiscal decentralisation, both of which have many dimensions. This chapter focuses on economic growth, an objective that the South African government is (and has for some time been) strongly pursuing. The empirical analysis uses South African provincial-level and municipal-level data in a modified endogenous growth model.¹⁹ The supply measures for building a knowledge-based economy are investigated, arguing that an enabling regime can be created through an understanding of the effects of IGFR on economic growth. In particular, the development disparities of the various regions in South Africa can be reduced by creating a knowledge economy. However, for this to happen, the South African government needs to put proper planning, economic and fiscal mechanisms in place, while the role of innovation should not be underestimated. Fiscal decentralisation arguments can also be used to formulate a strong case for the role of sub-national government in the economic growth process – these are discussed in more detail in section 7.2. In section 7.3, provincial and municipal data is used to examine the relationship between expenditure and revenue assignments and economic growth, and then section 7.4 outlines recommendations based on the results of a formal model estimated using data from section 7.3.

18 Prior to 1994, South Africa had four provinces and nine homelands. By 1999, sub-national structural reform had resulted in nine provinces and 284 municipalities. The 1996 Constitution of South Africa states that government constitutes of national, provincial and local (municipal) spheres, which are distinctive, interdependent and interrelated. Each sphere has powers (to raise revenue, to borrow etc.) and is assigned (exclusive and concurrent) functions. In addition, creating a feasible sub-national sphere warranted vertical and horizontal division between and among the three spheres, as well as the implementation of a system of both conditional and unconditional grants.

19 A full version of this chapter containing the details of methodology and results is published in the Commission’s 2013/14 Technical Report.

7.2 Expenditure Assignment, Revenue Assignment and Fiscal Decentralisation: Definitions, Interrelations and Linkages to Economic Growth

Fiscal decentralisation involves the transfer of spending and taxing power to sub-national levels of government. Revenue and expenditure assignments are the primary linkages between IGFR and fiscal decentralisation for fostering economic growth. IGFR concerns five aspects (Bird and Vaillancourt, 2006):

- (a) The assignment of expenditure responsibilities to different government levels (i.e. the expenditure assignment);
- (b) The assignment of tax and revenue sources to different government levels (i.e. the revenue assignment);
- (c) Intergovernmental fiscal transfers or grants to address vertical and horizontal imbalances;
- (d) Sub-national borrowing; and
- (e) The institutional framework within which the national and sub-national government powers are exercised.

Each of these aspects must be addressed within the context of South African policy objectives, which may include not only efficiency (allocation), equity (distribution) and stabilisation, but also economic growth and achieving and preserving a regional balance (i.e. facilitation of more resources to relatively undeveloped/backward areas in order to achieve a more balanced growth). The chapter considers mainly aspects (a) and (b), about which some more detail is provided below.

Expenditure assignment requires the functions and expenditure responsibilities for each sphere of government to be clearly specified (as they deal with which level of government will do what and which level of government will pay for what) and follow certain principles:

- Sub-national government should focus on the allocation function (delivering goods and services, and how funds should be raised), whereas national government should focus on stabilisation and income-distribution policies;
- For economic efficiency, services should be delivered at the level of government closest to the citizen.
- Expenditure and revenue assignments should be balanced;
- Finance follows function.

In general, the assignment of expenditure functions should precede revenue sources because the prior informs the latter (Yemek, 2005). Revenue assignment requires a clear description of the tasks to be performed by each sphere of government, i.e. it essentially deals with the question of which level of government should levy what taxes.

The aspects (a), (b) and (c) constitute important 'pillars' of fiscal decentralisation; hence, fiscal decentralisation is intricately linked to IGFR, though the two terms are not synonymous²⁰ (UNDP, 2005). Fiscal decentralisation can be defined as the devolution of fiscal power (revenue and expenditure assignment, and borrowing) from national to sub-national governments (Davoodi and Zou, 1998)^{21,22}. The four arguments in favour of fiscal decentralisation are (Thießen, 2003; Elhiraika, 2007):

20 For example, papers like De Mello (2000) investigate the relationship between fiscal decentralisation and IGFR and conclude that decentralisation entails greater complexity in IGFR, so that coordination failures in IGFR are likely to have a bearing on fiscal positions, both nationally and sub-nationally.

21 Yemek (2005, p 3) defines fiscal decentralisation as the percentage of total government expenditure executed by sub-national governments, considering the size and characters of transfers, or the level of tax autonomy of sub-national governments or both. He further adds that the borrowing capacity of sub-national government also needs to be taken into account.

22 There are three dimensions of decentralisation (i.e. transfer of power from the central government to provincial and local government): administrative, and political and fiscal (Wolman in Bennet, 1990). Administrative decentralisation focuses on how responsibilities and authority for policies and decisions are shared between the different levels of government, and how these are turned into allocative outcomes. Political decentralisation focuses on how the voice of citizens is integrated into policy decisions and how civil society can hold authorities and officials at different levels of government accountable.

- ‘Diversification hypothesis’ (‘decentralisation theorem’): uniform levels of public goods and services across the jurisdictions are generally inefficient, so fiscal decentralisation may result in greater allocative efficiency.²³ Through allocative efficiency, fiscal decentralisation can influence macroeconomic governance, promote local growth and poverty alleviation directly and through spill-overs (De Mello, 2000).
- ‘Leviathan restraint hypothesis’: governments may maximise revenue to the detriment of the taxpayers, and horizontal and vertical competition among the different levels of government may prevent this behaviour.
- ‘Productivity enhancement hypothesis’: fiscal decentralisation, through the transfer of responsibility and accountability to sub-national governments, may provide incentives for the sub-national governments to look for innovative ways to produce and supply public goods and services. This hypothesis forms a basis for building the knowledge economy through innovation.
- Political arguments, such as lowering concentration of fiscal power and promotion of democracy. Fiscal decentralisation can promote the streamlining of public sector activities and the development of local democratic traditions (De Mello, 2000).

There are also a number of arguments against fiscal decentralisation (Thießen, 2003; Elhiraika, 2007):

- Fiscal decentralisation can contribute towards regional inequalities because of competition between sub-national governments and, in particular, redistributive reasons – i.e. poor regions cannot compete for mobile factors with the richer regions, and so poor regions get progressively poorer, while the rich regions get richer.
- Fiscal decentralisation may also result in lower quality government decisions, coordination failures, and greater corruption and influence of interest groups.
- Assignment of expenditure and financing responsibilities to sub-national governments can adversely affect service delivery for a number of reasons. These include a lack of capacity at sub-national level and misaligned responsibilities owing to incomplete decentralisation or political factors.
- Fixed costs associated with fiscal decentralisation (either through lack of affordability or of other capacity) may negatively affect low-income/smaller countries (implying that fiscal decentralisation becomes attractive at a high threshold of economic development).
- Fiscal decentralisation may hinder long-term economic growth, when the fiscal adjustments needed to eliminate structural imbalances are considered (e.g. effective and timely coordination between the different levels of government is difficult to implement).

