



TOWARDS RESILIENT CITIES

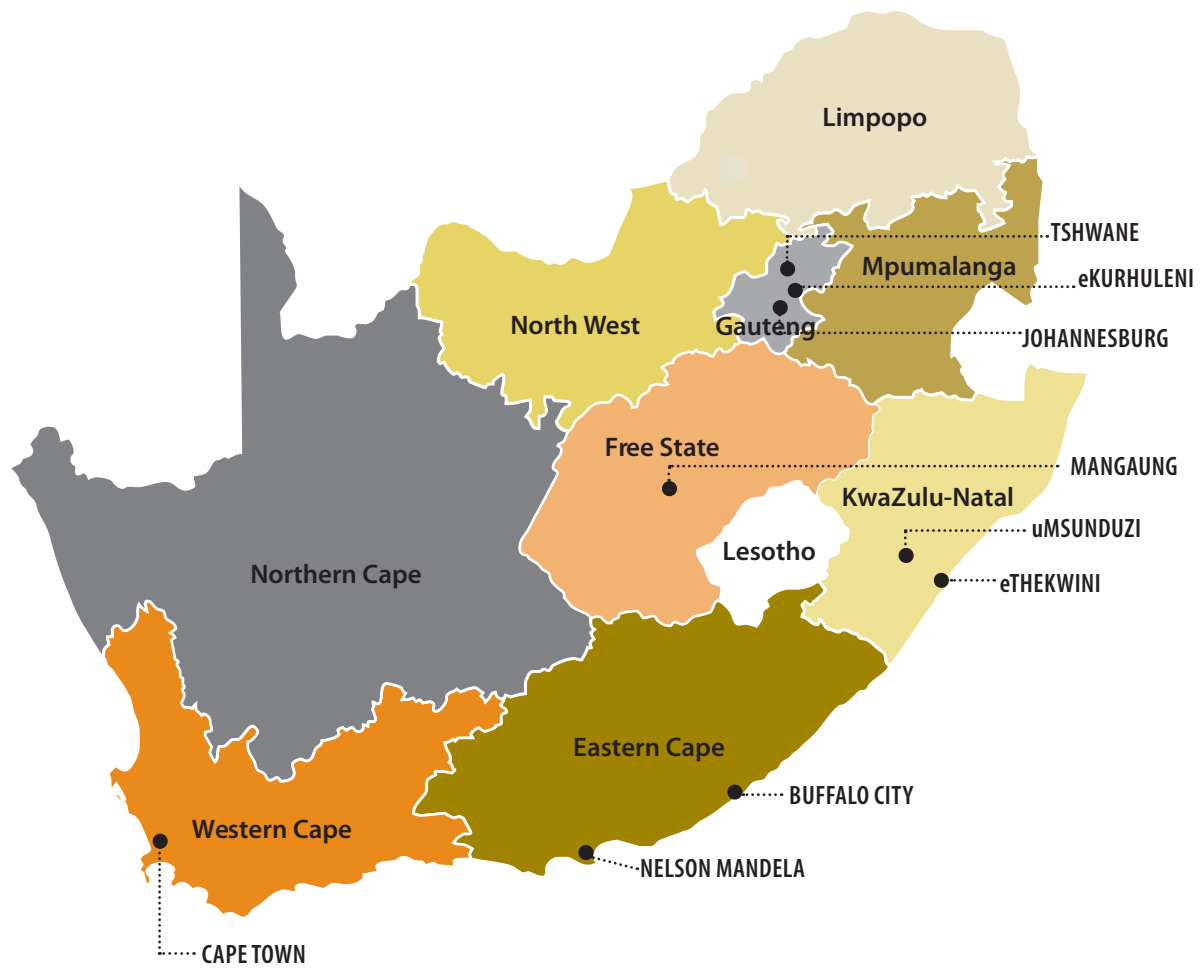
A reflection on the first decade of a democratic and transformed
local government in South Africa 2001-2010



Towards Resilient Cities

Resilience is particularly relevant to the profound transition taking place in South Africa. Questions are raised about the nature and pace of spatial, social and economic transformation, and about the durability of these changes. Are South African cities tied into a narrow, exclusionary and unsustainable growth path at the risk of future disorder or disaster? Are they reducing their dependence on private transport, non-renewable energy sources and low density, highway-oriented development? Is any progress being made in relation to the structural causes of unemployment, poverty and inequality, including spatial segregation? The 2011 State of the Cities Report answers these questions and examines how cities can become drivers of all-round development for the nation.





FOREWORD BY THE CHAIRPERSON OF THE SOUTH AFRICAN CITIES NETWORK



This report is timely. It comes on the eve of the very important 18 May local government elections. It would be useful if some of the key issues raised in this report infuse the local government discourse around the elections. But, of course, in an election campaign parties and candidates will be tempted to focus on issues in a report such as this that most advance their respective cases to win votes. Fine – but at least the issues get to the public! And, as the South African Cities Network (SACN), we will present in a more user-friendly, accessible form the key issues that emerge in this report.

But important too: there is a need for a balanced, reflective consideration of the key issues in this report in the longer term. And for politicians, policy-makers, practitioners, business people, trade unionists, activists and others to see what value the report has for action. Clearly, our cities are crucial to the country's growth and development. They are vital too, to the success of our democracy. The nine SACN cities account, in fact, for 60% of the country's economic output. All stakeholders, and residents too, need to do more to make the cities work better.

Cities cannot be left on their own. Provincial and national government need to much more actively assist the cities in the spirit of cooperative governance.

Of course, increasing attention is being paid to the rural areas. This is important. But getting the cities to work better is crucial to strengthening the rural areas. We need to have a clear and consensually shaped urbanization policy that recognizes the crucial importance of cities in many respects, not least in contributing to addressing the challenges in rural areas.

This too, the contribution of the cities to the rural areas, is part of the expression of the resilience of cities which is the theme of this report. For all the challenges, many created by conditions beyond their control, the cities have managed to cope reasonably, and have shown resilience. They showed their mettle in the way they hosted the 2010 World Cup – the best ever World Cup, according to FIFA!

The 10 years under review in this report are about the cities adapting and finding themselves as new cities. The 10 years ahead will also be about adapting – but they must, crucially, be about strengthening too. Cities, in cooperation with their residents and all stakeholders, have to do better.

We owe much to the first generation of city leaders, managers and administrators for what they have done. The next generation will inevitable be called upon to do more. We hope that this report will assist them in addressing the challenges they will face. We are keen to engage them in dialogue about the issues raised in this report.

Yunus Carrim

Deputy Minister of Cooperative Governance and Traditional Affairs

FOREWORD BY THE CHIEF EXECUTIVE OFFICER OF THE SOUTH AFRICAN CITIES NETWORK



Many developmental, societal, economic and political challenges continue to confront local government, especially the largest and most urbanised municipalities of South Africa. We need to face these problems, whatever their magnitude and size, which is precisely what the South African Cities Network (SACN) has strived to achieve since it was established in October 2002.

The SACN continues to develop a much nuanced picture of the impact of our public policy in practice, by creating spaces and platforms of interaction, knowledge and information exchange between practitioners from across our member municipalities, local government in its broad form, partners and colleagues in the other spheres of government, and the private and social sectors, including state-owned enterprises.

Through patient analysis of trends and behaviour, and through this Third Edition of the State of South African Cities Report, we can safely conclude that, through improved and differentiated support, our cities will become spaces of socio-political and, more crucially, economic growth. We know that many more challenges lie ahead, most of which will require space-specific responses.

SPATIAL GAP EFFICIENCIES

The segregated spatial inheritance continues to be a challenge. Large municipal governments, seeking to reverse the impact of apartheid, have to contend with issues such as unstable population movements, demands for better democratisation, increasing youth unemployment and unequal community participation. The built environment triplets of public transportation, land use management and human settlement, cannot be dealt with by working in silos.

NATURAL RESOURCES DEPLETION

In 2002, when South Africa hosted the World Summit on Sustainable Development, few thought that we would face the challenges of climate change so soon, or imagined electricity shortages or flooded streets with storm-water drainage problems. The vulnerability of our food, electricity, water and health infrastructure has been revealed. As we prepare to host the COP 17 in December 2011, climate change (and the depleting natural resources) is strongly on urban governance agenda.

RURAL-URBAN INTERDEPENDENCE

The prioritisation of rural development has come at the right time, as we grapple with the impact of in- and out-migration. By understanding rural and urban interdependence, we will see that our municipalities are not all the same. While their challenges may be similar, the depth and scope of their problems are different and thus cannot be solved with the same tools. For that reason, it is important and critical for the entire policy machinery to begin reconfiguring the functionality of urban spaces.

LOCAL GOVERNMENT FINANCING MODEL

The public sector machinery also needs to deal decisively with how local government has been financed over the last ten years. As this report reveals, the current revenue allocation processes are not sustainable. The result of past financial support mechanisms and changes is the unintended consequence of reduced local accountability to local demands by municipalities. Compounding the problem is reduced sources of revenue for local government (in part due to the global recession) and general financial resource instability.

STABILITY AND IMPROVED CAPACITY

All these issues have combined to create a (mis)perception that local government is the poorer cousin of the provincial and national spheres of government; another unintended consequence of our behaviour. Local government needs to admit that it has contributed to this perception by not improving the quality and reliability of its political and administrative human capacity. Throughout the 10 years, local government has been the supplier, and not the attractor, of human capacity to other spheres, including the private sector.

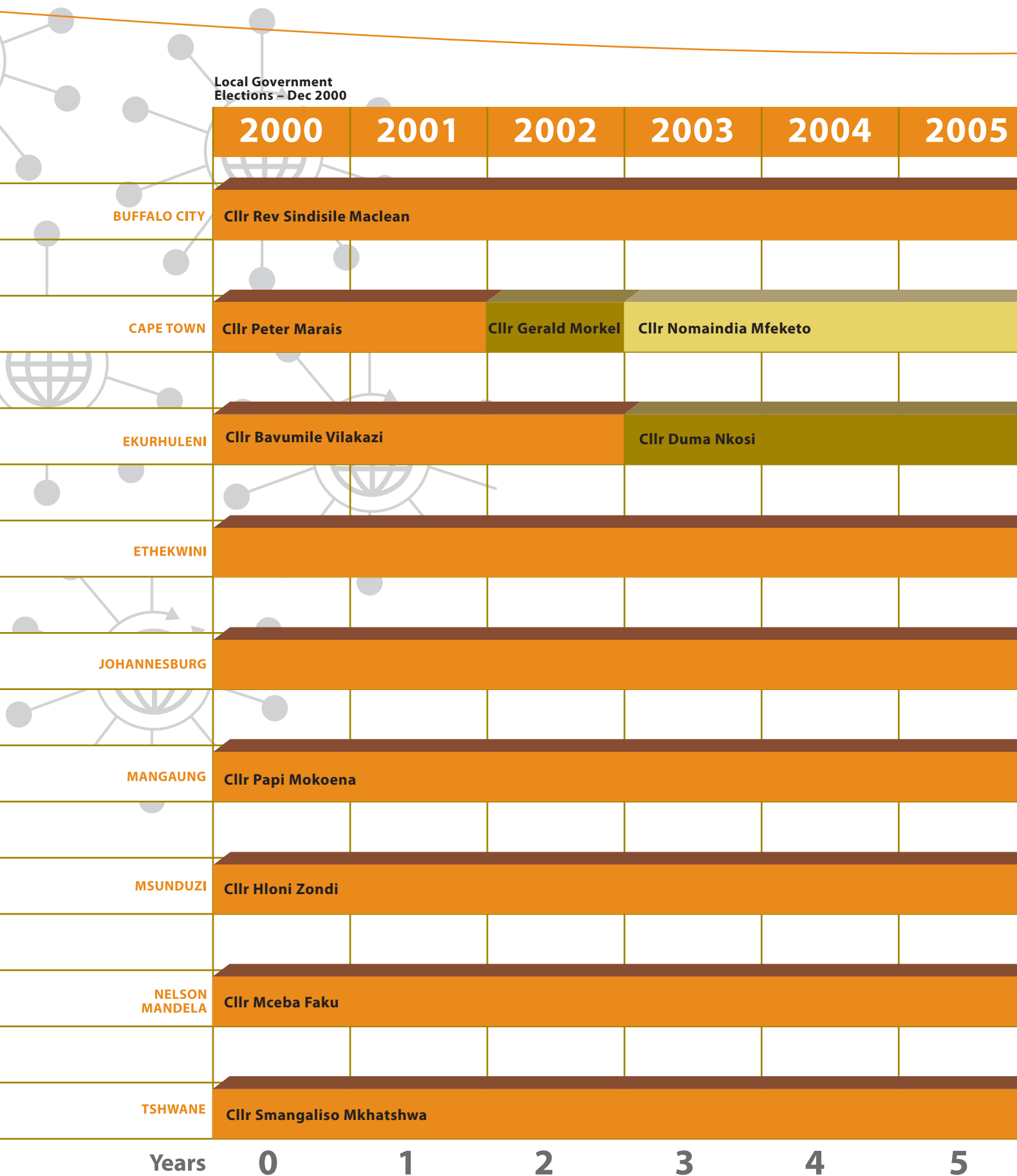
There are many issues to be confronted on a continual basis: problems of local government are problems for us all, in our communities and in the private and public sectors.

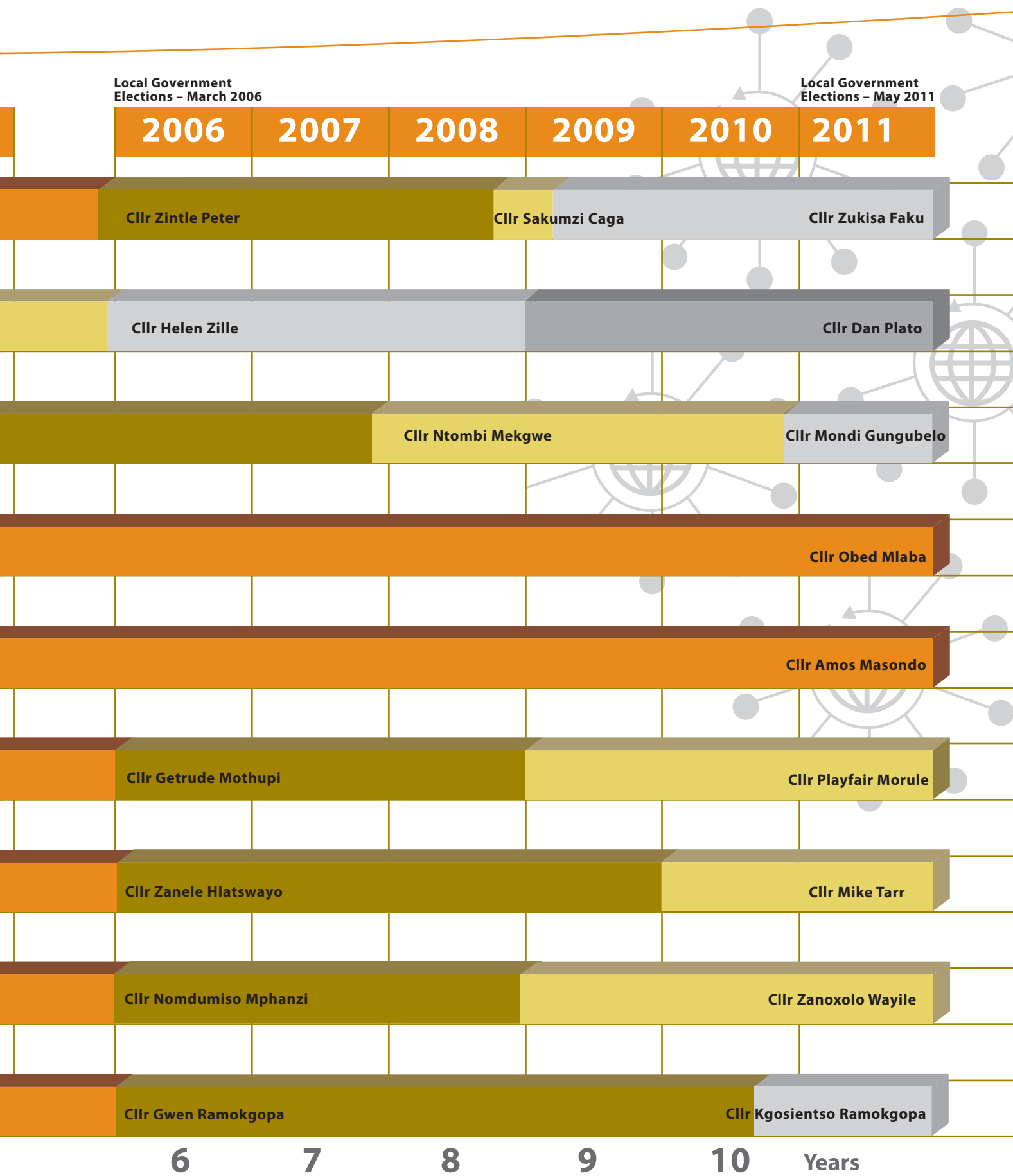
Therefore, much appreciation for the production of this report goes to all who have contributed to its content, administration and project management (the complete list of acknowledgements will be on the SACN website).

Sithole Mbanga

Chief Executive Officer

CITIES LEADERSHIP TIMELINE





Introduction



Introduction



THE PURPOSE OF THIS REPORT

South African cities are under the national and international spotlight again. Community protests over service delivery, disputes about councillor selection, mismanagement and underspending of municipal budgets, and recurrent billing problems have attracted growing public concern. Yet cities have also been fêted for rekindling a spirit of national unity during 2010, delivering world-class transport schemes and leading the economy out of recession. This is part of a bigger conundrum: that cities can be crucibles of enormous creativity and economic dynamism, and also sites of deep social divide, poverty and disadvantage. Looking ahead, cities are critical to the achievement of national environmental objectives, such as reducing greenhouse gas emissions and conserving resources, and city governments will need to raise their game if they are to tackle the complex challenges of economic transformation, social division and climate change.

The purpose of the State of the Cities Report 2011 is threefold. Firstly, the report assesses the progress made by South African cities over the last decade in relation to key development outcomes. The central question is whether developmental metropolitan government has had the desired effect in improving socio-economic and environmental conditions, both in absolute terms and relative to the rest of the country.

Secondly, the report reviews strategic problems and opportunities facing the cities. It is important to put key urban issues on the agendas of national and provincial government, the business sector, and civil society that may not previously have attracted the attention they deserve.

Thirdly, the report communicates essential messages about the planning, development and management of cities to a new generation of civic leaders and officials taking office after the 2011 municipal elections.

A DECADE OF CHANGE: 2000–2010

Much has changed since fully democratic, integrated metropolitan government was created a decade ago. A consolidation of complex, disparate municipal structures and systems took place throughout the country. Local government was given wider responsibility to promote social and economic development and to increase community participation in decision-making. A new intergovernmental fiscal system was introduced to devolve more resources to the local level and to equalise the provision of services within and between municipalities. A new cohort of political leaders and officials took over the management of many local councils.

Cities enjoyed a period of more robust growth and job creation than had been experienced in the previous two decades. The primary driver of growth was a consumer spending boom, partly funded by rising household debt. The strongest growth was seen in low-value household services, such as retail, telecoms, security and health, rather than in long-term investment to expand domestic production. This left the fundamental structure of the economy unchanged, with its concentrated pattern of ownership, its narrow base dominated by mining and financial services, and its skewed pattern of rewards marginalising the less skilled and black populations.



“Despite a higher rate of house building and accelerated basic service delivery, many councils battled to keep pace with urbanisation, intensifying competition for scarce resources and social tensions.”

Stronger growth exposed serious bottlenecks in urban infrastructure and shortfalls in electricity generation and distribution. Congestion on roads, rail networks, at ports and in pipelines worsened, and constraints on water supply loomed large in many cities. Improved urban employment prospects attracted domestic and international migration, adding to the pressure on impoverished townships and informal settlements. Despite a higher rate of house building and accelerated basic service delivery, many councils battled to keep pace with urbanisation, intensifying competition for scarce resources and social tensions. Deprived of investment for decades, public transport systems suffered more frequent breakdowns, cancellations and delays, which forced increasing numbers of commuters into using minibus taxis.

Around the middle of the decade, the prospect of hosting the 2010 FIFA World Cup™, along with wider political shifts within the ruling party and a relaxation of macro-economic orthodoxies, brought about a more expansive approach towards public investment in infrastructure. Major new transport initiatives were launched, including airport expansions, bus rapid transit systems, roadbuilding and the Gautrain. Most were completed to a high standard and on schedule. A shift in housing policy was announced, from eradicating to upgrading informal settlements, and from building free houses to a more holistic approach of creating sustainable communities. The Treasury launched a consolidated Municipal Infrastructure Grant to boost investment and created a Neighbourhood Development Partnership Grant to support township regeneration initiatives.

Towards the end of the decade, the upward economic trajectory went into reverse with the onset of the global crisis, causing over a million job losses across the country. Gauteng was the hardest hit, with manual jobs in manufacturing bearing the brunt of the collapse. Young people proved more vulnerable to the loss of jobs than other groups. An outbreak of xenophobic attacks in many cities, in response to perceived competition for jobs, shocked the nation. Outlying communities, frustrated by the apparent slow progress in delivering essential township infrastructure and services, took to the streets, and some of these demonstrations turned violent. Local councillors who were considered unresponsive or corrupt were often the target of hostilities, along with council buildings and other public facilities. Mounting complaints also focused on the enforced relocation of informal settlements, inadequate protection from flood damage and shack fires, overloaded sewage systems, and unenclosed toilets.

“City governments will need to raise their game if they are to tackle the complex challenges of economic transformation, social division and climate change.”

Introduction continued

These changes, in real world conditions and in policy and practice over the last decade, have been accompanied by shifts in the realm of ideas. The inclination to privatise public services at the beginning of the decade was replaced by the notion of a developmental state which envisages a leading role for the government in driving economic and social policy. Within this perspective, unresolved tensions remain, between a centralised model and a more multilevel approach that seeks to harness the power of government at every level. Another fashionable idea at the time – creating special purpose state agencies governed by commercial disciplines – retreated into the background, while interest in long-term planning and co-ordination moved forward with the creation of a National Planning Commission. This seeks to create a strategic framework to counter the tendency for state institutions to operate in silos with inconsistent mandates that are not well integrated.

CITIES AS DRIVERS OF DEVELOPMENT

In the broad field of development, there has been a sea change in international attitudes towards geography and place. Despite falling transport costs, the spread of new information and communications technologies, and the globalisation of trade and investment, there has been growing awareness that location and place are still very important for productivity, growth and development. The world economy is not flat; it is uneven or even spiky. The old view of cities as places dominated by distressed communities, declining industries and decaying physical structures has been turned on its head, with new emphasis on cities as sites of renewed economic dynamism, physical renaissance and places that can help to resolve many social and environmental challenges.¹

The upsurge of global interest has been led by the economic argument that cities are engines of growth. A new academic subdiscipline has emerged – New Economic Geography – building on the work of Nobel-prize winner Paul Krugman, to explain the importance of agglomeration, urban density and proximity to productivity and economic performance.² Key efficiencies emerge through the matching function of urban labour and property markets, and through the shared services and infrastructure of large cities. Drawing on different intellectual traditions, research by Ed Glaeser³ and Richard Florida⁴ has argued that concentrated economic activity has major advantages for creativity, learning and innovation. Cities are also said to contain the cultural diversity, social vitality and consumer amenities to help regions and nations attract the skills and talent required to generate and exploit knowledge and thereby build dynamic competitive advantage. This enables progressive improvements in the quality and productivity of tradable goods and services.

These ideas have had an important influence on organisations such as the United Nations, Organisation for Economic Co-operation and Development, European Commission and World Bank, as well as national governments and individual city authorities. Extensive rethinking has been followed by the adoption of new policies to promote the benefits of urbanisation, as a result of the advantages cities offer for economic and social development, and for more efficient public service delivery. The 2009 World Development Report has probably been the most prominent and substantial single contribution to this reappraisal of the significance of geography and place to growth and development. Although not without its critics, the report marshalled considerable evidence from around the world to make a strong case for the positive role of cities in economic development:⁵

Growing cities, mobile people, and vigorous trade have been the catalysts for progress in the developed world over the last two centuries. Now these forces are powering the developing world's most dynamic places.



The report singled out Africa for special attention, as ‘urbanisation, done right, can help development more in Africa than elsewhere.’⁶

However, these ideas have been slower to gain traction in South Africa and the rest of sub-Saharan Africa than in other places. With a sizeable proportion of the population still living in rural areas, and more intense poverty within these areas, a policy for rural development is widely believed to be at least as important as urban policy. Within South Africa, the apartheid legacy of forced population movement and deliberate underdevelopment in the former Bantustans also warrants special treatment for rural areas. Within the cities, the slum conditions prevailing in many expanding informal settlements have reinforced the view in some quarters that rural–urban migration should be discouraged because it is harmful and unmanageable.

Across the government as a whole, policy towards migration is deeply ambiguous, and no consistent national policy exists for planning and managing the process of urbanisation that is clearly happening.⁷ Instead, there is a wide range of separate spatial policies and programmes that reflect different concerns about uneven regional development and rural poverty. These have not been brought together within an overarching spatial development framework to provide a unifying vision and practical coherence. The New Growth Path⁸ is the latest example of a policy that appears ambiguous about cities and urbanisation. It devotes a fair amount of attention to rural problems and opportunities, but does not mention urban problems of unemployment, underemployment or joblessness. Despite the overriding objective to maximise national job creation irrespective of location, the policy does not discuss the significant contribution cities could make, nor does it consider the factors inhibiting their obvious potential.

Another theme that has moved rapidly up the agenda in recent years is climate change and environmental constraints.⁹ South African cities are already experiencing water stress and problems with power supply. There is growing recognition that the dominant energy sources are highly carbon intensive and that low density, car-based sprawl is unsustainable. Most cities and towns also face problems of air and water pollution, and solid waste disposal, while some have serious concerns about acid mine drainage. However, there is a growing body of evidence that cities can help to address the developmental challenges facing South Africa. Along with threats of global warming and resource constraints, an equally compelling set of opportunities arises from the concentration of people, industries and infrastructure in cities, which could help to develop ways to reduce greenhouse gas emissions and waste, devise alternative energy sources and promote greater resource efficiencies. Local action at city level involving municipal governments and other stakeholders is vital to realise national and international climate change commitments. As with concerns about the economy and poverty, cities are an essential part of the solution.

A RESILIENCE PERSPECTIVE

The concept of resilience provides a useful way of drawing together and linking many of these concerns. It is not used as a straitjacket that constrains or crowds out other useful concepts and analytical tools. Rather, the concept provides an overarching perspective in the report with a thread running through the different sections to help connect the elements of analysis and provide overall coherence.

“The old view of cities as places dominated by distressed communities, declining industries and decaying physical structures has been turned on its head.”

Resilience is an accessible term with a commonsense, positive meaning for most people. It is defined here as the capacity of a place to anticipate, respond and adapt successfully to challenging conditions, such as global recession, environmental threats or pressures of population growth. It is a broad notion enabling analysis across disciplinary divides to improve understanding of how cities accommodate multiple, interacting sources of social, economic and physical change, and position themselves for the future. Resilience also captures the reality of being connected to an increasingly uncertain and volatile world, for example, through trade, migration and foreign investment. External exposure heightens the risks and insecurities for citizens, which need to be communicated and actively managed.

The concept of resilience implies something locally specific and unique – the intrinsic characteristics of a place – and how this systemic quality relates to wider circumstances. Places are likely to vary in their resilience depending on their people, institutions and physical attributes. The concept offers fresh thinking and new ideas to encourage the questioning of assumptions and making new connections. It challenges conventional wisdoms and prompts analysts and activists to think differently about cities, and particularly about the processes of change within them. The theme raises novel questions for urban research and introduces different ways of exploring important societal concerns. It also has a normative, policy aspect in implying a desirable, dynamic quality for cities to be able to steer a way forward in the face of adversity or shifting social and political norms. Change is necessary to avoid being locked into inefficient urban structures, outmoded environmental technologies, obsolete industries, conflicting social patterns and inflexible institutions. Elaboration of the concept can help to identify how smart, progressive change is achieved and what is required to bring it about – the local factors and strategies that shape long-term development trajectories of cities in ways that are more sustainable, inclusive and productive.

THE RESILIENCE OF CITIES

There are two different ways of interpreting and defining urban resilience. The first, which is somewhat narrower than the second, refers to the capacity of a city to withstand and recover from an external shock, such as an economic downturn or climatic disaster.¹⁰ It implies coping with or ameliorating the effects of the problem and restoring the position that existed beforehand. This definition provides little sense of development or progression to a more secure or favourable situation – economically, socially or environmentally. An example might be how the built environment is sometimes adapted to rising crime. Investment in gated communities and access-controlled business parks may alleviate the fears of a few, but at the expense of many. This kind of adaptation is a defensive coping mechanism focused on symptoms. It may not be a reliable basis for urban planning and management into the future because it does not tackle the root causes of the problem.

The second definition of urban resilience is broader and more dynamic, and refers to the capacity of a city to chart a different pathway in challenging conditions.¹¹ It involves adapting and shaping the development trajectory in order to improve the city's position in some deeper, structural respect. This is a more active concept and may imply transforming local conditions for the better, based on experimentation, creativity and innovation. The process of adaptation is of interest, as is a successful outcome; and the timescale is medium rather than short term.

Both definitions are relevant to the report, although the second offers greater promise for analysis and policy purposes because of its dynamic and longer-term perspective.

The concept of urban resilience is further refined and elaborated in more concrete directions. It is important not to overstretch the notion and dilute its definition to the point where it loses its usefulness in seeming to mean almost anything and everything. However, the following four aspects are particularly important in the report.

“Resilience captures the reality of being connected to an increasingly uncertain and volatile world.”

Economic

The economic aspect of urban resilience is about the ability of city economies to adjust to difficult economic circumstances and emerge from the transition in a more advantageous position. This may involve adapting existing skill sets, technology, knowledge and fixed assets to new opportunities. This aspect explores whether local economic agents are sufficiently versatile and resourceful to adjust to altered conditions. It is also concerned with whether a city's economy is shifting from its inherited narrow base and concentrated ownership pattern to a more equitable and labour-absorbing growth path, which is particularly relevant to South African cities. It considers whether the informal economy is being strengthened and becoming more productive over time, and whether it is able to fill in some of the gaps in the formal economy and improve the livelihoods of those on the margins.

Environmental

The environmental aspect of urban resilience refers to the ability of the physical systems of cities to withstand environmental changes and hazards, such as global warming, flooding and water scarcity. Some people and places are invariably more vulnerable than others, reflecting attributes such as their financial resources. This aspect also concerns whether investment in the built environment and infrastructure is avoiding path dependence and facilitating new development pathways based on more efficient resource use and low carbon technologies. It explores whether the reliance on motor vehicles is being reduced and higher density, mixed-use development is being encouraged.

Social

The social aspect of urban resilience is partly about whether disadvantaged groups remain marginalised from opportunities and reflects on the level of inclusivity or exclusivity of the urban system. It also refers to the ability of urban communities to tolerate and assimilate migrant populations from rural areas and other countries without conflict. This has a bearing on the capacity of diverse communities to interact and build trusting relationships that realise the creative potential of cultural diversity in cosmopolitan places.

Governance and institutions

The aspect of resilience in governance and institutions concerns the capabilities of city-level institutions to anticipate and adapt over time to shifting conditions through learning and innovation. It is partly about the quality of leadership and the strategic powers and resources of local governance structures, as well as their level of astuteness in terms of their judgement of the situation, future threats and their appropriate response. This aspect considers whether they are able to stand up to other tiers of government and pressure from vested interests, and the extent and strength of their internal and external networks and relationships with other organisations. It also concerns their financial viability and ability to invest for the future.



RESILIENCE AND SOUTH AFRICA

Resilience is particularly relevant to the profound transition taking place in South Africa. Questions are raised about the nature and pace of spatial, social and economic transformation, and about the durability of these changes. Are South African cities tied into a narrow, exclusionary and unsustainable growth path at the risk of future disorder or disaster? Are they reducing their dependence on private transport, non-renewable energy sources and low density, highway-oriented development? Is any progress being made in relation to the structural causes of unemployment, poverty and inequality, including spatial segregation?

The relationship between spheres of government is pivotal in building a dynamic developmental state in South Africa. Political resilience implies places governed by institutions with the autonomy, resources and leadership to help their constituent interests to respond positively to change, and to take the initiative in promoting transformation. Cities need the strategic capabilities to plan the route ahead in an unpredictable environment, and to protect less-skilled and more vulnerable communities from the risks to which they are exposed. National government also has an essential, supportive role to play (such as through targeted investment and transfer payments) in safeguarding vulnerable places from economic instability, volatile food or energy prices, environmental hazards and social conflicts. This is especially so in an increasingly open and interconnected world.

THE STRUCTURE OF THE REPORT

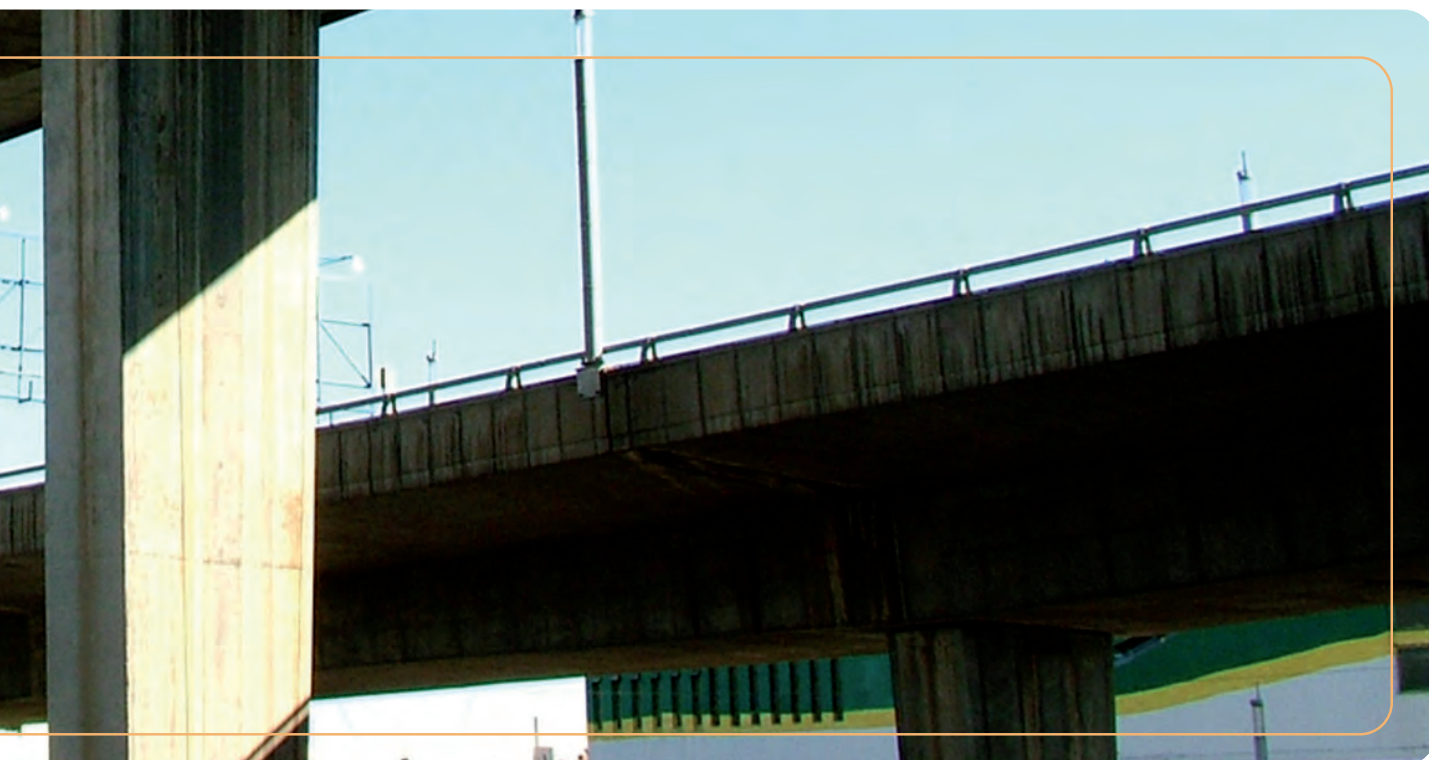
Chapter 2 considers the economic performance of cities as the foundation for household incomes, community well-being and viable public services. Chapter 3 examines the state of the built environment. This includes housing, transport and community infrastructure, which is crucial to social interaction, economic productivity and the ecological footprint of cities. Chapter 4 assesses the efficiency with which environmental resources are used, including the production and consumption of energy, fuel, water and waste. Chapter 5 looks at the performance of city governments, focusing on community satisfaction, trust and participation. Chapter 6 reviews the financing of municipal government, including shifts in patterns of expenditure and revenues. The final chapter distils key findings of the report and identifies messages for the future.





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"Strong city economies provide jobs and incomes to raise the living standards of citizens and to improve the stability and cohesion of communities. They boost the tax base to fund better public services and generate the resources to support household remittances and state transfers to poorer regions. Strong city economies also promote productivity growth and innovation, partly because they contain the shared services, infrastructure, institutions and social amenities to attract investment, enterprises and skills."

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The Economy of Cities



The Economy of Cities



The success of cities is crucial to national economic development and social well-being, which is why they are often described as engines of growth.¹ Strong city economies provide jobs and incomes to raise the living standards of citizens and to improve the stability and cohesion of communities. They boost the tax base to fund better public services and generate the resources to support household remittances and state transfers to poorer regions. Strong city economies also promote productivity growth and innovation, partly because they contain the shared services, infrastructure, institutions and social amenities to attract investment, enterprises and skills.

Resilience refers to the ability of city economies to recover from an external shock, such as recession or rising energy prices. Resilience is central to sustained economic performance of cities. Larger, more diverse city economies tend to be more resilient and less vulnerable than smaller, more specialised local economies. Resilience also refers to the capacity of city economies, and their associated infrastructure and institutions, to adapt successfully over time to changing conditions. This requires innovation, creativity and long-term commitment on the part of investors to avoid being locked into obsolete industries and technologies. Applying a resilience perspective helps to identify how local strategies can minimise the risks of stagnation and actively shape the long-term development of cities in more productive, inclusive and sustainable ways.

The chapter examines the extent and nature of economic changes since the creation of metropolitan government a decade ago. After examining the economic outcomes based on output, exports, imports, productivity and employment, the underlying drivers that influence these outcomes, namely innovation, skills, investment, specialisation and connectivity are discussed. The chapter assesses whether South African city economies have outperformed the rest of the country, and whether growth has helped to absorb unemployment. It also considers whether cities have been more or less resilient than other places to the recent recession.