In brief, fiscal decentralisation can in principle improve the efficiency of the public sector, increase competition among sub-national governments in delivering public services, and stimulate economic growth (Davoodi and Zou, 1998). Given that fiscal decentralisation has many dimensions, this chapter focuses on economic growth, which is critical for South Africa. Fiscal decentralisation can contribute to economic growth²⁴ through three main channels: decreasing the size of the government, improving resource allocation within the public sector, and increasing competition among sub-national government (Martinez-Vasquez and McNab, 2001; Nguyen and Anwar, 2011). These channels are embodied in the diversification and the productivity enhancement hypotheses discussed earlier.

²³ Allocative efficiency refers to optimal distribution of goods and services.

²⁴ Theoretical examinations of the relationship between fiscal decentralisation and economic growth started with publications such as Tiebout (1956), Musgrave (1959) and Oates (1972).

An endogenous growth model, developed by Zhang and Zou (1996) and Davoodi and Zou (1998), provides the microeconomic foundations for the relationship between fiscal decentralisation (i.e. revenue and expenditure assignments) and economic growth. The purpose is to treat the different levels of government (i.e. national, provincial and municipal) as factors of production. Fiscal decentralisation can take the form of either revenue decentralisation or expenditure decentralisation, both of which contribute positively to growth: revenue decentralisation through increased revenue collection; and expenditure decentralisation through effective allocation of public spending (Bodman, Heaton and Hodge, 2009; Nguyen and Anwar, 2011)²⁵. This chapter uses proxies for both revenue and expenditure decentralisation (or revenue and expenditure assignments) when estimating the Zhang and Zou (1996) endogenous growth model.

Lastly, even given the above, no formalised theory exists for a relationship between fiscal decentralisation (expenditure and/or revenue assignments) and economic growth (Oates, 1999). In fact, the empirical literature regarding this relationship indicates an ambiguous and uncertain link between fiscal decentralisation and economic growth; for example, see Elhiraika (2007).

7.3 What Does the Data Say About the Contribution of Provinces and Municipalities to Economic Growth

The empirical analysis used data on all nine provinces and data for district and metropolitan municipalities, as shown in Table 7.1. The selected time period in each case was governed by data availability. Strictly speaking, only six of the eight municipalities should be included in the analysis, as Buffalo City and Mangaung only became metropolitan municipalities after the 2011 local government elections (and the analysis reported in this chapter considers data prior to 2011). Category B (local) municipalities have been excluded from the analysis because of a lack of data for a number of these municipalities.

Table 7.1. Sample and cross-section specification used in estimation

	Provinces	District Municipalities (Category C)	Metropolitan Municipalities (Category A)
Number	9	46	8
Period	1999–2009	2006–2009	2006–2009

Source: For provinces, fiscal data was sourced from various editions of Provincial Budgets which can be found on the National Treasury's website (www.treasury.gov.za). For municipalities, fiscal data was sourced from the local government database which can also be found on the National Treasury's website (www.treasury.gov.za).

Proper approximation of the fiscal decentralisation variable (i.e. using expenditure and/or revenue sides of the budget) warrants some consideration. For example, Smoke (2001) warns that the fiscal decentralisation variable proxy should not detract from the political and institutional context. Hence, not only should alternative proxies be used, but the results also need to be carefully interpreted. Similarly, when looking at fiscal decentralisation, several indicators need to be used, specifically revenue, expenditure, tax effort and compensation of employees (Dziobek, Mangas and Kufa, 2011). Using the International Monetary Fund's (IMF) Government Finance Statistics, the South African government can be considered decentralised when based on the compensation of employees indicator but more centralised when based on the tax effort measure (Dziobek et al., 2011). This chapter's analysis includes expenditure and revenue indicators as measures of fiscal decentralisation.

Figure 7.1 is a scatter plot of combined cross-sections (i.e. nine provinces) with a fitted regression line (upward-sloping denoting a positive relationship, whereas a downward-sloping line would represent a positive relationship between economic growth and revenue assignment). The figure shows a seemingly weak positive relationship between expenditure/revenue assignment and economic growth in provinces. This could be as a result of the constitutional intent for provinces, which is developmental and redistributive rather than growth focused. The implication is that higher revenue/expenditure assignment would lead to a slightly higher economic growth for South African provinces, on average and holding other variables constant. This assertion is tested statistically,²⁶ and the results are used to inform the recommendations in Section 7.4.

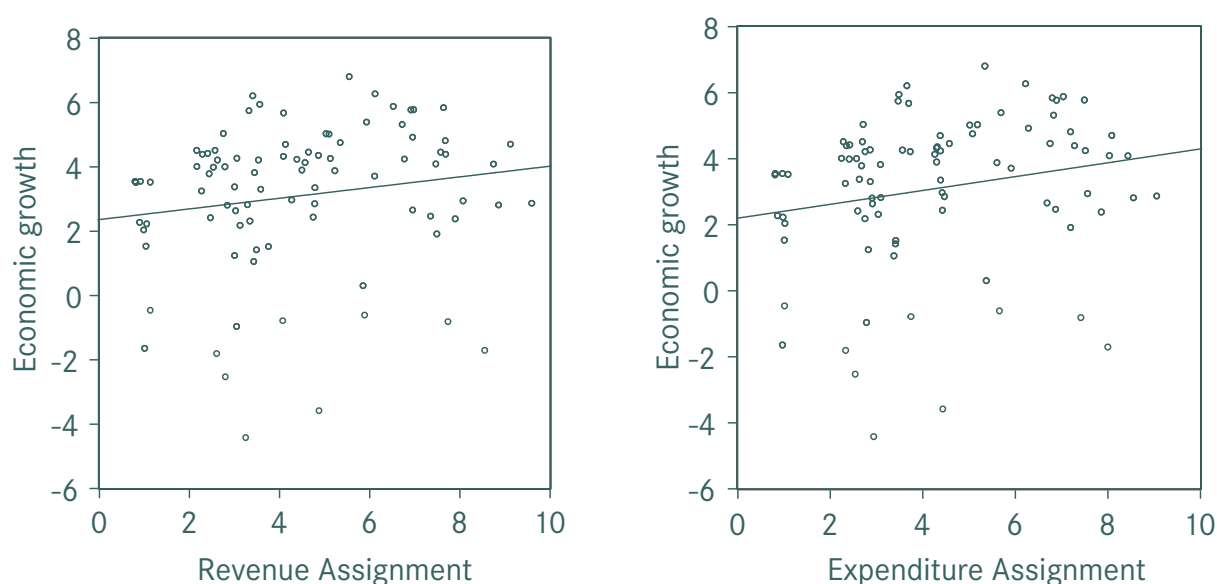
25 The issue of causality between fiscal decentralisation and economic growth also needs to be considered – Osoro (2003) quotes a number of studies that show strong support for the view that fiscal decentralisation is a function of economic growth. The author also notes that empirical evidence for reverse causality is generally contradictory and beleaguered by measurement, analytical and specification problems.

26 As mentioned earlier, these are fully contained in the Commission's 2013/14 Technical Report.

The empirical results reveal that revenue and expenditure assignments at provincial level have a negative effect on provincial economic growth, indicating an inappropriate level of (or too much) decentralisation in provincial budgetary revenue and spending. The literature gives a number of reasons for this negative effect: (i) excessive spending on the wrong expenditure items can lead to lower growth, even if decentralisation is optimal; (ii) lower growth can result from incorrect revenue assignments among the different levels of government (e.g. national government may be better than provincial government at raising revenue); (iii) provincial revenue and expenditure decisions may be constrained by national government, so the efficiency gains from decentralisation are low; (iv) provincial government may not be responsive to the needs of its constituents.

Despite the results concerning an appropriate level of decentralisation, this chapter raises the important issue of whether or not the South African government should look at redefining centralisation. Areas to explore include whether or not there is an alternative model to the existing one that will promote more favourable outcomes, and what the main reasons are for the current model not working optimally in South Africa. The latter seems more relevant in the current policy context, where optimal outcomes can be achieved through the vigour of provincial government to fulfil their mandates. Skill and accountability measures are instrumental in addressing these issues.

Figure 7.1. Scatter diagrams of economic growth and revenue/expenditure assignments: provinces



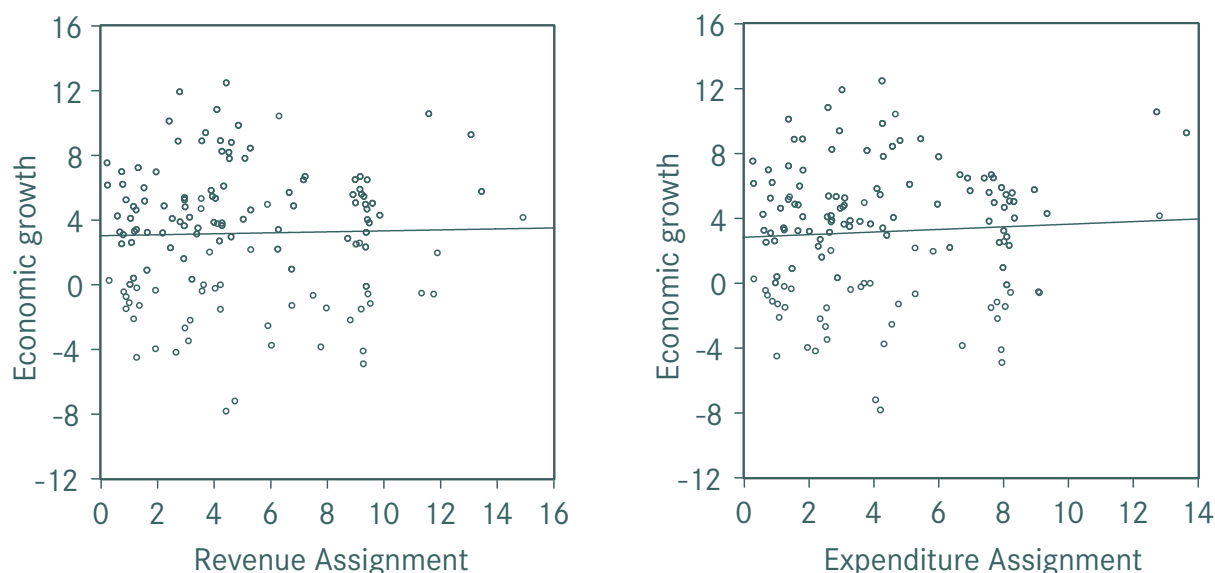
Source: Commissioners calculations

In Figure 7.2, the scatter diagrams for municipalities (district and metropolitan) provide an indication of the relationship between economic growth and revenue/expenditure assignment. What is evident is that the relationship is even weaker than that for provinces, indicating a lack of a relationship between economic growth and revenue/expenditure assignment for municipalities. Once again, these hypotheses are tested statistically, and the results are used to inform the recommendations in this chapter. These results indicate that, for municipalities, revenue decentralisation has a positive effect on economic growth, whereas expenditure decentralisation negatively affects economic growth. The first finding implies that revenue assignment at local government level is conducive to economic growth. However, the second finding indicates that expenditure assignment at local government level is inappropriate. One explanation could be that in the early stages of economic development, central government may be in a better position to undertake public investment with nationwide externalities²⁷ (cf. Nguyen and Anwar, 2011). Furthermore, expenditure decentralisation can contribute to increased corruption, which may also explain the negative effect on economic growth. Alternatively, excessive spending by sub-national government on the wrong expenditure items can lead to lower growth, even if the expenditure assignment is optimal.

27 These are spill-over effects arising from the production and/or consumption of goods and services.

The Commission has noted that, while some delivery failures are because of corruption and mismanagement of resources, local government problems are often symptoms of failure within other spheres of government. National and provincial departments send vague and inconsistent policy signals that place competing demands on municipalities, ignore or are unwilling to consult with municipalities over spending plans, and have weak managerial capacity. These are all areas of improvement that can contribute towards better growth outcomes through the local government expenditure assignment.

Figure 7.2. Scatter diagrams of economic growth and revenue/expenditure assignments: metropolitan and district municipalities



Source: Commission's calculations

7.4 Recommendations

With respect to alternative aggregate revenue and expenditure assignments for provinces and municipalities, it is recommended that:

- Key principles of national strategies such as the New Growth Path (NGP) document and National Planning Commission's (NPC) Vision for 2030 need to permeate provincial and local strategies. This can be achieved by translating these principles into complete sub-national strategies with full details on sustained implementation, followed by provincial and local governments' commitment to achieve the goals identified in the strategies.
- Key components for sub-national government to consider are capital and labour inputs, and multifactor productivity. Provincial and municipal governments should continue to invest in physical and human capital, focusing specifically on issues such as lack of adequate skills and physical infrastructure needs (maintenance, better location, etc.). In addition, effective management and accountability mechanisms should be aimed at increasing multifactor productivity.
- The results reported in this chapter imply that economic development powers are well-placed at the provincial level, while economic growth powers could be better placed at the municipal level.

- Municipalities, and particularly non-metropolitan municipalities, should be encouraged to play a more direct role in economic growth. This can be achieved by:
 - National government assigning greater revenue and tax handles to the municipalities than is presently the case;
 - Reassessing all elements to support the growth-enhancing roles of municipalities, when reviewing the fiscal framework. These elements would include the local equitable share (LES), local own-revenue sources (e.g. local business taxes) and conditional grants.
 - Such re-assessment should also ensure a better balance between equity and growth objectives in the local government fiscal framework.
- Municipalities are not necessarily doing a good job of collecting revenue from the public. Hence, municipalities need to improve their revenue-collection efforts, as these can contribute positively towards economic growth.²⁸
 - It is well known that in South Africa some municipalities (for example, metropolitan municipalities) are raising substantial revenues, while other municipalities are still very dependent on transfers from national government.
 - Issues that need to be addressed include weak capacity within local administrations, small tax bases, delivery of free basic services requiring high municipal expenditures (that can only be financed through national transfers), and a lack of 'payment culture' for services.