The analysis is carried out at the scale of the nine largest municipalities in the country. Three main sources of data are used: the Quarterly Labour Force Survey (QLFS), the General Household Survey (GHS) and the Quantec Regional Database. The two government surveys (QLFS and GHS) are the most reliable sources of up-to-date statistics. They both involve face-to-face surveys of a stratified random sample of approximately 30 000 households. Consistent data is available, from 2002 to 2009 for the GHS and from 2002 to 2010 for the QLFS, to compare conditions in different areas. In some of the analysis, the sampling method and restricted size of the surveys means that cities have to be combined into groups, such as the Gauteng metros (Johannesburg, Tshwane and Ekurhuleni) and the secondary cities (Mangaung, Buffalo City and Msunduzi).

The analytical framework used in the chapter lends coherence to the data analysis. It recognises that cities are complex economic systems made up of multiple agents and institutions that interact through the exchange of goods, services, money, labour, technology and information. Cities evolve over time in response to internal dynamics (such as local competition and learning) and external forces and events (such as expanding or contracting global markets, the availability of credit and foreign direct investment). Complicated feedback loops make it difficult to disentangle the causes and effects of change. History exerts a strong influence on cities' sectoral structure, ownership patterns, and the size composition of enterprises. In other words, their development trajectories tend to be 'path dependent', which has a strong bearing on the extent to which growth is a shared and inclusive process.



“Strong city economies provide jobs and incomes to raise the living standards of citizens and to improve the stability and cohesion of communities.”

Analytical framework: The productive city

The framework draws on ideas from contemporary spatial economics, including the themes of competitiveness and resilience, to explore the drivers of productive success for cities. It identifies the ways in which cities continually upgrade and extend their business environments to support firms that can withstand external competition and grow successfully to create jobs and raise incomes. The framework outlines a series of high-level, city-wide core indicators that measure essential economic outcomes related to sustained growth and development. These include productivity, employment and external trade. It also identifies a series of supporting indicators that measure the underlying determinants of economic change in cities, help to limit the risks of economic failure and provide the capabilities for effective adaptation. These include technology and innovation, industrial structure, business ownership and management, skills and capacity, and connectivity.

The competitive performance of a city can be defined as its ability to attract, retain and develop firms with a stable or rising share of wider markets while increasing the employment rate and living standards of local residents. City competitiveness cannot be measured directly, but only indirectly through its economic outcomes, such as growth in GDP per person (average incomes), or through the local capabilities or assets that underpin successful economic performance and limit vulnerability, such as the quality of skills, infrastructure or innovation. Figure 2.1 presents a simple framework to capture the various elements of urban competitiveness and their interrelationships.

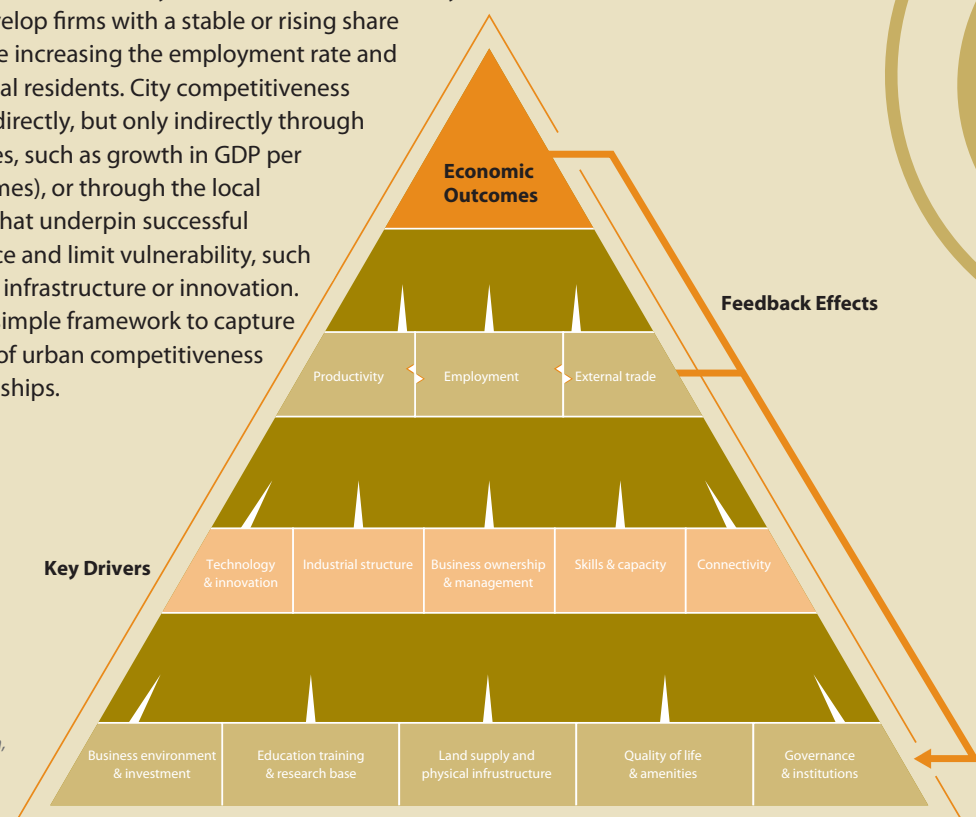


Figure 2.1 Urban competitiveness framework

Source: Derived from Parkinson, M et al.²

The framework recognises several economic advantages associated with city size.

- A large labour pool gives firms more flexibility to match their workforce with their changing business needs and gives workers more choice of employer and greater opportunities for career progression. A better match between employers and job-seekers reduces labour turnover and raises productivity.
- Large cities tend to give firms better physical and electronic connectivity to external markets, suppliers and collaborators because of the scale economies in infrastructure provision.
- Firms also benefit from a greater choice of local suppliers and service providers, including training organisations, financiers, marketing agencies and research centres.
- Firms can learn more from other firms and associated institutions where there is greater scope for sharing information. Geographical proximity and the density of economic agents enhance knowledge spillovers and networks.
- The scale, and diversity, of metropolitan economies facilitates dynamic adjustment to shifting technologies, markets and products without painful structural decline. This is important in a context of accelerating economic change and globalisation. Difficulties in predicting future patterns of trade and competition mean that flexibility to allow local economies to evolve and creativity to exploit new opportunities are important. A bigger pool of professionals, managers and technical staff enables more permutations of skills to be assembled and greater interaction among different economic functions.

Large cities can also have disadvantages. Increased demand for space and services can mean higher business costs, including property rents and labour costs. There may also be more congestion and excessive pressure on electricity supply and natural resources, such as water and air quality. Successful cities may attract high levels of in-migration, adding to competition for housing and public services. Overcrowded and unhealthy living conditions may be created if the supply of housing cannot keep pace, which can foster social tension and disorder. Therefore, careful urban planning and management are vital to facilitate the advantages and to minimise the disadvantages of agglomeration.

ECONOMIC OUTCOMES – CONDITIONS AND TRENDS

The essential outcomes of economic development are the levels of economic output, trade (exports and imports), productivity and employment. These outcomes help to shape city prosperity and welfare.

Economic output

Gross Value Added (GVA)³ is an important measure of economic activity (or net economic output) at local or regional level. It can indicate the state of the local economy, including its size, rate of growth and average incomes, which makes useful comparison between different areas possible. GVA is also available for individual sectors and can be used to show the industrial composition of different areas.

Figure 2.2 shows the contribution of different regions to South Africa's total economic output for 2009.

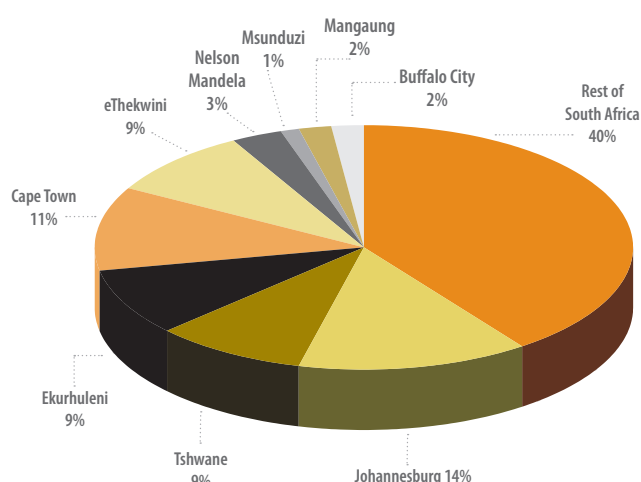


Figure 2.2 Share of total GVA in South Africa, 2009

Source: Quantec Regional Database⁴

The degree of geographical concentration of economic activity in the country is striking, as the nine SACN cities dominate the national economy, accounting for three-fifths (60%) of total output. The five largest metros (Johannesburg, Tshwane, Ekurhuleni, Cape Town, eThekweni) account for just over half (52%) of the national economy, while the three Gauteng metros together account for almost one third (32%) of national output.

Figure 2.3 shows the average rate of GVA growth of the nine SACN cities and the country as a whole from 2004–2009.

The level of spatial concentration of economic activity increased over the period. Five of the nine SACN cities outpaced the growth of the national economy. The two fastest-growing cities were in Gauteng, where the economies of Johannesburg and Tshwane grew over 1% per year faster than the national economy. Johannesburg had both the largest and the fastest growing economy in the country, while Nelson Mandela Bay was the only city economy to have performed poorly.

Figure 2.4 shows the GVA per person for 2009. GVA per person (or head of population) is a measure of average income in an area, and reflects the level of productivity and the employment rate.

The average incomes in all the metros are higher than in the country as a whole, suggesting that their economies are more productive than other parts of the country. The five largest of the nine SACN metros have higher average incomes than the rest, suggesting that size matters to economic performance. The two dominant Gauteng metros (Johannesburg and Tshwane) enjoy the highest average incomes, at nearly 70% higher than the national average.

Exports and imports

The level of trade between a city and other places is another indicator of its competitive position. Although data is not available for internal trade between cities and other places within the country, it is available for exports and imports to and from other countries. This is a potentially useful indicator of a city's international competitive position.

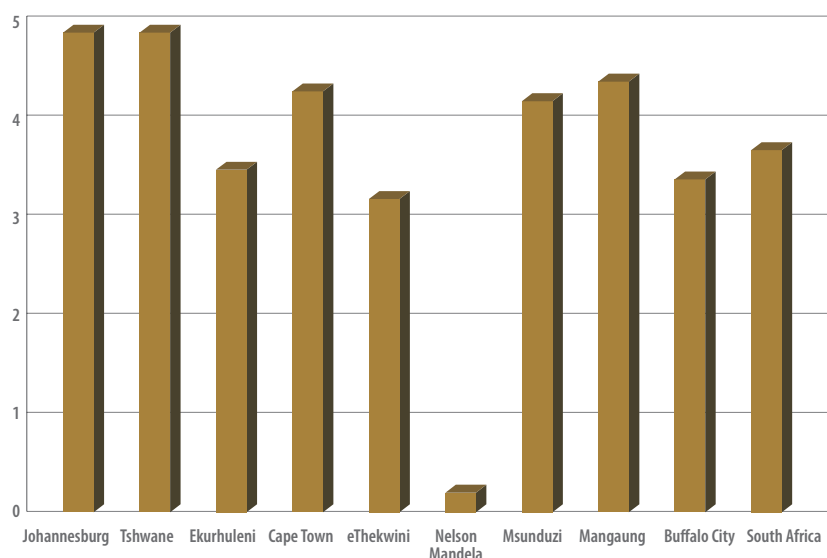


Figure 2.3 Average GVA growth rate, 2004–2009 (%)

Source: Quantec Regional Database⁵

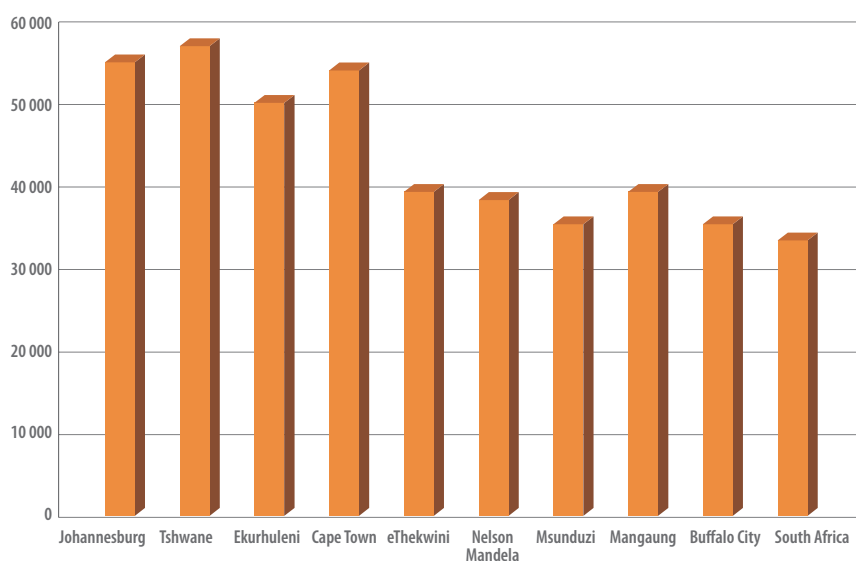


Figure 2.4 GVA per person, 2009 (Rands)

Source: Quantec Regional Database⁶



The Economy of Cities continued

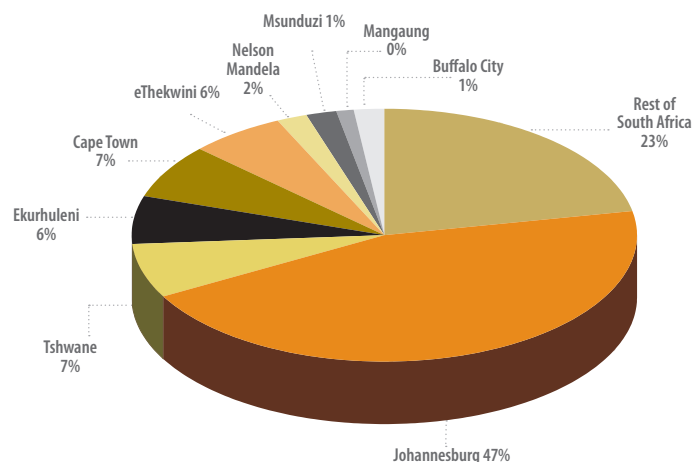


Figure 2.5 Share of total exports from South Africa, 2009

Source: Quantec Regional Database⁷

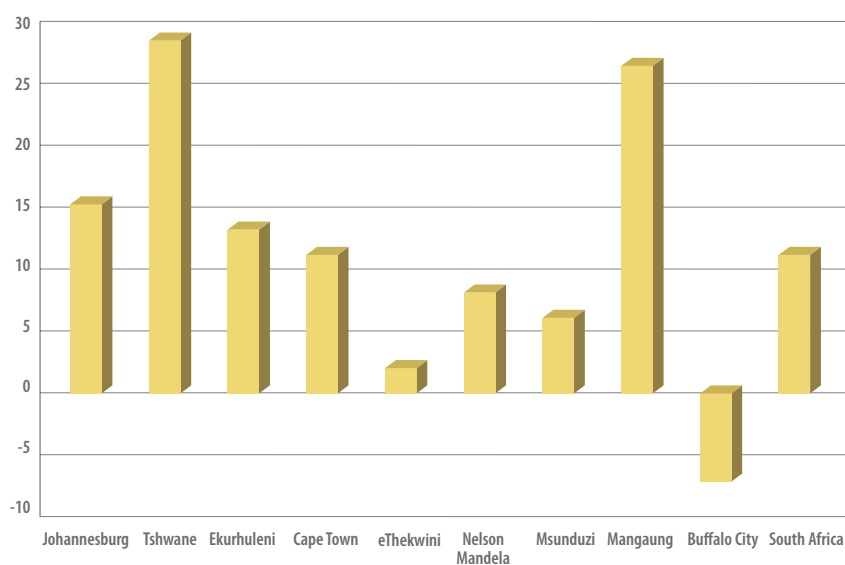


Figure 2.6 Average export growth rate, 2004–2009 (%)

Source: Quantec Regional Database⁸

“Four of the five largest SACN metros have higher average productivity than the country as a whole (22% higher on average).”

Figure 2.5 shows the share of total exports from South Africa for 2009.

The figure suggests that cities are the dominant source of exports for the country, accounting for 77% of the national total. Johannesburg appears to have been the most important source of exports by far, with nearly half of South Africa's total. The export contribution of the other cities is broadly in line with their share of economic output. However, it should be noted that export statistics may be recorded at the corporate head office rather than at the original establishment where the products, materials or services were produced. This may exaggerate the importance of the head office locations at the expense of other sites within the corporation. For example, Johannesburg's biggest export commodities are precious stones and metals, followed by mineral products, which reflects that many mining houses have their headquarters in the city. Further, the data does not show the role of international gateways or ports through which exports pass, such as eThekweni.

Trends in export performance provide an indication of a city's changing competitive position. Figure 2.6 shows the average export growth rate from 2004–2009.

The figure suggests there is some relationship between city size and export growth. The three Gauteng metros all exceeded the growth rate of national exports. Tshwane and Mangaung showed the strongest growth, albeit starting from a low base. Tshwane's biggest export commodities were minerals and base metals, suggesting an issue of head office reporting, and Mangaung's biggest exports were chemicals and vehicles. Johannesburg showed relatively strong export growth compared with the rest of the country,

but from a large base. Export growth from eThekweni was surprisingly weak considering the significance of manufacturing in the city. Buffalo City was unusual in experiencing a fall in exports, which are dominated by motor vehicles – an export sector that has been volatile over the last decade.

Trends in import performance are less directly connected to a city's changing competitive position, as they may reflect strong local economic growth, by drawing in additional materials and components from abroad. Figure 2.7 shows the average import growth rate from 2004–2009.

The figure suggests no particular relationship between city size and import growth, although the strong rates of import growth in Johannesburg and Cape Town are notable. Johannesburg's biggest imports are machinery, electrical and electronic equipment, and mineral products (such as oil). Cape Town's biggest imports are mineral products.

Productivity

Productivity is a crucial determinant of long-term economic performance and average incomes. It reflects the value of goods and services, and the efficiency with which they are produced. GVA per employee is a measure of average labour productivity in an area. Figure 2.8 shows the labour productivity for 2009.

Four of the five largest SACN metros have higher average productivity than the country as a whole (22% higher on average), and higher productivity than the four smallest SACN cities (28% higher on average). This is a significant differential and clearly supports the argument that size matters to productivity.