28 In its 2012/13 Annual Submission, the Commission had made some recommendations aimed at improving revenue performance of municipalities in South Africa which are still relevant. These include (among others) regular updating and maintaining of data and information on indigents, outsourcing of functions, establishing municipal service districts and expanding the powers of municipalities to exercise more punitive recovery measures.

Chapter 8

ALTERNATIVE SERVICE DELIVERY ARRANGEMENTS: THE CASE OF MUNICIPAL AGENCIES

8.1 Introduction

South African municipalities use alternative service delivery (ASD) arrangements, such as agencies, for a range of activities, from development and planning to solid waste removal. In theory, if correctly used, this organisational form presents numerous advantages, most notably as a result of its specialised focus and significant operational autonomy. In South Africa, the use of agencies at the local level has dropped for two reasons. First, attempts have been made to bring some uniformity to the establishment and form of agencies (whether a private company, service utility, trust and so forth). According to amendments to the Municipal Systems Act that came into effect on 1 August 2004, municipal agencies can take three forms: service utilities, multi-jurisdictional service utilities and private companies. This has led to disestablishing or reorganising of a number of existing agencies. According to the National Treasury's assessment (National Treasury, 2010) and the Auditor-General's audit report of 2009/10, a number of existing agencies do not yet meet the criteria. Second, the requirements associated with using ASD are onerous, especially for smaller, less-resourced municipalities, which prevent them from tapping into the potential benefits of an agency. Having said that, ASD arrangements do not always automatically result in benefits, and so the business case for using an ASD arrangement needs to be weighed against the potential risks. For example, the municipality must have the capacity to oversee the activities of ASD arrangements and ensure that such operations support the public sector's social developmental goals.

South African public policy does not have a diagnostic tool or set of principles against which policy and decision-makers can evaluate proposals for ASD arrangements. Drawing from international best practice, this chapter recommends a set of principles that government ought to consider when shifting away from traditional, bureaucratic-driven service delivery.

8.2 A Summary of the Literature

The literature highlights various issues that should be considered when establishing an agency. For example, sound public policy must justify the establishment of an agency, whose goal or mandate needs to be free of vagueness and multiplicity. Prior to establishing an agency, clear and formal lines of accountability are necessary. Agencies must also be able to manage themselves, so the oversight authorities can focus on ensuring the agency mandate is fulfilled and other performance-related issues. This literature also emphasises that entrenching a culture of performance is difficult in a poor/non-performing parent department. Yet it is critical. A useful framework for analysing the most appropriate organisational form for service and public goods delivery is the transaction cost theory. According to this theory, two key considerations are the characteristics of the service (asset specificity²⁹ and measurability³⁰) and the organisational form of the potential service provider. The organisational form is important because different organisations produce different incentives and authority relationships and, as such, affect how service delivery should be arranged.

29 Asset specificity refers to the extent to which specialised investment is required to perform a function or deliver a service.

30 Measurability refers to the ease with which service delivery can be monitored, or anticipated outcomes measured.

8.3 Key Findings

An analysis of South African municipal agencies reveals a number of potential barriers to good performance, including:

- Certain clauses may result in prohibitive costs, despite policy and legislation supporting the use of ASD arrangements including agencies. Prime examples are Section 77 and Section 78 of the Municipal Systems Act and Section 33 of the Municipal Finance Management Act (MFMA) which require municipalities (over and above motivating for ASD arrangements) to undergo costly and time-consuming processes to use an alternative delivery mechanism for longer than three years (South Africa, 2000; 2004).
- The lack of visible reporting on municipal agencies. Section 127(5)(a)(i) of the MFMA requires municipal entities, such as agencies, to make public their annual reports after tabling in the municipal council. However, very few municipalities have websites or do not provide the reports on their websites. Apart from the need for legislative compliance, visible reporting allows for greater transparency of operations and can allow communities to hold entities and parent municipalities more accountable for their performance.
- Information about municipal agencies is not easily located at a central portal of information. The number of municipal agencies is also difficult to determine; the municipal entities listed in National Treasury's report and in the Auditor-General's report do not all match. Establishing a central portal would facilitate better oversight, transparency and overall clarity. Availability of such information would also allow agencies to benchmark their performance against their counterparts. At a national level, the National Treasury's Public Private Partnership (PPP) Unit could play a vital role in advising municipalities on the use of ASD arrangements.
- Broad and all-encompassing mandates. Many of the assessed municipal agencies were found to have broad mandates that are contrary to those envisaged for an agency, i.e. to have a specialised focus. Broad mandates make overseeing an entity's performance more complex, particularly in the current climate where many municipalities lack key management and/or strategic-level personnel. Tighter controls at the establishment and planning phase would result in more focused agencies that are easier to monitor. Business plans are also critical, as they guide the operations and activities of agencies.
- Lack of capacity and ability to oversee and manage agencies. Before creating municipal agencies, municipalities must first demonstrate their oversight and governance ability within their own administration. Municipalities also need to have dedicated people capable of managing a municipal entity or any other ASD arrangement.

The following guidelines are proposed for principles that policymakers can use when considering establishing an agency:

- The service in question must be suitable for delivery by an entity other than government. As the literature highlights, key aspects are:
 - asset specificity, and
 - measurability.
- The establishment and use of agencies should be based on sound public policy reasoning and not on political interference or desire to garner political support.
- The agency's mandate should be precise and specialised, which will ensure agency activities are not duplicated by other organs, and (importantly) better monitoring and oversight by parent municipalities/organs of state.
- The establishment of an agency should be contingent on the ability of a parent department/municipality to manage its own operations, in order to ensure sound oversight and that social objectives are maintained at the core of public service delivery.

8.4 Recommendations

With respect to alternative service delivery arrangements (with a focus on municipal agencies), the Commission recommends that:

- Government's approach to regulating agency formulation should balance maximising the potential benefits of utilising an alternative service delivery (ASD) arrangement with minimising the attendant risks. In the quest to improve performance and efficiency, ASD arrangements may (in appropriate circumstances) provide a creative way for municipalities to deliver services, particularly against the backdrop of limited financial and human capital resources. Therefore, the regulatory framework for municipal entities should ensure that:
 - The use of an ASD arrangement is contingent on a demonstrably sound business case for its establishment and sustainable operation;
 - Unnecessary, costly and time-consuming regulations are avoided. To this end, government should review existing legislation, specifically Section 77 and Section 78 of the Municipal Systems Act and Section 33 of the MFMA, which places onerous demands on municipalities wanting to use an ASD arrangement.
- Establishment of municipal agencies, or any ASD arrangement, should be linked to the parent municipality having an adequate level of performance and effective oversight ability. Determining whether performance is adequate or not should be linked to the audit outcomes of the parent municipality. Government should discourage the creation of agencies where the parent municipality is manifestly weak; for example, if the municipality is found to have a severely qualified, adverse or disclaimed audit result.
- Legislation that requires municipal entities to make public details of their performance and plans (as required in terms of Section 127(5) (a) (i) of the MFMA) should be strictly enforced, and non-compliance reported to the Auditor-General. This is necessary not only for compliance but also for greater transparency of agency performance, thereby enabling better monitoring and oversight by parent municipalities and treasuries.
- Government should establish a central portal of financial and performance-related information on municipal agencies. Such a facility could also serve as a peer-learning mechanism through which success stories are shared. Municipalities and agencies could also use the information to benchmark their performance, while greater public availability of this information will improve oversight and transparency. National government should take a more proactive approach, perhaps through the National Treasury's PPP Unit, to advising municipalities, especially lesser resourced ones, on the applicability of using an ASD arrangements in different instances.
- Government (particularly the National Treasury's PPP Unit) should put together a list of criteria to assist municipalities in deciding whether a sound business case for the creation of entities exists. The criteria should:
 - Establish whether benefits exceed potential costs;
 - Ensure potential risks are mitigated;
 - Focus on aspects such as measurability and asset specificity of the service in question.

Chapter 9

UNDERSTANDING THE DYNAMICS OF THE CAPACITY CHALLENGE AT LOCAL GOVERNMENT LEVEL

9.1 Introduction

The South African government has budgeted significant amounts of money for capacity building. Yet very little research has examined whether such budgets and expenditure have translated into increased capacity and performance, specifically at the local government level. In recognition of the need to strengthen human capital, the government has implemented an array of interventions. In addition to Project Consolidate and Siyenza Manje, which have had limited success, discretionary funding through the Financial Management and Municipal Systems Improvement grants are allocated annually via the division of revenue process. However, the extent of underspending³¹ of these grants has led many stakeholders, including the Commission, to question whether South Africa is getting value for the money spent in trying to build public-sector capacity. Notwithstanding the lack of outcomes, development of local government capacity-building continues unabated. Most recently, the Department of Cooperative Governance (DCoG) unbundled Siyenza Manje and established the Municipal Infrastructure Support Agency (MISA) to drive capacity for improved delivery of municipal infrastructure.

Four objectives guide this research:

- (i) To quantify the amount of public funds dedicated to local government capacity building since 2000;
- (ii) To contribute to an improved understanding of what constitutes lack of capacity at the local level;
- (iii) To assess whether the various spheres of government are playing their required roles in building capacity at local government level, as envisaged by the legislative framework;
- (iv) To assess critically the government's approach to capacity building in light of Outcome 9, the delivery agreement for local government and, if necessary, to recommend alternative/complementary intergovernmental measures for building capacity.

Primary and secondary data and research were collected and analysed. Primary data was collected through semi-structured interviews and questionnaires, while secondary research examined, among others, consolidated reports from National Treasury, DCoG, Statistics South Africa, the Auditor-General, the Commission and the Demarcation Board.

³¹ For example, between 2003/04 and 2006/07 on average only 33.9% of the Municipal Systems Improvement grant allocated was spent (National Treasury, 2008:67).

9.2 Key Findings

A number of key issues emerged from the research. One of the main challenges is designing, planning, implementing, monitoring and evaluating the progress made in capacity building, when no clear definition or common understanding of capacity exists among stakeholders in local government. Truly successful capacity building requires all three components (individual, organisational and institutional) to be addressed in a coordinated and sequenced manner. Simply attempting to deal with the visible symptoms does not sort out the underlying capacity challenges. Instead, long-term, sustainable solutions need to be designed that respond to the particular needs of municipalities within the macro-environment.

Capacity constraints are often used to mask the real causes of municipal non-performance. The uneven local government performance is not only because of capacity constraints, but also (perhaps more importantly) due to the tensions in intergovernmental roles and responsibilities, the political-administrative interface, high vacancy rates and instabilities in administrative leadership, skills deficits, poor organisational design, inappropriate staffing and low staff morale.

Municipalities outside urban areas struggle to attract experienced technical and professional skills. The situation is worsened by the weak linkages with tertiary educational facilities and poorly organised professional bodies, which decrease opportunities for further skills development (DCoG, 2009). In many municipalities, outsourcing activities is seen as an increasingly cost-effective method of delivering services. This is because of the financial pressures facing municipalities that constrain their ability to increase employment. The skills shortages and employment equity requirements make it even more difficult for towns and rural municipalities to recruit suitably qualified staff (National Treasury, 2011).

All municipalities raised the problem of skills retention, highlighting the lack of a coordinated effort to retain skills. In some cases, officials seek alternative employment because they fear that their performance contracts will not be renewed or because of political interference in the administration. Smaller municipalities in particular are unable to compete with larger municipalities in retaining officials. Moreover, municipalities' rigid interpretation of the Employment Equity Act has meant that the balance between the need to fill vacancies with competent employees and the objectives of the Act has not been maintained. This leads to positions often not being filled when a suitable affirmative action candidate cannot be found, particularly in areas where there are distinct skills shortages. This has an impact on service delivery.

Evidence of a high incidence of irregular or inappropriate appointments is of concern (DCoG, 2009). While vacancy rates are often used as an indicator of organisational capacity, appointments are commonly made to positions that do not exist in the approved organisational structures (National Treasury, 2011). Organised labour has complained that "nepotism and favouritism result in erratic appointments and promotions. Cases have been cited where posts are filled without being advertised; people are appointed for posts in technical positions where job evaluations and descriptions are not in place" (DCoG, 2009).

To date, capacity-building initiatives have been based on "one size fits all". However, the consensus is growing for a differentiated approach when supporting municipalities (The Presidency, 2010). The Outcome 9 Delivery Agreement proposes an audit on the quality and quantity of existing capacity at municipalities in order to establish patterns and identify where the greatest needs are.

Municipalities find that, despite the urgent need, gaining access to funds for capacity building can be a difficult process. This delay, coupled with the time it takes to gain approval for particular capacity-building projects, affects municipalities' ability to fulfil this function. Some municipalities also indicated a disconnection between the available funds and the market-related costs of particular training. Furthermore, supply chain management processes contribute to delays in securing capacity-building service providers.

The lack of internal communication between the Human Resource Development (HRD) officials and finance officials leads to situations where HRD officials are not aware of the available capacity grants and their related conditions. Due to limited resources and budgetary constraints, training programmes are selected based on costs, rather than applicability, practicality and quality. The pursuit of cost savings compromises quality.

Monitoring and evaluating the actual performance, successes and failures of capacity-building initiatives have proven problematic, and accountability is murky (FFC, 2010). No reliable, comprehensive data is available for the amounts municipalities spend on staff training or the number of staff that benefit from such programmes. Indeed, information is lacking about whether such capacity-building programmes have achieved their outcomes and impact.