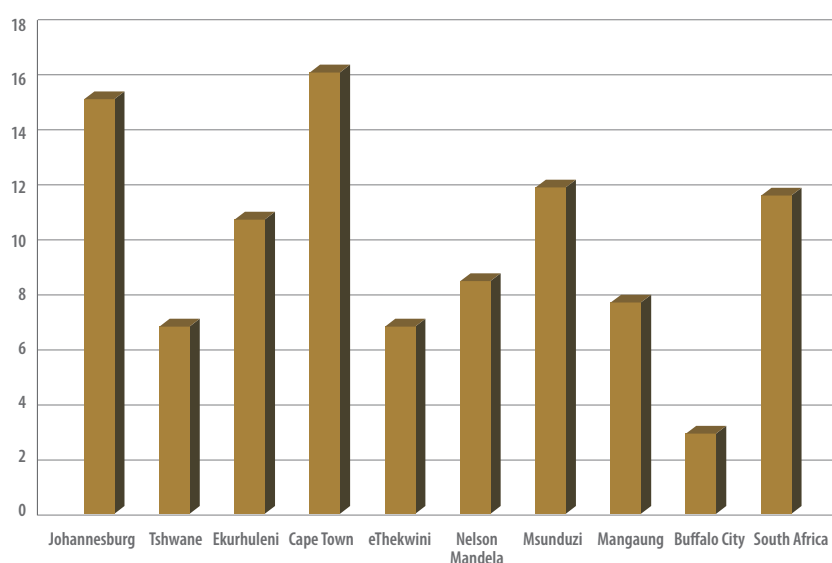


Figure 2.7 Average import growth rate, 2004–2009 (%)

Source: Quantec Regional Database⁹

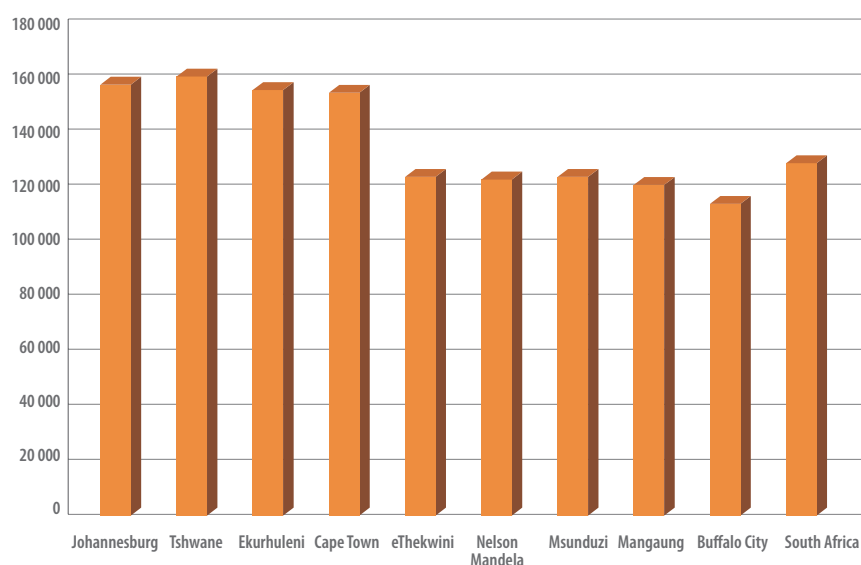


Figure 2.8 Labour productivity, 2009 (GVA/employment, Rands)

Source: Quantec Regional Database¹⁰

“The employment rate in the metros has increased despite sizeable in-migration of job-seekers from elsewhere, who have added to the supply of labour.”

The Economy of Cities continued

Employment

The availability of employment is a key indicator of the state of the local economy, including the level of prosperity or the degree of poverty. The lack of paid work forces households to rely on transfers from other family members (remittances), or from the state in the form of pensions or other social grants. An indication of the state of the local economy is the proportion of households whose main source of income is derived from employment, compared with those that depend on social grants and remittances. Figure 2.9 shows this breakdown for different regions in 2002 and 2009.

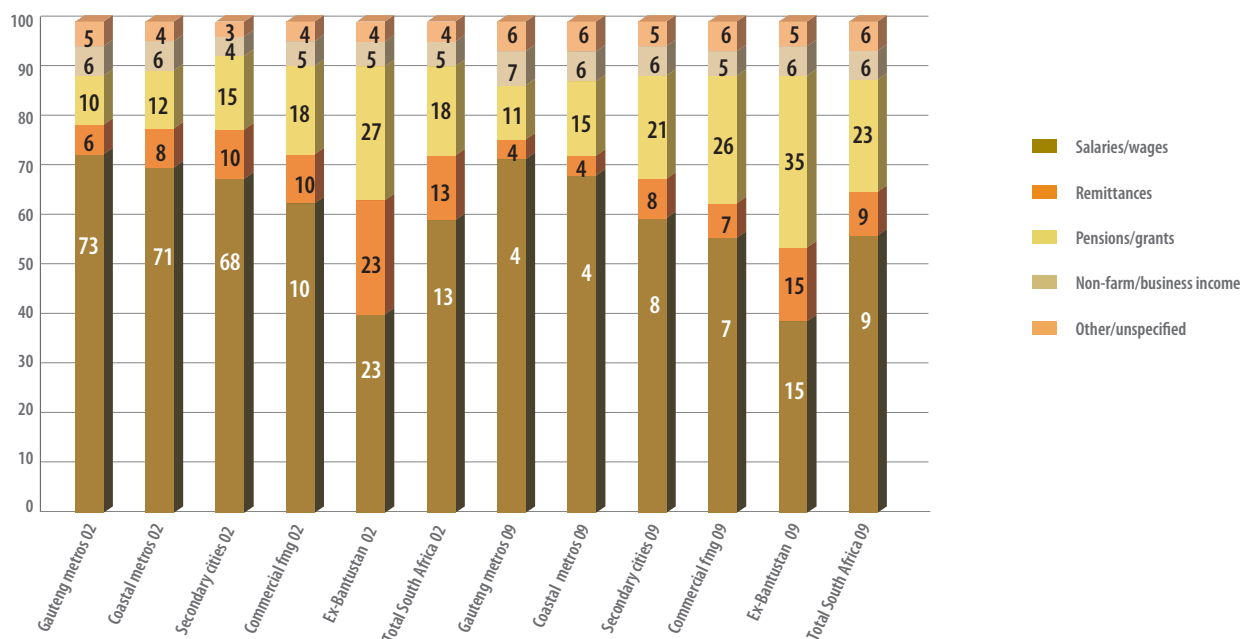


Figure 2.9 Main source of household income, 2002 and 2009¹¹ (%)

Source: Stats SA, 2002¹² and 2009¹³

Overall in South Africa, the proportion of households dependent on remittances declined from 13% to 9% between 2002 and 2009, and the proportion reliant on salaries/wages from work fell slightly from 59% to 57%. This was compensated for by the increasing importance of social grants – from 18% to 23% of households, which means that the state became the main source of income for 5% more households (one in 20) in 2009 than in 2002. While this has helped to reduce absolute poverty and compensate for the inability of the labour market to create enough jobs for the expanding workforce, it would be healthier and more sustainable if reliance on employment, not social grants, was growing.

The effect of social grants was greatest in the rural areas. The state became the main source of income for more than a third of households in the former Bantustans in 2009, up from just over a quarter in 2002. It grew in importance mainly at the expense of remittances – either compensating households for shrinking transfers from relatives or reducing the pressure on relatives to remit funds home. In the commercial farming areas, social grants became more important mainly at the expense of income from employment, which declined from 63% to 56% of households. Overall, the rural areas seem to have been the main beneficiaries of the government's expansion of social grants over the last decade.

The level of employment was more stable in the metros, especially in Gauteng. In 2009 as many as 70% of households in the metros derived their main source of income from employment, compared with 13% from social grants and only 4% from remittances. The metro economies are clearly more self-sufficient and resilient than the rural economies, which rely heavily on public and private transfers from elsewhere. The economic gap between cities and rural areas also seems to have widened over the last decade.

The improvement in the labour market position of the metros compared with the rural areas is most apparent when the proportion of the working age population (WAP) in employment is analysed. The WAP is defined here as workers who fall within the age range of 15 to 64 years. Figure 2.10 shows the percentage of WAP employed in 2002 and 2009.

In 2009 between 53% and 56% of the WAP in the major metros were in employment, compared with only 29% in the former Bantustans and 47% in the commercial farming areas. This striking disparity could explain the strong rural–urban

migration flows. Furthermore, the gap has widened over the last decade, with the employment rate growing strongly in the major metros, but standing still in the former Bantustans. Interestingly, the employment rate in the metros has increased despite sizeable in-migration of job-seekers from elsewhere, who have added to the supply of labour. Among the metros, eThekweni experienced the biggest improvement in the employment rate between 2002 and 2009, followed by Gauteng. However, by international standards, levels of employment in South African cities are still low.¹⁶

In comparison, Figure 2.10 is more positive than Figure 2.9, as it shows that employment has generally increased. One explanation for the discrepancy in employment and income trends may be that many of the jobs created were not well paid. In addition, many of those obtaining jobs may be partners of people already in work, so that more people in work may not translate into more households gaining their main source of income from employment.

These labour market differences are confirmed by information on the type of employment available from the QFLS 2010. Figure 2.11 reflects the breakdown of the broad sectors of employment, namely the formal, informal and private household sectors.

Roughly four-fifths of workers in the metros are engaged in formal employment, compared with only 55% in the former Bantustans. One in three workers in the former Bantustans are in the informal economy, nearly three times as many as in the metros. This suggests that the informal economy is second best to the formal economy and chosen because of the lack of an alternative. Work in private households (domestic workers) does not vary nearly as much across the country.

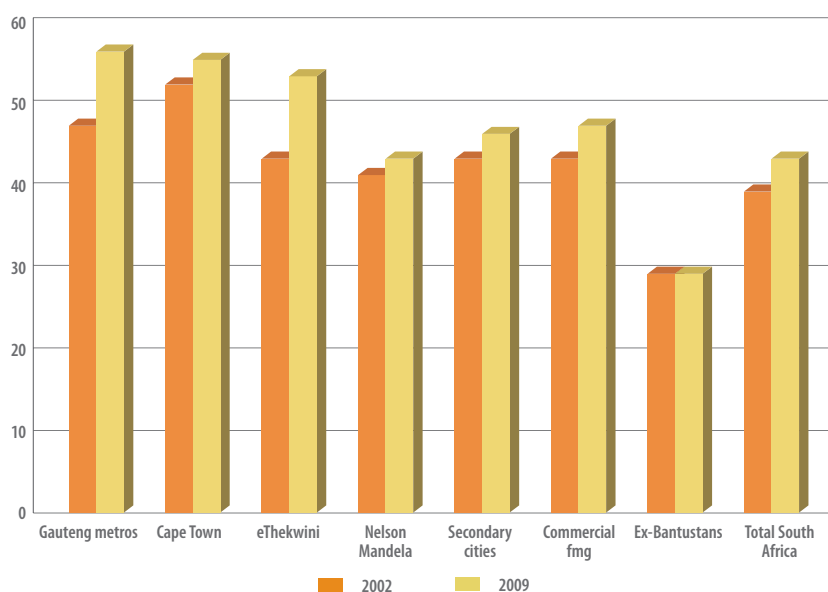


Figure 2.10 Percentage of employed 15–64 year olds, 2002 and 2009

Source: Stats SA, 2002¹⁴ and 2009¹⁵

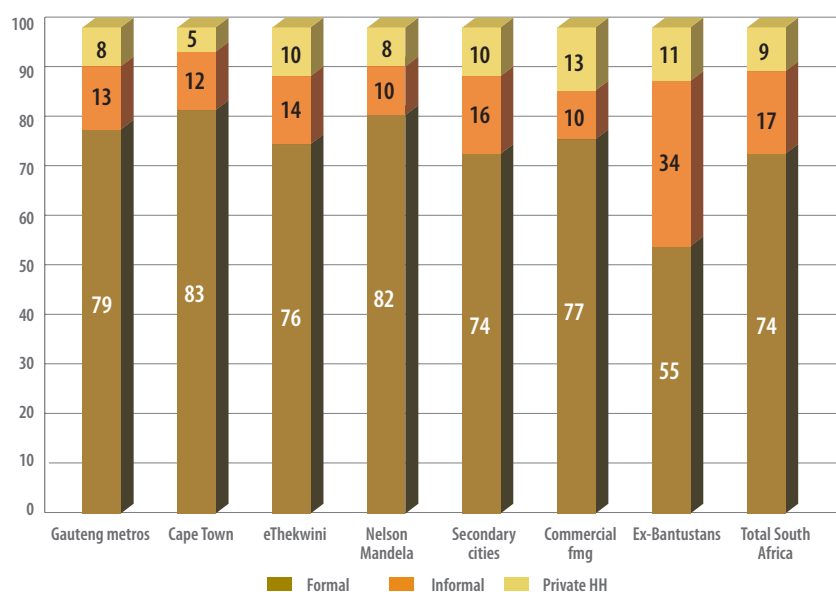


Figure 2.11 Broad sectors of employment, 2010 (%)

Source: Stats SA 2010¹⁷

The informal economy

The informal economy comprises self-employment and more organised enterprises that are not directly taxed or regulated. There are different schools of thought about its role and character in South African cities, and about its economic value and potential. Evidence suggests that South Africa's informal economy is smaller than in many other cities in developing countries, particularly in Asia and the rest of Africa. Many elements of the informal economy are not considered to be productive or decent work because employment conditions are generally poor and incomes are low. These are typically flexible, labour-intensive operations with simple organisational and production structures and low levels of investment and technology, often concerned with replacing or filling gaps in the formal economy and with household survival. For example, informal retail enterprises provide goods that are unavailable in the formal sector (such as traditional medicines), in smaller quantities, or in locations where formal outlets are sparse (such as informal settlements). The minibus taxi sector is one of the largest and most visible forms of informality, employing approximately 180 000 people directly and 400 000 indirectly. Its growth is attributable to the dispersed form of South African cities, low levels of car ownership and the inadequacy of the public transport system.

The informal sector is best understood through its relationships with other parts of the economy and the state, rather than in isolation. Both the economy and the state can constrain the growth of informal enterprises, for example by squeezing them out through cost-cutting or by physically excluding traders from natural market places. The informal economy may add to the resilience of cities by providing livelihoods for people who cannot secure positions in the formal economy, and by meeting unmet needs for particular goods and services. Policymakers need to understand that the sector is here to stay for the foreseeable future because of the persistence of high unemployment. In the words of a recent Organisation for Economic Co-operation and Development report, 'the informal is normal, rather than exceptional. Growth has not reduced the proportion of people working informally'.¹⁸ Many elements also warrant support both to improve the level of social protection for those involved and to increase their productivity. Policies should not assume that informal activity will automatically develop into formal activity over time. The public sector can perform three functions to improve informal livelihoods. These are:

- to protect well-located public spaces with high footfall for informal enterprises to trade;
- to provide basic public services such as water, electricity, education and affordable public transport to improve productivity; and
- to use public procurement powers to enable enterprises to compete for municipal contracts ranging from school catering to tree planting and environmental improvement.



Earnings also tend to be higher in the metros than in rural areas, suggesting that their economies are more productive. Figure 2.12 shows the proportion of employed people (formal and informal) earning under R1,000 a month in 2002 and 2009.

The proportion of workers earning under R1,000 was almost three times higher (26%) in non-metro areas than in the metros (9%) in 2009. Cape Town and eThekweni had the least number of people earning very low incomes, while the former Bantustans had the most. One qualification to add is that the cost of living is higher in cities because of housing and service costs, so a given level of income goes further in rural areas.

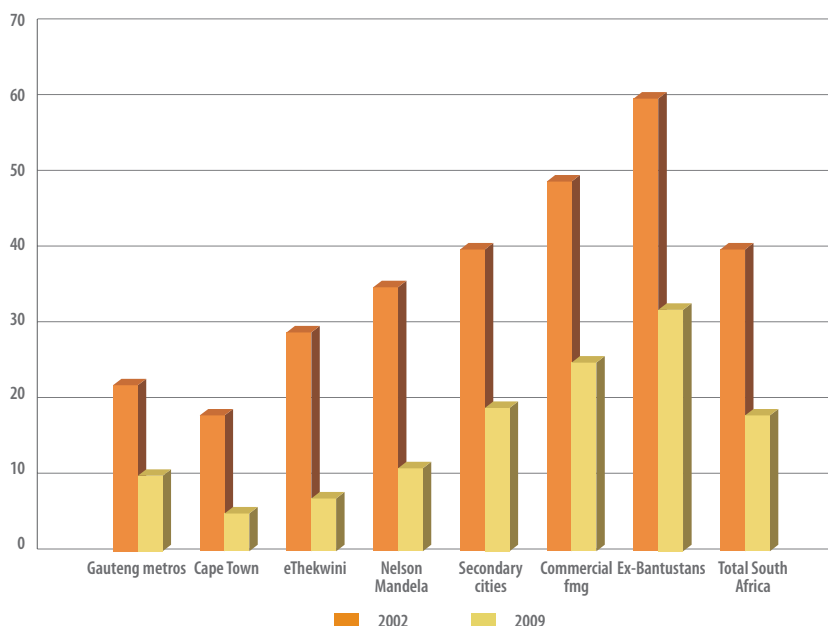


Figure 2.12 Percentage employed earning less than R1,000 per month, 2002 and 2009

Source: Stats SA, 2002¹⁹ and 2009²⁰

The changes between 2002 and 2009 are also notable. The proportion of workers earning under R1,000 a month fell sharply everywhere, mainly because of wage inflation. However, the increase in the cost of living did not mean that people were better off. There appears to have been a bigger reduction in the proportion of workers earning under R1,000 in metros than in rural areas: the proportion in the metros fell by nearly two-thirds (from 24% to 9%), while the proportion elsewhere fell by just over half (from 54% to 26%). The incidence of low earnings in rural areas may be another driver of rural-urban migration.

Youth employment

Only one in eight people aged 15–24 has a job in South Africa, compared with more than four times the proportion of adults (54%).²¹ Young people experience far higher rates of unemployment than adults, partly because they have less work experience. Employers find it hard to judge the real capabilities and potential of school leavers on the basis of their academic qualifications alone. They tend to look for practical skills and experience above all. Employers regard young people as relatively high-risk recruits and prefer adults with a track record of work. Consequently, youth risk long-term detachment if they are not integrated into the world of work after leaving school. A lost generation represents a wasted resource, a social hazard and a burden on the state to provide social assistance. Young people are also more likely than adults to be among the working poor in informal jobs. Being forced into precarious livelihoods by intense poverty and a lack of social protection is a lost opportunity, since they might otherwise have attended school or college and acquired skills and competences that could raise their future productivity and earnings.

The Economy of Cities continued

The recession

Approximately one million jobs were lost to the South African economy between late 2008 and early 2010. Little, if any, analysis of the impact of these job losses across the country has been done. In particular, no research has been conducted on the severity of this impact on the major cities in relation to the rest of the country. The severity of impact is a key aspect of economic resilience.

Figure 2.13 compares the employment status of the WAP of different areas between the peak of the economic cycle in the second quarter of 2008 and the second quarter of 2010.

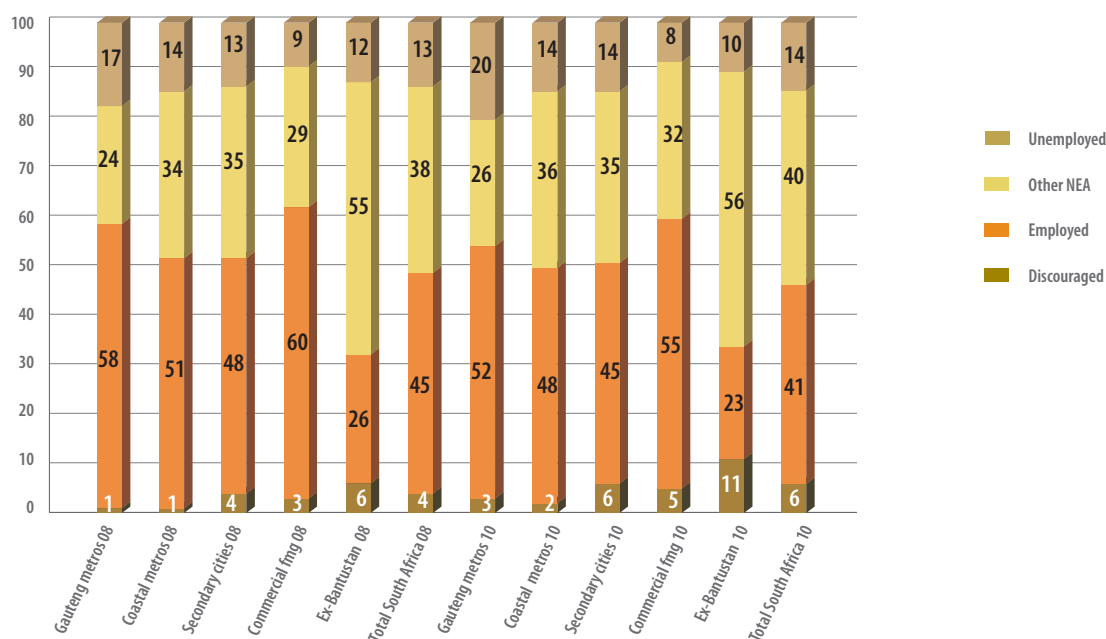


Figure 2.13 Employment status of WAP, 2008 and 2010²³ (%)

Source: Stats SA, 2008²⁷ and 2010²⁸

The most important component is in red – the proportion of the WAP in employment (formal and informal). The employment rate in South Africa fell by 4%, from 45% to 41%. The biggest contraction was in the Gauteng metros, where the rate was 58% in 2010, down from 52% in 2008, while the commercial farming areas also experienced a larger contraction than the national average. In contrast, the coastal metros, secondary cities and former Bantustans experienced a smaller-than-average employment contraction. In all three cases, the employment rate fell by 3% from the original level. Despite the government's major infrastructure investment in Gauteng in recent years and the region's prominent role in hosting the 2010 FIFA World Cup™, it appears that the recession hit Gauteng harder than elsewhere. This finding is supported by the data on building plans approvals, particularly in Johannesburg and Tshwane.