In municipalities, the lines of authority and accountability have become blurred, with contests for authority between unions and administrations. These dual and contradictory structures of authority have created an environment where institutional collapse and lack of performance are ignored and often vehemently denied, despite overwhelming evidence. These structures contribute directly to municipal performance failures and are covered up with references to a 'lack of capacity'. Municipalities must take the necessary actions to deal with bad behaviour and bad performance in a decisive manner. Comprehensive, functional performance management systems are central to such a process. Therefore, it is critical that roles and responsibilities and lines of authority be very clearly delineated and enforced (DBSA, 2011).

For capacity-building initiatives to be successful, considerable work will have to be done in clarifying the roles and responsibilities of all stakeholders involved in providing support to municipalities. The current lack of clarity, failure of departments and entities to cooperate and continued turf-battles contribute substantially to the poor outcomes of government's capacity initiatives and the duplication of effort.

9.3 Recommendations

With respect to the dynamics of capacity challenges at local government level, the Commission recommends that:

- Capacity-building efforts should be comprehensive and sustainable, instead of quick-fix, short-term solutions. To this end, it is necessary to:
 - Establish a single capacity-support agreement per municipality. This agreement should stipulate all actions to be undertaken by national and provincial government and other relevant role-players. Measurable objectives for capacity-development programmes should be clearly defined (relative to credible baselines) and independent exit evaluations should be compulsory.
- Environmental constraints, specifically with respect to the allocation of powers and functions and the formulation of conditional grants, may need to be simultaneously adjusted.
- With respect to capacity-related conditional grants:
 - The grants' conditionality must commit municipalities to specific, independently verifiable capacity and performance improvements.
 - Grants should be redesigned to consider the quality of capacity-building interventions, instead of having a narrow quantitative focus.
 - An external, objective evaluation dimension should also be included in capacity grant requirements.
- Capacity-building interventions should holistically coordinate individual, organisational and institutional-level dimensions of capacity building in a particular municipality over the medium term. Instead of focusing disproportionately on training, support programmes should include technical support for new systems, business process redesign and change management, based on an assessment of the relevant municipality:
 - Individual: officials must have the necessary technical skills, knowledge, experience and competencies to fulfil their particular functions. This means appointing the correct person to the correct post (adherence to recruitment, selection and any minimum competency requirements) and ensuring that officials then receive training (both accredited and non-accredited) relevant to their areas of responsibilities, to ensure continued workplace effectiveness.
 - Organisational: municipalities should be supported in compiling realistic IDPs, implementing functional and effective performance management systems and knowledge management policies, to enhance organisational memory and data management, and to ensure accurate and relevant reporting. Critical vacancies must also be filled and workable staff-retention strategies implemented. Skilled individuals must be appointed to vacant positions for which affirmative action candidates cannot be found, and audits should be conducted of municipal positions that fall outside the approved organisational structures.

- Institutional: greater differentiation and flexibility is required in the design of the local government fiscal framework. A differentiated approach is needed for the assignment of functions to municipalities, based on their capacity to effectively manage them. Once a municipality has proved its ability to provide a specific basket of services, decisions can be made regarding expanding the range of services provided by such a municipality. Where service delivery failures persist, such services should be removed from municipalities. Furthermore, the establishment of a coordinated capacity-building function across all local government departments is recommended. These actions must be complemented by simplified, streamlined and coordinated reporting requirements for local government and clearly defined roles and responsibilities for national and provincial departments. To assist rural municipalities, the value and practicality of an assistance programme should be explored, aimed at attracting and retaining scarce skills in these areas (similar to the scarce skills payments made to doctors in rural areas).
- To improve municipal capacity, the medium and senior management of municipalities need urgently to be stabilised, through greater insulation from political interference in the retention of skills and in the recruitment process. The link between actual performance of managers and the renewal (or not) of performance contracts should be strengthened. The human-resource function within municipalities needs to be proactive in identifying possible incentives for retaining scarce skills and ensuring that roles and responsibilities are clearly defined within municipal job descriptions. This challenge will also only be solved through increasing the pool of available people to fill vacant positions.
- Minimum competencies as entrenched in the MFMA should be enforced so as to ensure that appropriate technical skills are in place. Based on field work conducted by the Commission, the following functions require particular attention: revenue management, supply chain management, sewerage and water treatment plant operators, road maintenance supervisors, health inspectors and planning and project managers.

Chapter 10

ASSESSING GENDER RESPONSIVE BUDGETING IN LOCAL GOVERNMENT

10.1 Introduction

The South African government has shown its commitment to gender equality through various policy and legislative measures, including antidiscrimination legislation and employment equity policies. The country is also a signatory to several international conventions, protocols and frameworks, whose objectives are to advance the cause of women in the socioeconomic fabric of the country. These conventions, protocols and frameworks include, among others, the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW), the Beijing Platform of Action and the Millennium Development Goals (MDGs).

Despite these commitments, unacceptable gender inequalities still remain. African female-headed households are the poorest of the poor in South Africa. According to the Statistics South Africa report (StatsSA, 2011), 43.8% of households in South Africa are headed by females. Of these female-headed households, 22.8% fall into the poorest quintile 1, compared to 18.1% of male-headed households. The report found that 31% of female-headed households fall into quintiles 4 or 5, compared to 45% of male-headed households. It is time to look at alternative levers for change. One avenue that should receive greater emphasis is the intergovernmental fiscal relations (IGFR) system. A successful IGFR system would be sensitive to the needs of women and contribute to moving them out of poverty. Ensuring that resource allocation is gender sensitive will require innovations in policy design and implementation. One such innovation is gender³² responsive budgeting (GRB), which has the potential to contribute to moving women out of poverty.

GRB is an instrument that seeks an efficient and equitable distribution of resources based on the needs of different gender groups in society. Given the poverty profile of South Africa, any attempt to target public resources at the poor must confront gender-related issues. In the mid-1990s, gender budgeting began to be implemented at national level, but the process has gradually lost momentum and whether these gender commitments are being translated into fiscal commitments at local level is unclear. Yet gender-budget initiatives are needed most at local level, where gender disparities in basic services provision are more glaring.

In many countries, governments increasingly use GRB to turn their gender-equality commitments into reality. GRB (also known as gender budgeting or gender-sensitive budgeting) uses the budget to promote gender equality (Budlender, 2008; Chakraborty, 2007; Reyes, Budlender and Melesse, 2009; World Bank, 2005). Its objective is not to formulate a separate budget for women but to implement budgetary processes that are sensitive to the different needs of men, women, boys and girls.

Gender budgeting is different from, yet is a component of, gender mainstreaming.³³ GRB recognises that traditional budgeting systems are fundamentally patriarchal and do not often recognise the contribution of women – the primary (unpaid) caregivers – to the national fiscus. As unpaid care work does not carry a price tag, and society does not pay for it, policy makers often assume that its supply is limitless, and care receivers can have as much as they want (Budlender, 2004).