Manufacturing was the most vulnerable industry to the recession as it was more exposed to international competition (as a result of cheap imports) and abroad (in export markets). Figure 2.14 shows the breakdown of broad industry categories for the formal sector in 2008 and 2010.

“Approximately one million jobs were lost to the South African economy between late 2008 and early 2010... Manufacturing was the most vulnerable industry to the recession.”

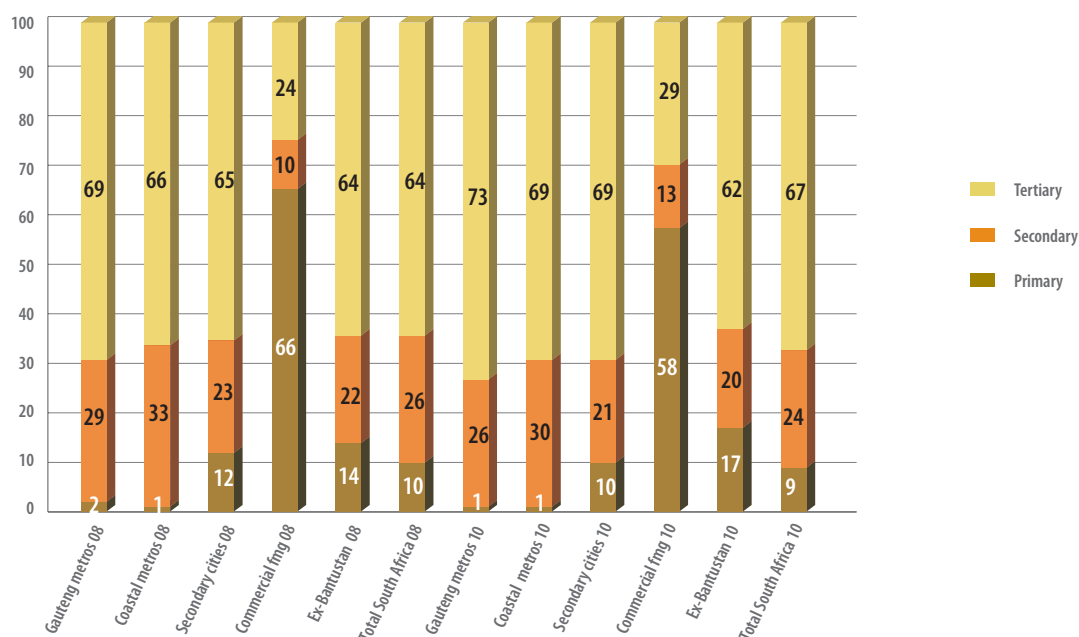


Figure 2.14 Broad industry categories – formal sector, 2008 and 2010²⁶ (%)

Source: Stats SA, 2008²⁷ and 2010²⁸

All parts of the country experienced a decline in secondary (manufacturing and utilities) employment between 2008 and 2010, with the exception of the commercial farming areas.

Figure 2.15 shows the broad occupational categories for the formal sector in 2008 and 2010.

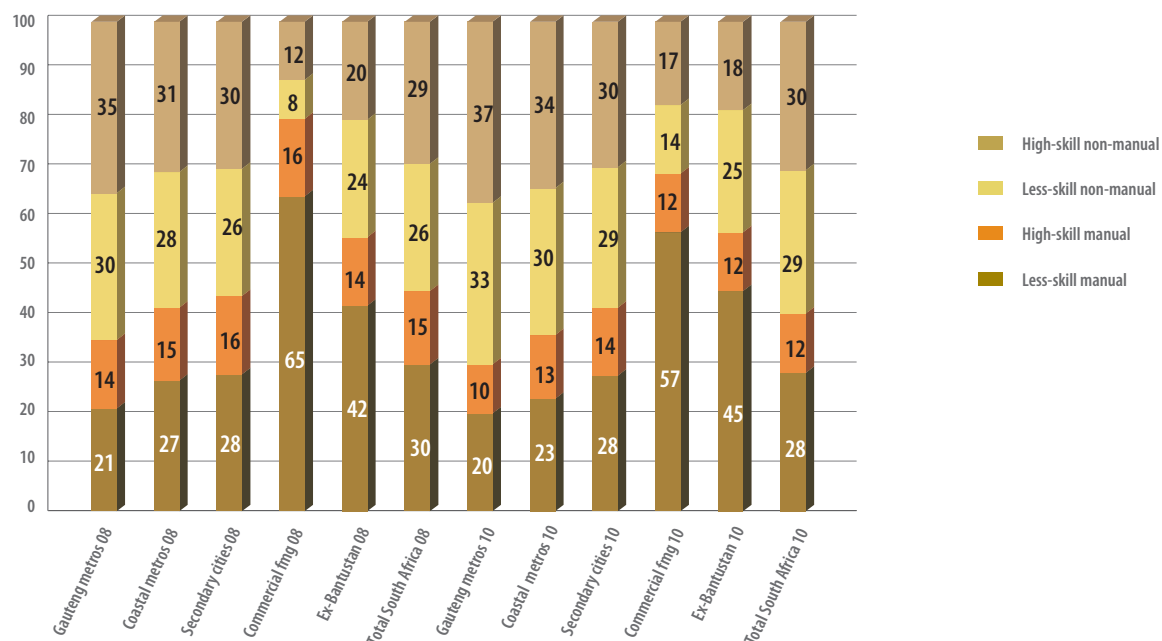


Figure 2.15 Broad occupational categories – formal sector, 2008 and 2010²⁹ (%)

Source: Stats SA, 2008³⁰ and 2010³¹

Skilled manual workers (such as artisans) were the most vulnerable to the recession. They were affected in all parts of the country, especially Gauteng.

UNDERLYING DRIVERS AND DETERMINANTS

A range of underlying conditions or drivers influence the economic outcomes described above. There are complex two-way relationships at work that should caution against any simplistic attribution of primacy to one set of variables over another. Nevertheless, it may be possible to distinguish between more and less important influences on cities' economic performance. Five broad factors are considered: innovation and creativity, human capital, specialisation, connectivity, and investment.

Innovation and creativity

Innovation is vital for cities to adapt and strengthen their resilience to changes in markets and technology. It helps companies to build differential advantage that others cannot readily replicate, which limits direct head-to-head competition based on labour costs or government subsidies. Differentiation means providing something special or unique that is valued by customers, enabling products to be sold at premium prices. Innovation is supported by investment in science, technology and design. Specialised knowledge and expertise can also emerge through cumulative local learning, enabling the continuous upgrading of products and processes over time. Cities are favourable locations for producing new and improved goods and services because the density and proximity of economic agents facilitates information sharing, learning and creativity.

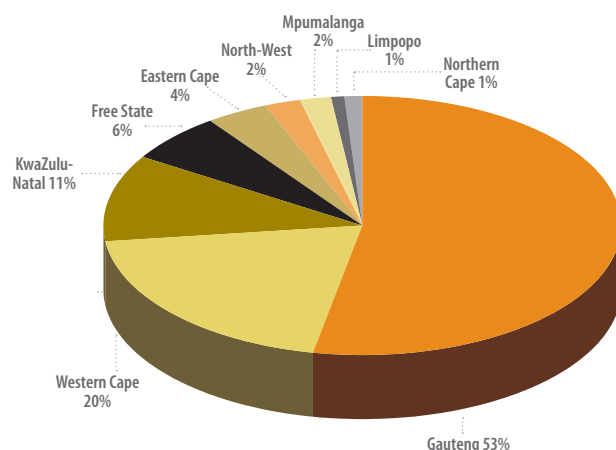


Figure 2.16 R&D investment, 2007/08 (Rands)

Source: Quantec Regional Database ³²

One of the common measures of innovation is investment in Research and Development (R&D). The level of spending on R&D can be used to compare the scale of innovative activity in different places. Unfortunately, the R&D investment data is only available for provinces rather than for metros and non-metros, which is shown in Figure 2.16 for 2007/08.

More than half of all R&D investment in South Africa occurs in Gauteng. Another 20% occurs in the Western Cape, followed by KwaZulu-Natal with 11%. The four provinces without any major cities (Limpopo, Northern Cape, Mpumalanga and North-West) have only 6% of the country's spending on R&D between them. Clearly, R&D investment is highly concentrated within the country, with a strong orientation towards the major metros that house the leading universities, research centres of major corporations and government and independent research institutes.

The intensity of innovation is another useful variable, measured by the level of spending on R&D in relation to an area's population. This indicates the ability and/or commitment of economic agents to fund innovation. Figure 2.17 shows the R&D investment per person for 2007/08.

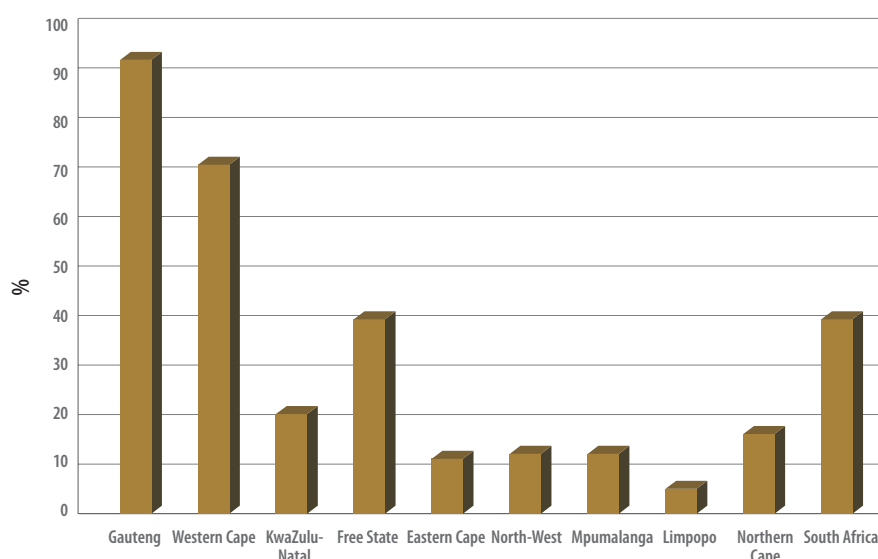


Figure 2.17 R&D investment per person, 2007/08 (Rands)

Source: Quantec Regional Database ³³

The level of R&D investment per person is much higher in Gauteng and the Western Cape than anywhere else in the country. Spending on R&D per person in Gauteng is almost two-and-a-half times the national average, and nearly twice as much in the Western Cape. Apart from the Free State, the other provinces spend far less on R&D than the national average. From this evidence, R&D investment appears to be extremely concentrated within the country, with a strong orientation towards the major metros.

Human capital

In recent years, greater emphasis has been placed on the role of human skills and capabilities as drivers of economic development. It follows partly from arguments that labour is a dynamic resource enabling continuous improvements in productivity and value added through learning and ingenuity. A related argument is that intellectual resources (human intelligence, understanding and creativity) have become more important determinants of prosperity with the growing knowledge-intensity of many economies. The growing emphasis on human capital also reflects greater social and geographical mobility in the context of rising incomes, improved transport and communications, and more outsourcing and subcontracting of various business functions. Many cities aspire to more high-level occupations and fewer routine functions to safeguard their economic position.

One advantage of targeting key occupations or advanced skillsets is that they cut across industries and are therefore more generic and versatile resources for fostering sustained economic development. Examples include engineers, designers, scientists, project managers, accountants and marketing experts. In principle, they can be employed in different fields, thereby increasing the resilience and adaptive capacity of the local economy. It has also been suggested that in future cities may become less well known for what they produce, and much better known for who they employ, in other words their dominant occupations. This will reflect their position in the functional and locational hierarchies of corporations, and their ability to attract, retain and develop capable people.

The occupational structure in different parts of the country varies greatly. Figure 2.18 shows the breakdown of broad occupation categories for formal sector employment.

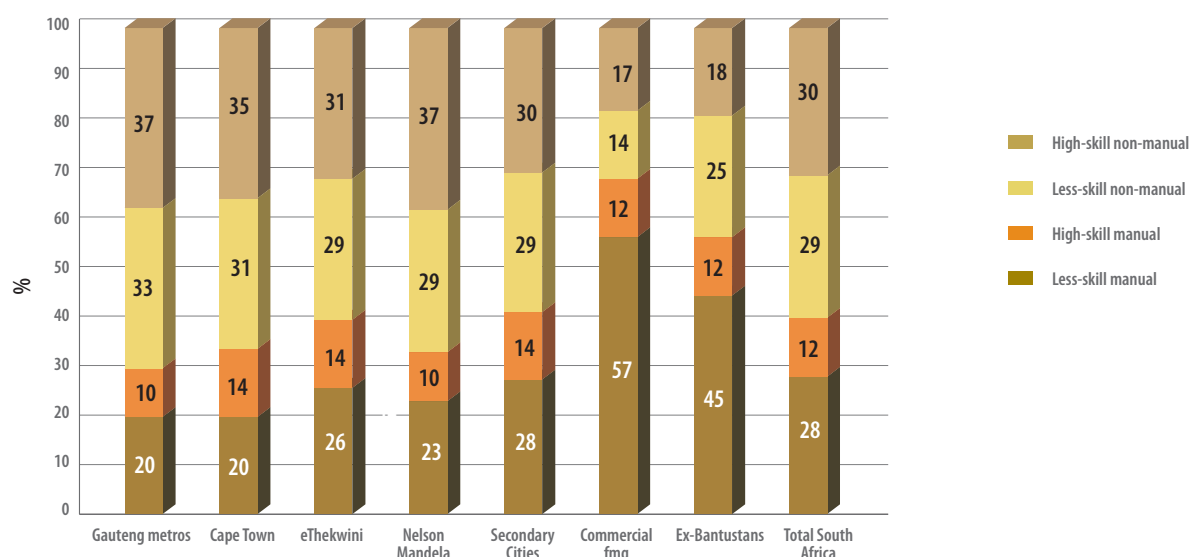


Figure 2.18 Broad occupation categories – formal sector employment, 2010³⁴

Source: Stats SA, 2010³⁵

There are roughly twice as many non-manual (or white collar) jobs in the metros as manual (or blue collar) jobs – a proportion that is reversed in the rural areas. Within each of these categories, the emphasis is clearly on skilled non-manual jobs in the metros (such as managers, professionals and technical workers) and less-skilled manual jobs in the rural areas (such as farm workers and miners). The quality and remuneration of these jobs is related to their status.

This occupational pattern is also reflected in the educational qualifications of formal economy workers, a breakdown of which is shown in Figure 2.19.

The Economy of Cities continued

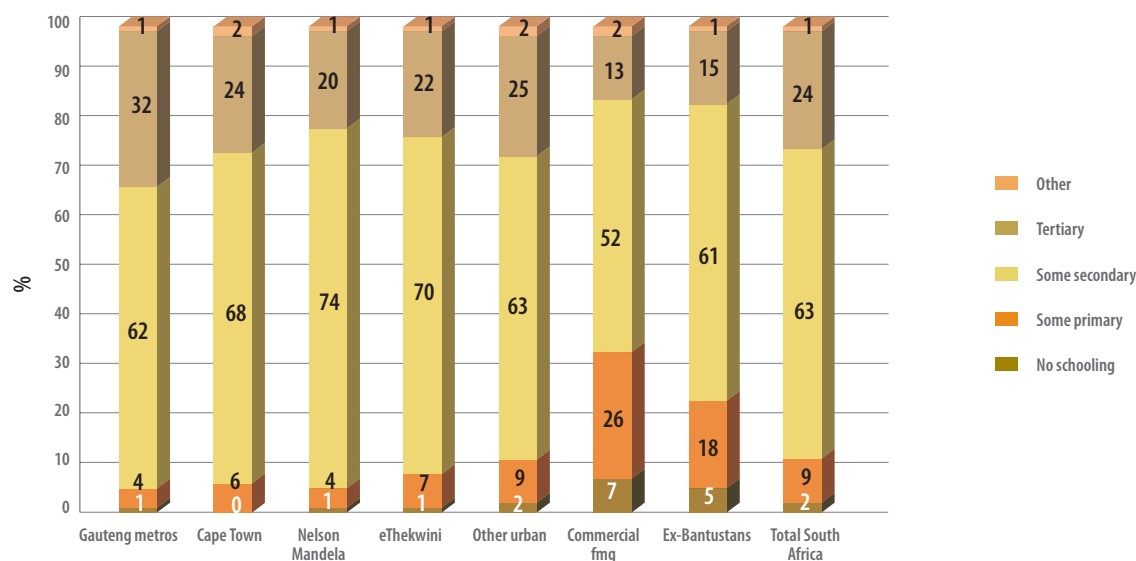


Figure 2.19 Educational achievement – formal sector, 2010³⁶

Source: Stats SA, 2010³⁷

The workforce of the metros is generally more highly qualified than the workforce elsewhere. Nearly a third of the Gauteng metro workforce has a tertiary qualification, compared with about one in seven in the rural areas. A third of workers in the commercial farming areas have no secondary education, compared with about one in twenty in the metros.

The higher rate of employment (and better economic outcomes more generally) in the metros than elsewhere could perhaps be interpreted as the product of superior skills and qualifications. Figure 2.20 tests this proposition by controlling for the influence of education.

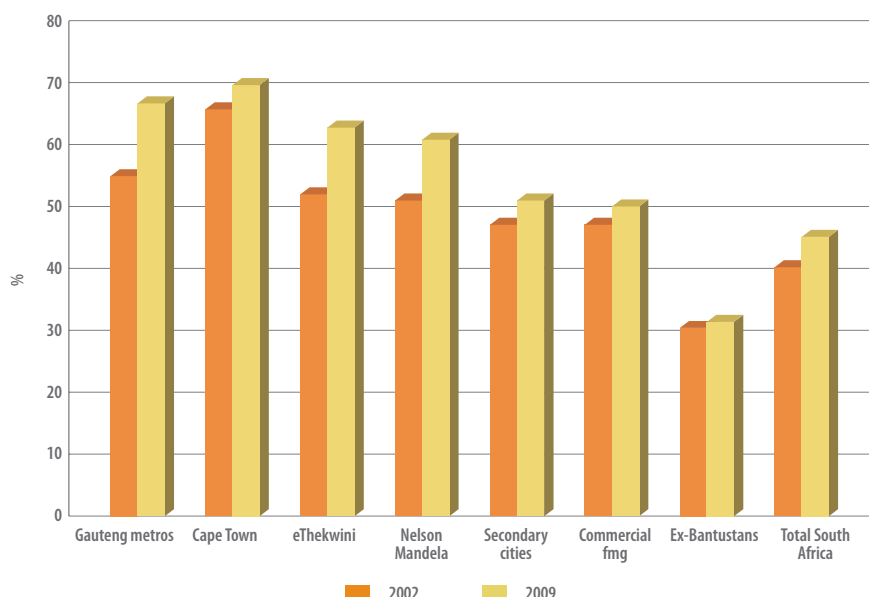


Figure 2.20 Percentage of employed 15–64 year olds with grade 12+

Source: Stats SA, 2002³⁸ and 2009³⁹

The comparison is restricted to the employment rate of working age people with matric (grade 12 or higher qualifications). Their employment rates are higher across the board, indicating that education is important in affecting people's labour market position and employability. However, the employment rate of people with matric remains much higher in the metros than in the rural areas. The employment gap between the metros and the former Bantustans is even larger for people with matric than for all adults. It has also increased more strongly over the last decade. People with matric are more than twice as likely to have work in the metros than in the former Bantustans. The reason for the better employment outcomes in the cities appears to have more to do with their better performing economies than with the (educational) characteristics of the people living there. Skills are not a panacea for economic success.

Specialisation

There is considerable debate among economists about the relative merits of industrial specialisation and diversity in city economies. Specialisation permits concentrated effort and mutual learning among related firms. The scale and density of business collaborators and specialised support services (such as venture capital and suppliers of research and market intelligence) generates sector-specific competitive advantages. A complex web of inter-firm networks can emerge, enabling firms to compare, compete, collaborate and learn from each other. This can create a self-reinforcing dynamism that spurs innovation, attracts mobile capital and talent, and generates growth from within.⁴⁰ The location quotient is the usual measure of industrial specialisation.

There are two important risks of specialisation. Firstly, local economies become locked into particular technologies, products and markets that impede adjustment to altered economic circumstances, causing long-term decline. There are many examples of specialised former industrial cities around the world that struggled for many years to diversify and adapt to shifting global conditions. Secondly, specialised economies are more vulnerable to short-term instability associated with business cycles, external shocks and other fluctuations that periodically afflict particular industries. Specialisation may also be of little value to industries that do not involve dense networks and co-operation among constituent firms.

The sectoral composition of each city economy differs quite markedly. Figure 2.21 shows the share of output (GVA) in each industry for 2009 and can be used to compare the city economies with each other and with the national economy.

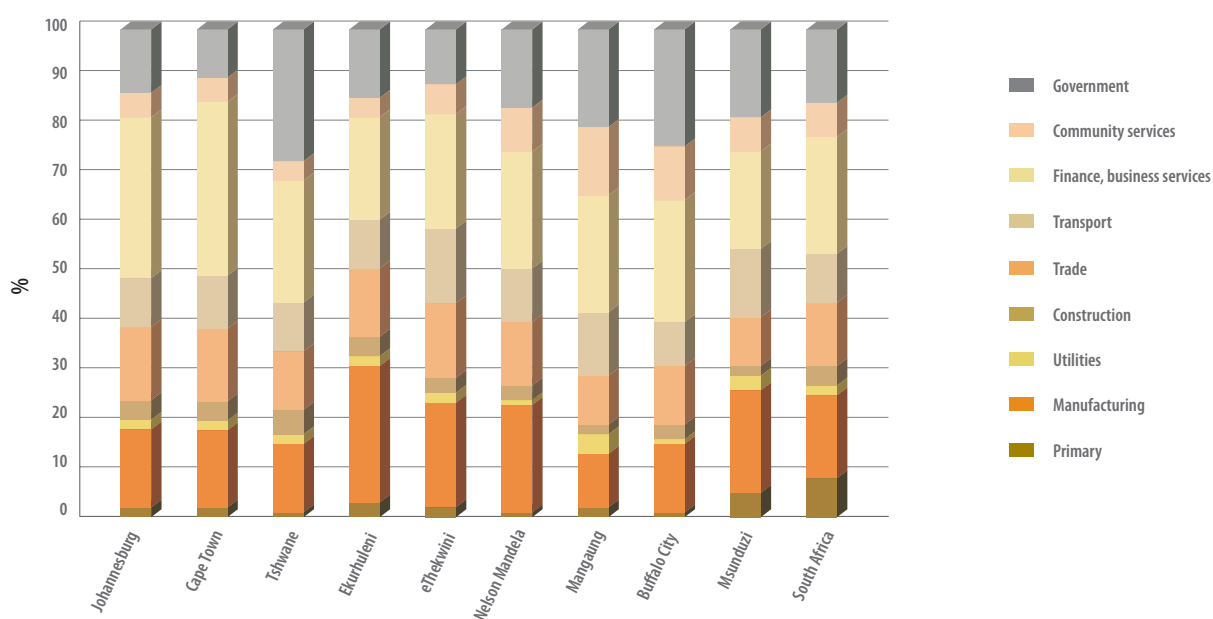


Figure 2.21 Share of GVA in each sector, 2009

Source: Quantec Regional Database ⁴¹

Cape Town and Johannesburg have relatively large financial and business service sectors, which dominate their economic base and make them atypical of other local economies. Tshwane has a very large government sector, reflecting the presence of national and provincial departments and parastatals. Manufacturing is the most distinctive feature of the economic base of four other cities – Ekurhuleni, eThekweni, Nelson Mandela Bay and Msunduzi. Mangaung and Buffalo City have nothing quite so distinctive about their economic structures, except perhaps a slightly larger-than-average government sector. Apart from this, their economies are typical of the structure of the national economy, although with less agriculture and mining activity.

Compared with the national structure, it is noticeable that the government sector is relatively small in four of the five largest metros, indicating a lower dependence on direct public sector activity. Government activity is more prominent in Tshwane and above average in the four smaller cities. Transport, trade, construction and utilities do not vary much in size between the cities, indicating that these are predominantly locally-traded activities. Manufacturing and finance are more variable because at least part of these activities serve wider markets (hence they are defined as externally-traded or tradable activities).

The Economy of Cities continued

Figure 2.22 shows the share of employment in each industry.

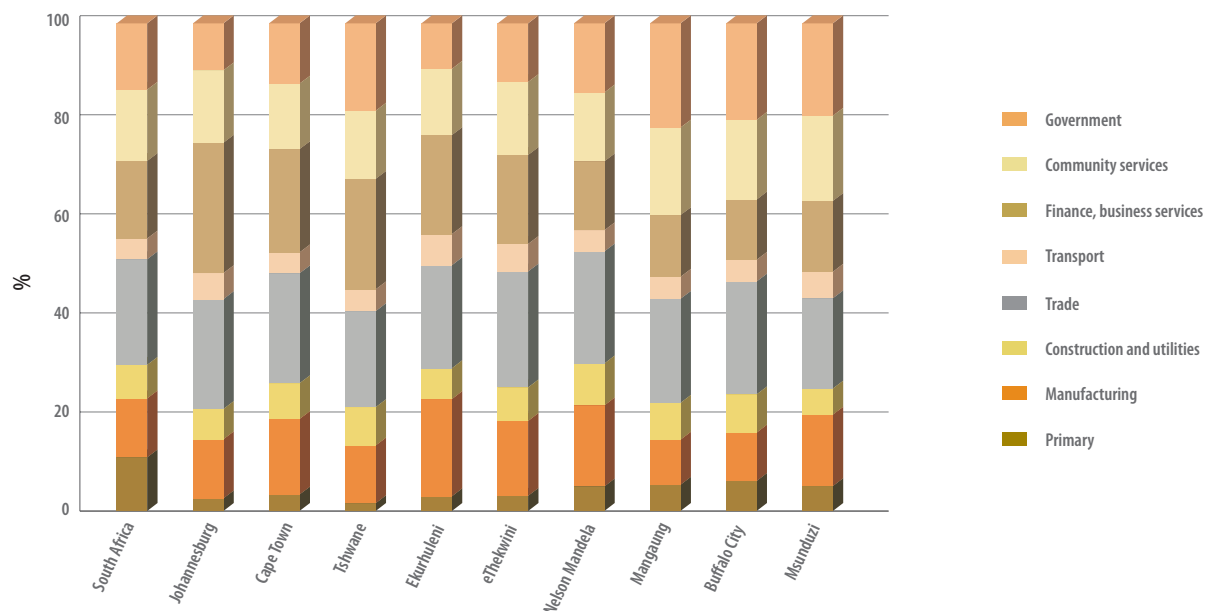


Figure 2.22 Share of employment in each sector, 2009

Source: Quantec Regional Database ⁴²

The breakdown is similar to the share of output, with a few exceptions. Cape Town has a smaller share of employment in financial and business service sectors than output, perhaps because these are relatively high-level functions (employing fewer workers than average). Tshwane has a smaller share of employment in the government sector than output, possibly for the same reason (there are more senior positions involved). Manufacturing remains particularly important in four cities – Ekurhuleni, eThekweni, Nelson Mandela Bay and Msunduzi – although its share of jobs is generally smaller than its share of output. Six of the nine SACN cities have more jobs in manufacturing than the country as a whole. All the metros, with the exception of Nelson Mandela Bay, have more jobs in finance and business services than South Africa as a whole.

The degree of specialisation can be examined more closely by disaggregating the sectoral analysis. Table 2.1 shows the location quotient per industrial sector in each city. A quotient of 1.0 means that a city has the same level of employment in that industry as the national average and a quotient of 1.5 means it is 50% above average. All the location quotients above 1.4 are highlighted in yellow for ease of identification. The broad sectors are shown in capitals in the right-hand column.



Table 2.1 Employment location quotients for South African cities, 2009

Jo'burg	Tshwane	Ekurhuleni	Cape Town	eThekweni	Nelson Mandela	Msunduzi	Mangaung	Buffalo City	
0.23	0.15	0.27	0.31	0.28	0.46	0.46	0.49	0.56	PRIMARY SECTOR
1.00	0.98	1.65	1.28	1.27	1.37	1.21	0.76	0.82	MANUFACTURING
0.62	0.67	1.10	1.00	0.91	0.68	0.94	0.63	0.66	Food and beverages
0.75	0.56	0.56	2.26	2.40	1.22	1.59	1.53	1.36	Textiles and clothing
1.19	0.67	1.21	1.47	1.21	0.57	1.52	0.49	0.33	Paper, publishing, printing
1.22	0.86	2.44	1.33	1.49	1.48	1.13	0.78	0.64	Chemicals, rubber, plastic
0.75	0.99	1.70	0.80	0.58	0.93	0.50	0.73	0.45	Other mineral products
1.08	0.90	2.57	1.06	0.95	0.85	1.55	0.62	0.44	Metal products, machinery
1.58	1.08	2.51	0.92	0.86	2.72	1.44	0.62	1.55	Electrical machinery
1.93	1.51	1.83	1.46	1.05	0.82	1.02	0.76	0.57	Radio, TV, instruments
0.78	2.57	1.49	0.95	1.57	5.44	0.68	0.46	2.21	Transport equipment
1.48	1.05	1.38	1.43	1.27	0.72	0.96	1.07	0.72	Furniture and other mfg
1.12	1.05	1.15	1.14	0.92	0.66	0.93	0.86	0.49	UTILITIES
0.88	1.15	0.90	1.06	1.00	1.29	0.77	1.12	1.19	CONSTRUCTION
1.13	1.12	1.01	1.05	1.07	1.00	1.07	1.11	1.09	TERTIARY SECTOR
1.03	0.90	1.00	1.01	1.10	1.08	0.87	0.98	1.09	Wholesale and retail trade
1.17	1.01	0.78	1.34	1.09	0.92	0.70	0.97	0.87	Catering and accommodation
1.16	0.89	1.55	0.98	1.39	0.94	1.29	0.99	1.02	Transport and storage
1.76	1.91	1.20	1.17	0.98	1.44	1.21	1.44	1.17	Communication
2.01	1.43	1.28	1.51	0.99	0.90	0.77	0.86	0.75	Finance and insurance
1.62	1.42	1.28	1.30	1.18	0.89	0.94	0.78	0.78	Business services
1.01	0.96	0.93	0.92	1.02	0.96	1.19	1.23	1.12	COMMUNITY AND PERSONAL SERVICES
0.71	1.32	0.69	0.91	0.89	1.04	1.40	1.58	1.46	GENERAL GOVERNMENT

Source: Quantec Regional Database ⁴³

The Economy of Cities continued

Manufacturing employment shows the most variability between cities, whereas the tertiary sector shows the least. The level of general government employment varies surprisingly between cities. Johannesburg and Tshwane have strengths in finance and business services, along with communication. Johannesburg also has industrial strengths in electrical and electronic equipment and furniture, but surprisingly few jobs in the government sector. Tshwane has strengths in transport equipment (such as motor vehicle manufacturing). Ekurhuleni is predominantly a manufacturing centre, with a diverse industrial base, and its strengths in transport and storage probably reflect the presence of OR Tambo airport. Cape Town is a relatively strong financial centre, but it also has several manufacturing strengths, especially in clothing and textiles. The city of eThekweni is a more specialised manufacturing centre than some of the other cities, with strengths in clothing and textiles and transport equipment (such as motor vehicles and shipbuilding). Nelson Mandela Bay has a strong specialisation in motor vehicles, followed by electrical machinery, whereas Msunduzi has a fairly wide range of manufacturing strengths, none of which is very pronounced. The two cities with the fewest sectors with a location quotient above 1.4 are Mangaung and Buffalo City. Mangaung has the largest share of jobs in government, while Buffalo City has strengths in transport equipment (motor vehicles) and electrical machinery.

The pattern suggests no obvious relationship between specialisation and overall economic success. More specialised cities are not necessarily more or less successful than more diversified cities. For example, strengths in manufacturing do not translate directly into overall economic growth or decline for a city. Ekurhuleni does not perform noticeably better or worse than other cities. Nelson Mandela Bay is something of an exception in that its exceptional presence in motor vehicle manufacturing does not seem to have helped the city's overall economy, although it may of course have performed worse without the car industry. There is perhaps some relationship between financial and business services and overall prosperity, illustrated by Johannesburg, Tshwane and Cape Town. In contrast, Msunduzi, Mangaung and Buffalo City are all noticeably weak in financial and business services, but, interestingly, they are also particularly strong in government employment. This may be a consequence of economic weakness, in other words, they may have been compensated by the government for their low levels of employment.

Connectivity

Internal and external connectivity are important for economic efficiency and development. Good internal connectivity allows people and goods to move quickly, smoothly and cheaply across the city, adding to productivity and long-term growth. Congestion and other bottlenecks in the transport system add to the costs of businesses and workers, and undermine economic performance. A robust transport network also improves urban resilience by giving people a choice of transport mode and enabling adjustment from one form to another in response to problems, such as rising oil prices.

Good external connectivity provides domestic producers with access to international markets, suppliers and collaborators, and allows firms to benefit from the two-way movement of people, ideas and finance. Such links are vital for countries on the periphery of the major continental economies, such as South Africa. They enable cities to function as gateways or logistics hubs to the rest of the country and to neighbouring regions. Being open to external information and intelligence can also alert domestic firms and organisations to economic threats and sources of vulnerability, as well as new markets and other opportunities for securing development, such as tourism.

“Internal and external connectivity are important for economic efficiency and development. Good internal connectivity allows people and goods to move quickly, smoothly and cheaply across the city... Good external connectivity provides domestic producers with access to international markets, suppliers and collaborators.”

Internal connectivity

One way of measuring internal connectivity is the comparative travel-to-work time for workers in different cities. Figure 2.23 shows the latest available data drawn from the 2003 National Household Travel Survey.⁴⁴ Information was not available for Mangaung, Msunduzi or Buffalo City.

The figure shows that commuting times are longer than the national average in four of the six metros, and more than 50% longer in Tshwane. There is bound to be a relationship between city size and commuting times, but an efficient transport system can moderate the effect, just as an inefficient network can exacerbate it. South African cities also suffer from the effects of peripheral township development. For example, many of Tshwane's workers live a long distance away in Soshanguwe, as shown in Chapter 3. The pattern revealed in the following figure is also consistent with the commuting time breakdown shown in Chapter 3, in which residents of Gauteng were found to have the longest commutes, followed by Cape Town and eThekweni.

External connectivity

One way of measuring external connectivity is the number of destinations to which it is possible to fly from a city's airport. Figure 2.24 shows the number of destinations for the main airport of each city in early 2010.

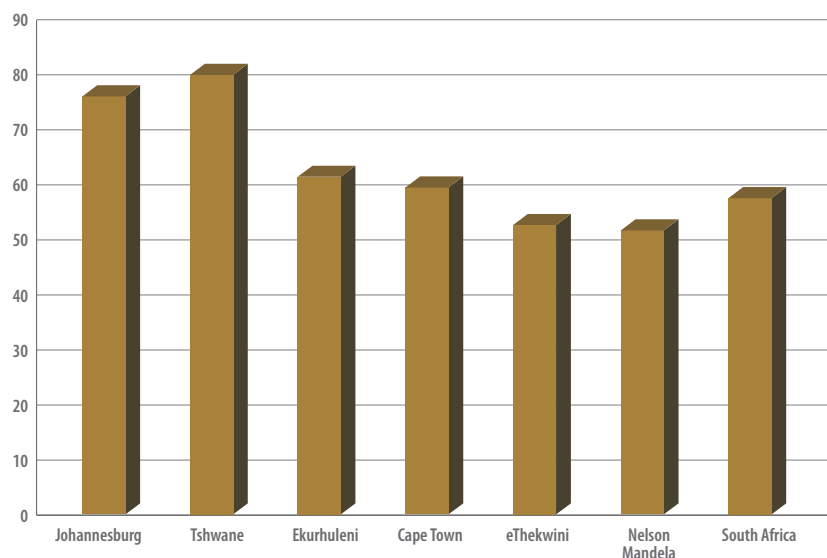


Figure 2.23 Average travel-to-work time (mins), 2003

Source: Stats SA, 2003⁴⁵

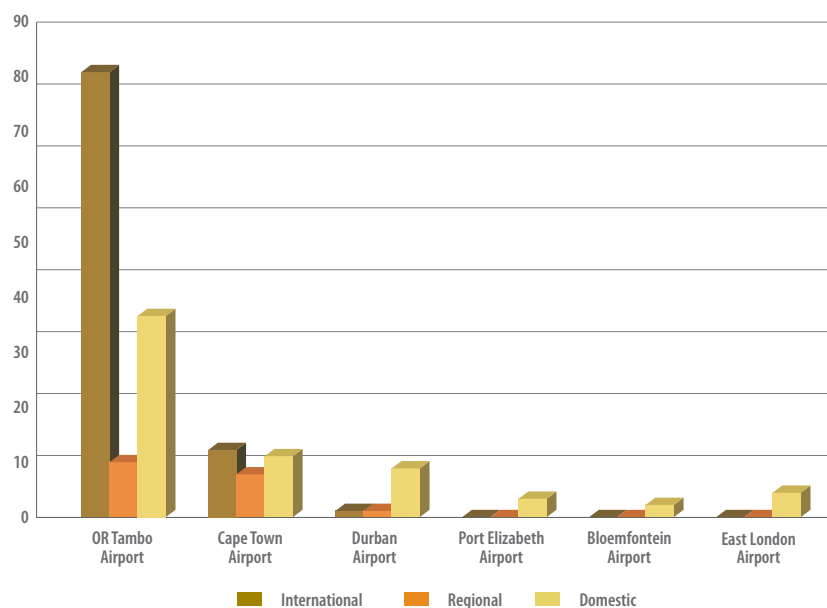


Figure 2.24 Number of airline destinations, 2010

Source: Airports Company of South Africa

OR Tambo airport gains major economies of scale from serving Johannesburg, Tshwane and Ekurhuleni, and is clearly the dominant airport in the country. Consequently, the Gauteng metros are far better connected to domestic and international destinations than elsewhere in the country. During 2010 King Shaka airport in eThekweni was opened in order to strengthen the city-region's international connections, and OR Tambo and Cape Town airports were enlarged and modernised in time for the 2010 FIFA World Cup™.