32 Gender is not the same as sex. Sex is biological, but gender relates to power relations in society – who gets to decide on priorities and shape future development, who gets to decide on resource allocation, and who gets access to opportunities etc. And finally, what actual budget allocation and delivery results from this process. The different roles of women, often arising from deep cultural histories, result in differential participation in budget process, differential prioritisation in allocations and differences in developmental impact.

33 Gender mainstreaming refers to a process that is goal orientated. Recognising that most institutions consciously and unconsciously serve the interests of men, it encourages institutions to adopt a gender perspective in transforming themselves. It promotes the full participation of women in decision making so that women's needs move from the margins to the centre of development planning and resource allocation.

Gender budgeting is an innovative strategy for achieving gender equality. It makes the fiscal space more democratic and the budgeting process rational, thereby promoting accountability and changing the budget focus to gendered outputs and outcomes (Cagatay *et al.*, 2000). However, although budgeting is based on rational analysis, at heart it is a contested political process that also relies on value judgments. It is important that these value judgements reflect the Constitution's values and aspirations – of gender equality, of the progressive realisation of socioeconomic rights and of democratic participation, transparency and accountability.

This chapter's objective is to assess the gender responsiveness of local government budgeting processes in South Africa and to evaluate them systematically through gender lenses. In addition, the chapter recommends possible interventions by municipalities and other stakeholders to advance gender equality through the intergovernmental fiscal system. Unfortunately, to date, very little research work has been done in this important area. It is the Commission's fervent hope that, in the near future, a body of knowledge, experience and evidence will emerge to guide the institutionalisation of gender budgeting that is sensitive to the substantial differences between municipal contexts (e.g. rural versus urban) and capabilities.

10.2 Research Methodology

In assessing the gender responsiveness of local government budgets, the study followed a two-pronged approach. First, the study reviewed Integrated Development Plans (IDPs) of 30 randomly selected municipalities.³⁴ IDPs are crucial documents that provide insight into the strategic goals and detailed action/implementation plans of municipalities. An IDP is an excellent tool to check a particular municipality's commitment to women empowerment and gender equality, as the local government budget's aim is to provide resources to the IDP. Therefore, if the IDP and its underlying sector plans are not gender sensitive, the underlying budget is unlikely to be gender sensitive.

Second, the study assesses gender responsiveness of municipal budgeting processes through case studies of municipalities, with a particular focus on local economic development (LED), water and sanitation, early childhood development (ECD) and housing infrastructure. These four sectors were selected because they are well known to ease the plight of women and, as such, are good quality-of-life indicators. Women are the primary caregivers, and so providing adequate water and sanitation will have an impact on women's time. The availability of adequate housing or shelter affects the way in which women can provide for their dependents, especially given the increase in women-headed households. Adequate housing also affects women's safety (their own and that of their dependents), particularly in areas that experience high levels of gender-based violence. The availability of affordable ECD allows women to participate in other income-generation activities and become more involved in public decision making (e.g. as community leaders).

10.3 The Findings

Gender Responsiveness of Integrated Development Plans

The review of the 30 IDPs reveals the following:

- **There is lack of gender mainstreaming and women empowerment.** Most municipalities fail to mention gender mainstreaming and women empowerment processes in their current IDPs. The exceptions are Mangaung, Mogale, and Sundays River, whose current IDPs name specific processes and programme activities. This lack of gender-specific information in the IDPs is a possible indication of poor gender-specific planning and budgeting processes, as well as poor recording and monitoring processes.
- **Gender equality is seen as a social development issue.** Of the 30 municipalities, 29 deal with gender issues as social development rather economic empowerment issues. Viewing gender equality only within the context of social problems limits the way in which the substantive equality goal (decision making, resourcing and opportunities) should be addressed. In other words, the importance of women's economic access to available opportunities, of interventions that target women's skills development, productivity and financial independence (including independence from government grants) are not recognised.

³⁴ Although small, the sample nonetheless provides trends and important insights on gender budgeting.

- **Gender equity, not equality, is the main focus.** Most IDPs use equity language and, while the equity process is a very good entry point into gender mainstreaming and women empowerment, it often stops at the point where the numbers look reasonable. Gender equity, which is about female representation, is often the main focus, not gender equality. Yet gender equality goes beyond gender equity, to encompass gender mainstreaming and general empowerment of women.³⁵
- **Gender equality commitments are not translated into fiscal commitments.** Many of the IDPs still mention women as part of the 'marginalised and poor' group, e.g. women, children, youth, the elderly and people with disability are grouped together. Budgets are then allocated to this group without detailing how different sub-groups will benefit from the resources. IDPs show little evidence of planning processes and budgets for gender mainstreaming and empowerment of women.
- **Gender mainstreaming as a performance indicator is missing.** Virtually all municipal IDPs reviewed have not developed key performance indicators for gender mainstreaming. In some instances, targets and indicators have been set for implementing a women's development strategy and programmes. However, in the absence of a gender-mainstreaming indicator for the entire municipality (for example in the municipality's Balanced Scorecard), progress towards gender mainstreaming cannot be measured, and gender programmes will remain marginalised and under-resourced.

Case Studies

The case studies covered seven municipalities, which were selected to include a broad spectrum of parameters (urban/rural, local/district/metro, coastal/inland). The sample comprises the City of Cape Town Metropolitan Municipality (Western Cape), Thabo Mofutsanyana District Municipality (Free State), Mafube Local Municipality (Free State), Emfuleni Local Municipality (Gauteng), Randfontein Local Municipality (Gauteng), Amathole District Municipality (Eastern Cape) and Maletswai Local Municipality (Eastern Cape). From in-depth interviews and focus group discussions in the selected municipalities, quantitative and qualitative information was obtained to assess each budget phase for its gender responsiveness. The findings of the seven case studies are summarised in Table 10.1.

35 Gender equity forms the building block for gender equality. The concept of gender equality refers to full equal rights (political, economic, civil, social and cultural) between men and women, with no one denied such rights.

Table 10.1. Summary of the case study findings

	Maletswai LM	Emfuleni LM	Mafube LM	Randfontein LM	Thabo Mofutsanyana DM	Amathole DM	City of Cape Town Metro
1. A municipality has an approved gender policy							
2. A municipality has a Gender Mainstreaming (GM) Strategy							*CS&SD
3. A municipality has a dedicated gender focal person (GFP) (work portfolio)	*	*			*	*	*
4. A municipality has a Special Programmes Unit (SPU)	*				*	*	*
5. A municipality has an SPU trained in gender mainstreaming							*
6. A municipality has budget officers trained in gender mainstreaming							*some
7. A municipality has senior managers trained in gender mainstreaming							*some
8. Senior managers regard gender mainstreaming as a high priority			*	*			
9. Political principals regard gender mainstreaming as a high priority		*	*	*			
10. Gender equality is part of senior managers' performance agreement							*some
11. A municipality uses gender equality indicators	*some						*some
12. A municipality collects information that is disaggregated by sex	*some			*some			*
13. All departments plan / budget for gender equality							
14. A municipality has a monitoring plan for gender equality							*some
15. There is sex disaggregated reporting from all departments							
16. A municipality does sex disaggregated public expenditure incidence analysis							*partly
17. Tenders issued to 100% women-owned entities	*			*			*
18. Tenders issued to ≥50% women-owned entities	*					*	*
19. Tenders issued to women-owned companies ≥R500,000	*			*		*	*
20. Tenders issued to women-owned companies ≤R500,000				*		*	*
21. ECD centres run by the municipality				*			
22. Funded projects: calendar events e.g. Sixteen Days, Women's Month, etc.	*	*		*	*	*	*
23. Funded projects: Local Economic Development	*					*	*
24. Funded projects: Gender Based Violence	*						*

NB: *indicate yes/existence

Table 10.1 suggests that gender mainstreaming, and thus gender budgeting, in local government is limited. Interestingly, most municipalities fund calendar events (e.g. women's day or 16 Days of Activism Against Gender Violence Campaign), which do little for long-term empowerment of women. The reasons for limited gender mainstreaming and gender budgeting in local government include:

- Absence of an approved gender policy across all municipalities.
- Lack of a municipal gender mainstreaming strategy (none of the municipalities in the sample have one).
- Although municipalities generally provide human and financial resources for gender focal persons and SPU portfolios, the incumbents are not trained in gender mainstreaming and gender budgeting.
- Personnel in management (who make decisions) and budget officers (who track expenditure) have not been trained in gender mainstreaming.
- Gender equality indicators and the collection of gender disaggregated information are limited.

The case study analysis was also extended to the four sectors: water, LED, ECD and housing. However, the analysis was limited by the unavailability of gender-disaggregated data in virtually all municipalities. The interviews with municipality officials established a few interesting facts:

- Some municipalities have LED projects targeted at women.
- Only three of the seven municipalities run ECD centres, and only one has ECD policy guidelines.³⁶
- Only two municipalities make an attempt at collecting sex-disaggregated data.
- Women-headed households have limited access to piped water.

36 According to Stats SA (2011) Report, children in poor households, especially those in female headed households or rural areas or in informal settlements, have little access or no access at all to services that are key to early childhood development (ECD).

Table 10.2. Summary of findings

	Maletswai LM	Emfuleni LM	Mafube LM	Randfontein LM	Thabo Mofutsanyana DM	Amathole DM	City of Cape Town Metro
1. LED funding for companies that are 100% women owned	*			*			*
2. LED funding for companies which are 50%–99% women owned	*			*		*	*
3. Tenders of ≥R500,000 issued to women-owned companies	*			*		*	
4. Tenders of ≤R500,000 issued to women-owned companies	*			*		*	
5. A municipality has ECD Policy Guidelines (detailing operational relationship with province)				*			
6. There are registered ECD centres in the municipality	*			*			*
7. There are ECD centres run/managed by the municipality				*			
8. The municipality collects sex disaggregated data on the provision of housing? If yes, the last update was when?				*		*	
9. ≥ 50% of households served water pipe connection							*
10. ≥ 50% of households served by communal water pipe	*					*	*

Source: Interviews with Municipalities. NB: * indicate yes/existence

10.4 Conclusion

The above analysis shows that gender-responsive budgeting is limited in local government. For municipalities to move towards a gender-mainstreaming approach and to the institutionalising of GRB, the following are the key areas of intervention needed:

- **Collection of gender disaggregated data** is fundamental for gender-responsive planning and budgeting. Without meaningful data on the situation of women and men, an analysis of target group(s) is not possible.
- **Sensitisation of decision makers (political, principals and officials)** to raise awareness about gender issues and to provide them with skills to analyse the issues and act as change agents. Gender mainstreaming and GRB is not only about planning and budgeting but also about the local government approach to women empowerment and gender equality.
- **Increase the number of women in decision-making** processes of local government where they can ensure that gender commitments are translated into fiscal commitments. Within patriarchal structures, women are more likely to champion the cause of gender equality and speak directly to the needs and priorities of women.
- **Sensitisation of planning and budget officials** so that municipal officials who plan and draw up budgets see that the work they are doing may affect women and men differently. Gender sensitisation must not only focus on a change in attitudes towards patriarchy and gender equality, but also provide officials with the skills to plan for gender responsiveness and to track budgets accordingly.

- **Training and capacity building** to ensure that officials can develop actions at every stage of the project cycle that supports a gender mainstreaming approach. Awareness raising and sensitisation are not enough to empower officials across all municipal departments, but must include planning, project implementation, budgeting, community participation and monitoring and evaluation.
- **Advocacy** so that decision makers (political principals and officials) are influenced to ensure that women empowerment and gender equality is part of the municipality's strategic agenda. Raising awareness of gender mainstreaming and GRB is central to the issue of sustainability (and the move away from events-driven equality).
- **Institutionalising gender-responsive budgeting**, not simply as an add-on activity with reports provided by GFPs and SPUs. Municipal budget guidelines, including planning formats, annual budget circulars, quarterly performance and annual reporting requirements should be designed in a way that guides gender-responsive planning and budgeting.
- **Gender analysis of existing revenues and expenditures** so that local government finance officers can promote post-budget, gender-aware impact analysis to determine GRB and the impact of public finance. The way in which government raises revenues and its pattern of public expenditures could support gender-blind macroeconomic planning which will unfairly disadvantage women.
- **Gender-responsive budget guidelines** for government departments, issued by national and provincial treasuries in consultation with the Department of Cooperative Governance and local governments. Gender-responsive planning and budgeting requires that government departments approach gender equality as part of fulfilling their core business rather than just an add-on activity. Such guidelines would advance the agenda on gender mainstreaming and the institutionalising of GRB.

10.5 Recommendations

Two sets of recommendations are proposed, one that requires the attention of national and provincial governments, and the other that requires the attention of municipalities themselves.

With respect to assessing gender-responsive budgeting in the local government, the Commission recommends that:

- National and provincial governments should:
 - Run gender budgeting pilots in a few municipalities first and evaluate results before wider application. These pilots could be linked to ensuring gender disaggregated data for key conditional grants as part of the grant framework in the Division of Revenue Act.
 - Ensure municipal IDPs institutionalise gender planning by sector (e.g. water and sanitation, LED etc.) and include gender disaggregated performance indicators and targets.
 - Provide gender budgeting good practice guides and toolkits.
 - Provide guidelines for collecting sex-disaggregated data for budgeting processes and ensure that municipalities have the capacity to analyse budgets from a gender perspective.
- Local government should:
 - Institutionalise gender-responsive budgeting process linked to IDPs.
 - Build capacity for gender mainstreaming and GRB at local level.
 - Ensure gender-responsive appropriations and budget allocations.
 - Ensure gender-sensitive public participation and consultations at local level.

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Notes



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