The Economy of Cities continued

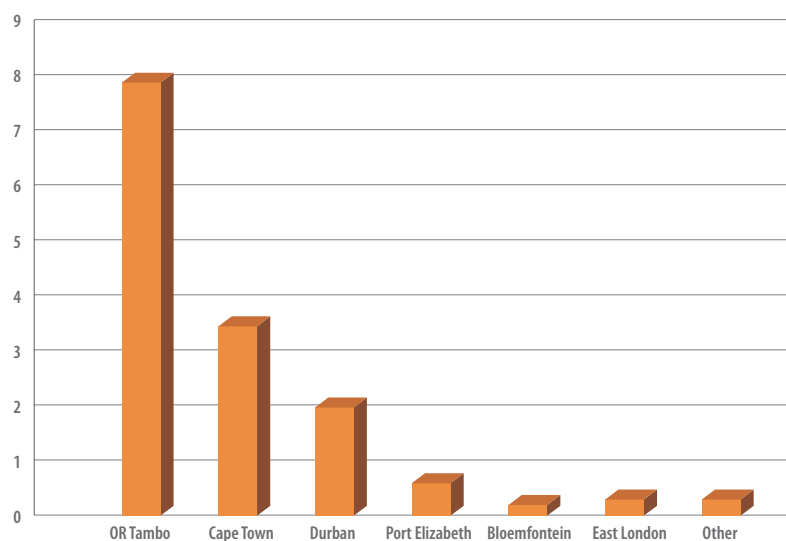


Figure 2.25 Airport passenger arrivals, 2009 (millions)

Source: Airports Company of South Africa

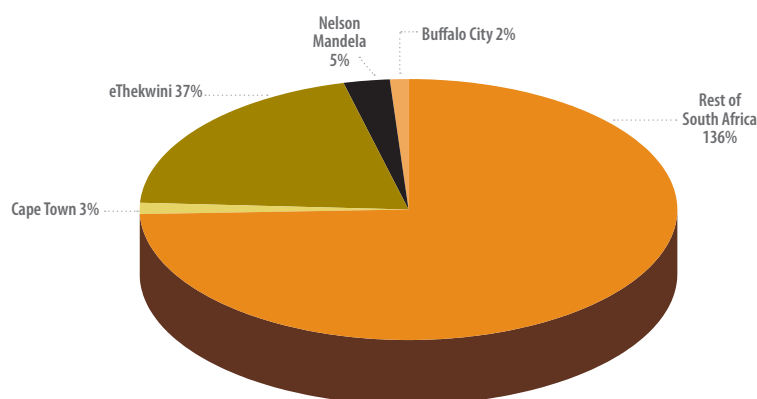


Figure 2.26 Cargo handled by sea ports (metric tons), 2009

Source: Transnet SA



A slightly different picture emerges from the total number of passenger arrivals at each airport, represented by Figure 2.25.

OR Tambo is less dominant in relation to the other airports, as many of its destinations involve less frequent flights than those served by Cape Town and Durban.

Figure 2.26 provides a breakdown of the cargo handled by sea ports and shows quite a different pattern to Figure 2.25.

Sea ports are more important for bulky cargo such as imports and exports of raw materials, cars, clothing and electronic equipment. Almost 183 million metric tons of cargo passed through South African ports in 2009. Only about a quarter of South Africa's sea cargo passed through the city ports. The rest passed through other ports, such as Richards Bay and Saldanha. This cargo tends to be bulky minerals such as coal and iron ore. Durban harbour was by far the most important port in the country.

Electronic connectivity

Electronic connectivity is increasingly important to supplement, and in some cases replace, physical connectivity. It is internal (to the city) and external (domestic and international) and facilitates the flow of information, enabling firms and workers to access knowledge and intelligence. In the absence of reliable data for businesses, electronic connectivity can only be measured by the proportion of households with internet access. Chapter 3 shows that nearly a quarter of households in South Africa (23%) have at least one member who uses the internet either at home, work, a place of study or internet café. Internet use is highest in the Gauteng metros (39%), followed by the coastal metros (33%), secondary cities and commercial farming areas (both 19%), and former Bantustans (11%).

Investment

Investment in infrastructure, buildings, plants and equipment is a vitally important source of future economic growth. The availability of funds for investment may also reflect the success of past growth. This section considers current patterns and past trends in capital investment in public infrastructure and industrial, commercial and residential buildings. It reviews the comparative levels and patterns of investment in the nine municipalities and discusses the differential impact of the recession. In the absence of reliable data on all forms of private and public investment, a package of indicators is used.

Investment in buildings

The first indicator is the value of building plans approved, as notified by municipalities to Stats SA.⁴⁶ Buildings are vital to accommodate the activities of firms, organisations and households. Consequently, it is a useful measure of the physical expansion of economic and social activity. It is also a measure of modernisation and restructuring, as some buildings are intended to replace obsolete stock. The main drawback is that the data measures planned rather than actual investment.

Figure 2.27 provides a breakdown of the total value of building plans approved in the metros from 2004–2009.

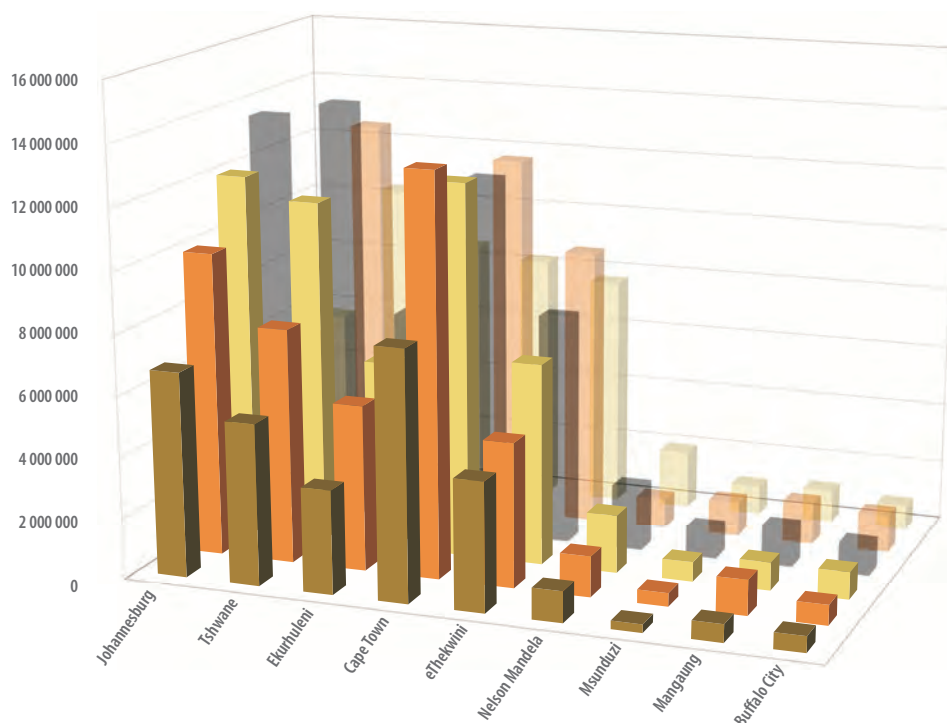


Figure 2.27 Total value of building plans approved, 2004–2009 (R'000)

Source: Stats SA ⁴⁷

	Johannesburg	Tshwane	Ekurhuleni	Cape Town	eThekweni	N Mandela	Msunduzi	Mangaung	Buffalo City
2004	6 758 570	5 329 029	3 429 960	8 212 144	4 260 252	1 033 088	278 880	598 639	538 310
2005	10 028 716	7 758 125	5 488 449	13 235 526	4 780 857	1 349 848	445 930	1 175 920	672 445
2006	12 052 113	11 367 655	6 238 757	12 356 919	6 668 953	1 922 103	652 224	933 785	907 862
2007	13 592 084	14 133 276	7 256 847	11 986 925	7 622 545	2 117 919	971 240	1 288 363	993 808
2008	5 523 384	12 990 257	9 940 925	12 139 072	9 217 389	984 005	1 159 200	1 382 738	1 259 148
2009	5 682 242	10 350 354	8 569 627	8 219 064	7 674 873	1 930 069	968 805	1 079 924	818 061

The dominance of building activity in the five major metros is clear. The level of building plans in the other four cities is a different order of magnitude. Overall, Cape Town had the highest value of building plans approved over the 2004–2009 period, followed by Tshwane and Johannesburg. Of the five major metros, eThekweni and Ekurhuleni appear to have been most resilient to the recession. Johannesburg seems to have been the most vulnerable, with a dramatic slowdown in activity after 2007.

The Economy of Cities continued

Residential buildings

The second indicator is the value of residential building plans approved. This is a measure of household growth as well as economic prosperity. Figure 2.28 provides a breakdown of the total value of residential building plans approved in the metros from 2004–2009.

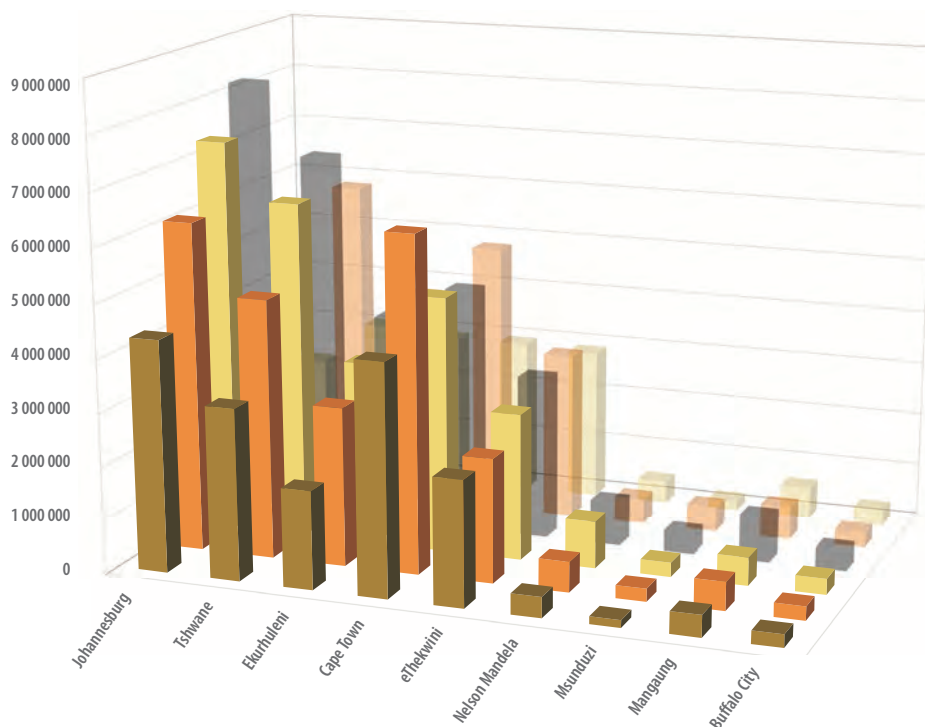


Figure 2.28 Total value of residential building plan approved, 2004–2009 (R'000)

Source: Stats SA ⁴⁸

	Johannesburg	Tshwane	Ekurhuleni	Cape Town	eThekweni	N Mandela	Msunduzi	Mangaung	Buffalo City
2004	4 340 031	3 214 331	1 844 255	4 324 132	2 355 070	390 888	142 134	413 979	245 248
2005	6 166 614	4 862 284	2 987 529	6 284 915	2 330 082	576 195	243 851	538 987	262 348
2006	7 382 923	6 335 936	3 444 097	4 814 290	2 759 561	889 583	273 310	535 223	301 707
2007	8 233 552	6 934 013	3 964 931	4 624 253	3 071 425	832 782	391 671	862 213	385 196
2008	2 535 578	6 093 081	4 095 795	5 109 051	3 156 630	478 837	480 875	633 143	283 877
2009	2 209 668	3 045 030	2 918 194	2 930 849	2 869 100	418 890	179 335	593 520	303 621

There is a striking difference between the nine cities. Johannesburg experienced strong growth in residential building activity from 2004–2007, followed by a remarkable slump. In contrast, eThekweni was far more stable over the period and resilient to the recession. Activity in Ekurhuleni and Tshwane grew steadily until 2008, whereas Cape Town was more volatile. Residential building activity in the remaining four cities was at a much lower level.

Commercial buildings

The third indicator is the value of commercial building plans approved. This is a measure of economic growth, particularly in the service sector. Figure 2.29 provides a breakdown of the total value of commercial building plans approved from 2004–2009.

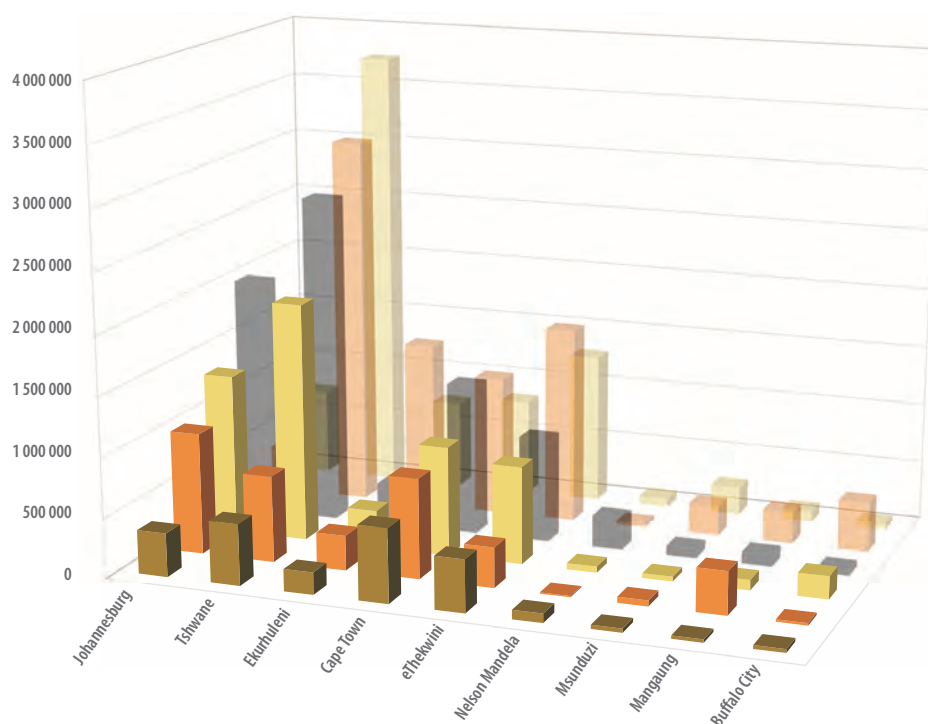


Figure 2.29 Total value of commercial building plans approved, 2004–2009 (R'000)

Source: Stats SA ⁴⁹

	Johannesburg	Tshwane	Ekurhuleni	Cape Town	eThekweni	N Mandela	Msunduzi	Mangaung	Buffalo City
2004	366 401	514 608	185 640	621 317	440 819	76 962	33 460	26 598	29 685
2005	1 017 594	724 866	293 305	838 718	338 420	10 388	49 966	365 075	19 710
2006	1 338 407	2 000 908	313 633	920 508	820 366	52 512	40 530	87 218	192 743
2007	1 999 754	2 747 783	345 973	1 277 370	881 700	269 203	74 392	97 709	49 823
2008	369 146	3 113 323	1 405 553	1 175 377	1 651 203	32 629	256 001	271 284	419 036
2009	725 589	3 735 744	738 129	810 984	1 270 866	69 437	235 168	94 700	49 552

Once again, there are substantial differences between the nine cities. Tshwane experienced the strongest growth in commercial building activity from 2004–2009, showing no sign of the economic downturn, which may be attributable to the sizeable role of the public sector in its local economy. Tshwane also had the largest total level of commercial building activity over the period, reflecting the importance of its service sector. Johannesburg experienced strong growth until 2007, followed by a major contraction. Cape Town and eThekweni experienced steady growth until 2008, followed by a more gradual slowdown. Ekurhuleni experienced a much smaller level of commercial building than the other four major metros, reflecting its largely industrial economy. Commercial building activity in the remaining four cities was patchy.

The Economy of Cities continued

Industrial buildings

The fourth indicator is the value of industrial and warehousing building plans approved, which is a measure of economic growth, particularly in the manufacturing sector. Figure 2.30 shows additional differences between the nine SACN cities by providing a breakdown of the total value of industrial building plans approved from 2004–2009.

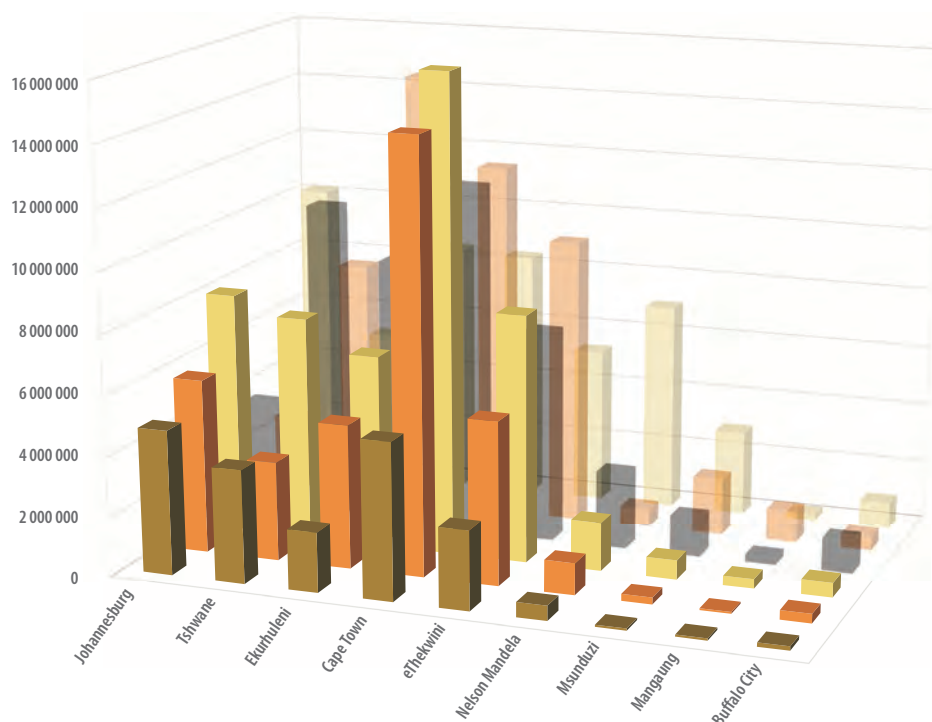


Figure 2.30 Total value of industrial building plans approved, 2004–2009 (R'000)

Source: Stats SA ⁵⁰

	Johannesburg	Tshwane	Ekurhuleni	Cape Town	eThekweni	N Mandela	Msunduzi	Mangaung	Buffalo City
2004	482 500	378 065	200 053	521 807	264 013	49 769	7 116	7 317	13 830
2005	582 990	331 768	481 598	1 434 314	543 968	106 257	23 219	6 425	31 048
2006	808 187	749 313	645 027	1 591 627	825 944	161 872	64 713	31 130	48 791
2007	376 395	1 074 113	902 975	1 174 924	711 836	257 526	133 369	23 572	110 529
2008	258 744	816 687	1 480 237	1 190 677	956 315	61 336	192 674	106 405	47 312
2009	1 015 107	517 168	845 323	833 999	524 177	700 355	285 341	19 754	88 642

Cape Town dominated in terms of the overall level of activity, followed by Ekurhuleni. The continued importance of manufacturing in Cape Town was noted earlier, although industrial building activity appears to have been declining since 2006. The overall pattern in Johannesburg was volatile and apparently not related to the wider economic situation. Nelson Mandela Bay and Msunduzi do not appear to have been affected by the recession either. The city of eThekweni experienced steady growth until 2008, followed by a slowdown. Industrial building activity in Mangaung and Buffalo City was patchy.

Public investment

The first indicator of public investment is the total spend per person by each municipality. This is the total budgeted capital and operating expenditure of each municipality divided by its resident population. It provides an indication of the comparative level of investment in the future prosperity of the city. It can be used in conjunction with the total property rates per person to indicate the strength of a city's existing economic base in the level of resources available to a municipality to spend on its population.

Figure 2.31 shows the municipal expenditure and rates base for 2009.

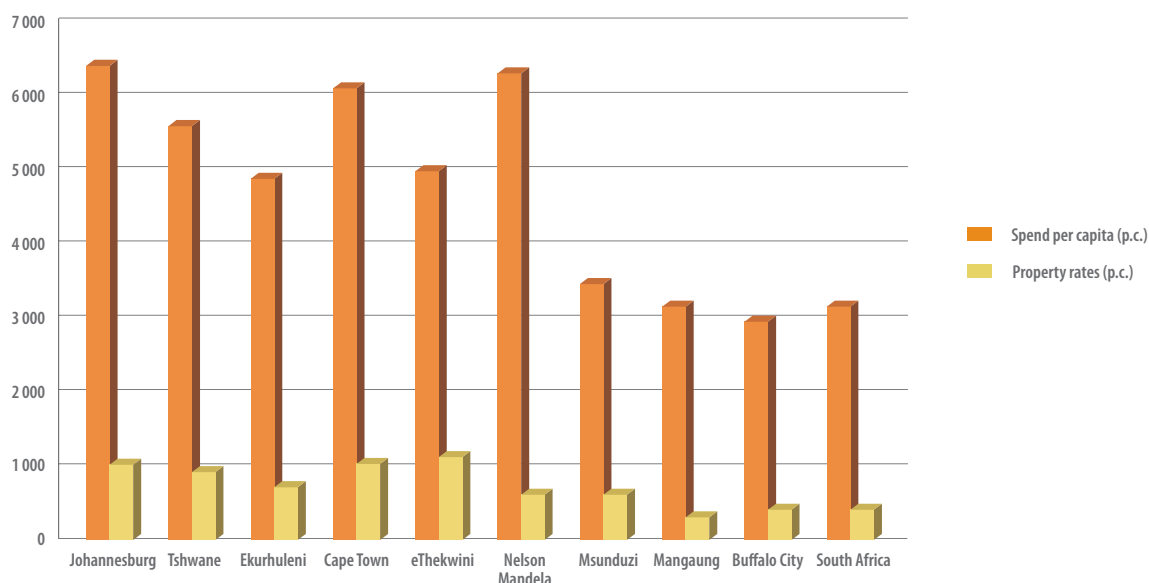


Figure 2.31 Municipal expenditure and rates base, 2009 (Rands)

Source: National Treasury Intergovernmental Finance Report

The metros all invest considerably more per person than the rest of the country. Their rates base is also far stronger, although considerably smaller than their total spending. This indicates a major requirement to borrow capital and a heavy reliance on government grants to make up the shortfall between expenditure and income. The city of eThekweni appears to be in the most robust position, with a relatively healthy level of rates income in relation to expenditure. Nelson Mandela Bay appears to have been relatively precarious, along with Mangaung. In contrast, Johannesburg and Cape Town have relatively high levels of investment and income and appear to be doing more than the other municipalities to position themselves for future growth.

A further indication of investment potential is the ability of a municipality to borrow in the capital market. This is given by its long-term credit rating, which shows its ability to repay debt and indicates the likelihood of default on debt repayment. The government encourages municipalities to borrow in order to invest in infrastructure. Table 2.2 reflects the municipal credit ratings.

Table 2.2 Municipal credit ratings, 2010

Johannesburg	Tshwane	Ekurhuleni	Cape Town	eThekweni	N Mandela
A	BBB+	AA-	AA-	AA-	A+

Source: Information from individual municipalities

Ekurhuleni, Cape Town and eThekweni had the highest credit ratings among the metros, and Tshwane had the lowest. The city of eThekweni's high credit rating is not surprising given its high level of rates income in relation to expenditure.

One of the factors influencing a municipality's credit rating is the average period it takes to collect outstanding debts (debtor collection period). It is arguable that the longer the collection period, the less robust the municipality's procedures and the less resilient it is financially, which may affect the confidence of investors in the city. In particular, financial institutions may be reluctant to lend to a municipality that is slow to collect outstanding debts. Table 2.3 reflects the debtor collection periods from 2007–2009.

The Economy of Cities *continued*

Table 3 Debtor collection periods (in days), 2007–2009

	Johannesburg	Tshwane	Ekurhuleni	Cape Town	eThekweni	N Mandela
2007	60.60	118.10	59.20	81.30	78.10	98.80
2008	62.80	116.30	54.40	84.60	71.50	95.50
2009	61.60	122.50	52.90	97.50	77.20	111.90

Source: National Treasury, 2010⁵¹

Tshwane's debt collection period was considerably longer than most of the other metros, which may explain its relatively poor credit rating. In contrast, Ekurhuleni had a relatively short (and improving) debt collection period, which may be one of the reasons for its good credit rating. Cape Town's debt collection period deteriorated the most over this period.

CONCLUSION

Economic conditions are generally better in the cities than in the rest of the country. This is reflected in the level and rate of growth in output, employment, income and productivity. Bearing in mind the significance of employment for household living standards, well-being and community cohesion, it is striking that the proportion of adults employed in the metros is roughly twice as high as in the former Bantustans. By international standards, however, levels of employment in South African cities are still very low.

City economies and municipalities are also more viable than the economies of other places in the country, as only 17% of all households in the metros derive their main source of income from social grants or remittances, compared with 50% in the former Bantustans. The economies of the three Gauteng metros and Cape Town appear to be stronger than eThekweni, which in turn seems stronger than the economies of Nelson Mandela Bay and the secondary cities.

City economies were better placed than the rest of the country a decade ago, and the gap has subsequently widened. Reasons for their improved performance seem to include higher levels of investment in R&D, higher levels of human capital, greater external connectivity and higher investment in physical capital (infrastructure and buildings). There is no obvious relationship between specialisation and economic success, although cities with large financial and business service sectors seem to have experienced higher overall prosperity.

Despite their stronger performance in the pre-recession period, cities seem to have been less resilient than other parts of the country during the 2008–2010 recession. Gauteng appears to have been most affected by the downturn. Its manufacturing sector proved to be highly vulnerable to the global crisis and manual workers were the worst affected by the redundancies. This shows that there is no room for complacency about the condition of South African city economies.

Looking ahead, much needs to be done to strengthen the productive capabilities of the metros and to spread the benefits of prosperity through more and better work. City municipalities must take the needs of their economies more seriously and encourage long-term growth and development. Improving the economic infrastructure will enhance the business environment and reduce bottlenecks, which will help companies to operate more efficiently and attract inward investment. Higher levels of investment in training and improvements in education will improve workforce productivity and earnings, and give the unemployed a better chance of securing work. Companies and industries with the ambition and capabilities to grow quickly need appropriate support. People who want to explore self-employment or establish a formal (or informal) business should be encouraged and assisted to do so.

A step change is required in local economic policy going beyond the improvised and generally small-scale projects of traditional local economic development. The economy deserves special attention as a cross-cutting priority relevant to most council departments, rather than as a stand-alone function of a single department. Municipalities should consider the impact of their main spending decisions and regulatory functions on enterprise and investment, in addition to the positive measures that may be taken to stimulate growth and development. They have a key role to play in shaping their local economies, both in terms of direct investment and as catalysts for development, by encouraging other stakeholders and building partnerships. Municipalities need to develop innovative financing models to bring in additional resources and make full use of their procurement powers to support local enterprise and employment. They need to experiment with new ways of improving the livelihoods of the poor, both through direct support to informal enterprises and by reducing regulatory burdens and red tape. Municipalities need to develop links with government parastatals and development finance institutions to support their local economies, and work with local universities to increase local access to specialised knowledge and expertise. Being more active on the economy requires a way of working that is different from the delivery of household services; a way that is more flexible, outward-looking and responsive to firms and investors.



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- ³ Gross value added (GVA) is a measure of net economic output of an area or region, in this case of cities.
- ⁴ Quantec Regional Database. <http://www.quantec.co.za>
- ⁵ Ibid.
- ⁶ Ibid.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Please note that some column totals do not all add up to 100% due to rounding.
- ¹² Stats SA, 2002, General Household Survey (GHS). Available from Stats SA, <http://www.statssa.gov.za>
- ¹³ Stats SA, 2009, General Household Survey (GHS). Available from Stats SA, <http://www.statssa.gov.za>
- ¹⁴ Stats SA, 2002, op. cit.
- ¹⁵ Stats SA, 2009, op. cit.
- ¹⁶ South Africa, National Treasury, 2011. Confronting Youth Unemployment: Policy Options for South Africa. Pretoria: Government Printers.
- ¹⁷ Stats SA, 2010, Quarterly Labour Force Survey (QLFS). Available from Stats SA, <http://www.statssa.gov.za>
- ¹⁸ Jutting J & de Laiglesia J, 2009. Is Informal Normal? Towards More and Better Jobs in Developing Countries. Paris: OECD.
- ¹⁹ Stats SA, 2002, op. cit.
- ²⁰ Stats SA 2009, op. cit.
- ²¹ South Africa, National Treasury, op. cit.
- ²² A discouraged work-seeker is a person who was not employed during the reference period, wanted to work, was available to work/start a business but did not take active steps to find work during the last four weeks, provided that the main reason given for not seeking work was any of the following: no jobs available in the area; unable to find work requiring his/her skills; lost hope of finding any kind of work. NEA = not economically active (persons aged 15–64 years who are neither employed nor unemployed in the reference week).
- ²³ Please note that some column totals do not all add up to 100% due to rounding.
- ²⁴ Stats SA, 2008, op. cit.
- ²⁵ Stats SA, 2010, op. cit.
- ²⁶ Please note that some column totals do not all add up to 100% due to rounding.
- ²⁷ Stats SA, 2008, op. cit.
- ²⁸ Stats SA, 2010, op. cit.
- ²⁹ Please note that some column totals do not all add up to 100% due to rounding.
- ³⁰ Stats SA, 2008, op. cit.
- ³¹ Stats SA, 2010, op. cit.
- ³² Quantec Regional Database, op. cit.
- ³³ Ibid.
- ³⁴ Please note that some column totals do not all add up to 100% due to rounding.
- ³⁵ Stats SA, 2010, op. cit.
- ³⁶ Please note that some column totals do not all add up to 100% due to rounding.
- ³⁷ Stats SA, 2010, op. cit.
- ³⁸ Stats SA, 2002, op. cit.
- ³⁹ Stats SA, 2009, op. cit.
- ⁴⁰ Porter M, 1990. The Competitive Advantage of Nations. New York: Free Press.
- ⁴¹ Quantec Regional Database, op. cit.
- ⁴² Ibid.
- ⁴³ Ibid.
- ⁴⁴ Stats SA, 2003, National Household Travel Survey. Available from <http://www.statssa.gov.za>
- ⁴⁵ Ibid.
- ⁴⁶ Stats SA. Available from <http://www.statssa.gov.za>
- ⁴⁷ Ibid.
- ⁴⁸ Ibid.
- ⁴⁹ Ibid.
- ⁵⁰ Ibid.
- ⁵¹ South Africa, National Treasury, op. cit.

“In South Africa, progress in the built environment is usually measured in physical terms, such as the number of new houses built and the number of households provided with clean water, sanitation and electricity ... Yet indicators of physical progress are partial and inadequate by themselves. They say nothing about whether the location and form of housing are appropriate, or whether the provision is in reponse to people’s needs and sustainable in the longer term.”



The Built Environment



The Built Environment



The built form of cities is crucial to the welfare of citizens and to patterns of human interaction and social integration. This is particularly relevant to South African cities given the distortions inherited from apartheid. Urban structure affects the productivity of city economies and the long-term financial viability of city governments. It also influences the efficiency of resource flows through the city and thereby the city's ecological footprint.

This chapter examines the current state of the built environment of the main cities in South Africa and reviews progress over the last decade. The built environment covers the form and spatial configuration of housing, transport, economic development and community infrastructure. The analysis focuses on the nine largest municipalities and makes comparisons with the rest of the country where possible.

A resilience perspective informs the analysis, which includes qualitative assessments of the nature and form of land development, covering issues of urban design, density and accessibility, and the extent to which physical investment is accompanied by economic and social development to create liveable and sustainable settlements. Resilience can be defined as the capacity of the built environment to adapt to challenging conditions, such as rapid population growth or rising energy costs. These areas should be able to accommodate change over time, creating continuity with positive features of the past, and responding to new social and market demands. Cities should manage urbanisation pressures in ways that take into account both historical injustices and future environmental challenges, such as flood risks. Infrastructure and buildings should be adaptable to developments in technology and the changing needs of households, firms and organisations. This is inherently difficult because of the fixed, durable character of physical structures and the substantial sunk costs in many infrastructure projects. Resilience also implies something about the process of producing the built environment. A prescriptive, top-down model of 'delivering' housing and services to passive local communities risks providing inappropriate, inflexible or unaffordable facilities.

In South Africa, progress in the built environment is usually measured in physical terms, such as the number of new houses built and the number of households provided with clean water, sanitation and electricity. These are clearly important given the large numbers of people lacking proper shelter or access to essential services. Protection from the elements, privacy and security are fundamental for human survival, dignity and social stability. The history of forced removals, shack clearances, sterile dormitory communities, mass hostels and inadequate services ('toilets in the veld'), helps to explain both the priority given to building houses after the end of apartheid and the 'slum eradication' language.

The landmark 1994 Botshabelo Accord, signed by the government, developers, trade unions, community organisations and financial institutions, says that everyone should have access to secure, serviced housing. According to Section 26 of the Constitution of South Africa, 'everyone has the right to have access to adequate housing', and the state must take reasonable measures to provide people with this. The 1997 Housing Act made it a government priority to provide people with fully serviced houses with freehold titles. Investing in housing also provides people with an asset that could appreciate in value and offer security in difficult times, while politicians have found the promise of delivering free formal houses to their constituents to be compelling.

Yet indicators of physical progress are partial and inadequate by themselves. They say nothing about whether the location and form of housing are appropriate, or whether the provision is in response to people's needs and sustainable in the longer term. The wider context of housing – including the intensity of land development, the quality of the surrounding



“The built environment covers the form and spatial configuration of housing, transport, economic development and community infrastructure.”

environment and facilities, and accessibility to jobs and amenities – is also critical to the creation of viable communities. These are crucial issues given the legacy of sprawling, racially divided cities, which are beyond the influence of housing policy alone. The Botshabelo Accord confirms that the government will strive to establish viable, integrated communities in areas that provide convenient access to economic opportunities, health, education and social amenities.

OVERVIEW OF THE BUILT ENVIRONMENT

Housing

The General Household Survey (GHS) is used to assess the basic attributes of the built environment, including the numbers of people who currently live in sub-standard housing and the progress made in addressing the housing backlog. The GHS is an annual face-to-face survey of a stratified random sample of approximately 30 000 households and is the most reliable source of up-to-date information. Consistent annual data is available between 2002 and 2009 to compare living conditions in different parts of the country. Unfortunately, the data is not available for individual municipalities because of the constrained sample size and sampling framework of the survey, which is designed for analysis at provincial rather than local level. Following extensive consultation, Statistics SA provided variables that allow special tabulations with the most detailed disaggregation that is statistically reliable.³ Data from the following geographical categories is available:

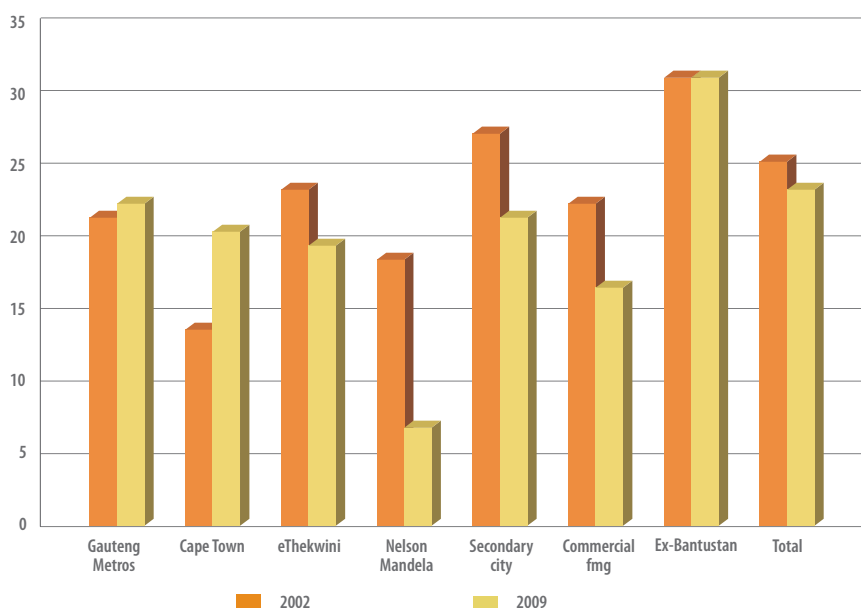
- the combined Gauteng metros (Johannesburg, Tshwane and Ekurhuleni)
- Cape Town
- eThekweni
- Nelson Mandela Bay
- secondary cities (including Mangaung, Buffalo City and Msunduzi together)
- commercial farming areas and
- former Bantustans.

Informal/traditional dwellings

As Figure 3.1 shows, in 2009 almost one in four households in South Africa lived in informal dwellings/shacks or traditional housing, amounting to approximately 3.3 million households, 1.9 million in informal dwellings and 1.4 million in traditional housing. This is a sizeable proportion, reflecting the scale of the task to provide everyone with a permanent residential structure. Other evidence from the GHS shows that residents of informal/traditional dwellings are more likely than other households to experience overcrowding, sub-standard housing conditions, poor access to services and vulnerability to hunger.⁴

“The wider context of housing – including the intensity of land development, the quality of the surrounding environment and facilities, and accessibility to jobs and amenities – is also critical to the creation of viable communities.”

The Built Environment *continued*



In 2009 there were 0.7 million households living in informal or traditional dwellings in the Gauteng metros, 0.2 million in Cape Town, 0.2 million in eThekweni, 0.02 million in Nelson Mandela Bay, and 0.5 million in the secondary cities. In commercial farming areas, the proportion of households in informal or traditional dwellings was considerably less, and the absolute number was only 0.3 million. In simple numerical terms, the scale of the challenge appears greater in the former Bantustans because of the high proportion of households in traditional housing.

Figure 3.1 Percentage of households living in informal dwellings

Sources: Stats SA, 2002; Stats SA, 2009⁵

Here, the numbers amounted to approximately 1.5 million households in 2009. Between 2002 and 2009 the proportion of informal or traditional dwellings in SA fell slightly (from 26% to 24% of all households), which seems modest considering the large scale house building that has occurred: the number of households in formal dwellings increased from 8.1 million to 10.4 million between these years. The actual number of households in informal housing also rose from 3.1 million to 3.4 million because of underlying population growth and a fall in the average household size. Despite the government's provision of subsidies for the building of approximately 2.8 million low-cost houses for nearly 11 million people over the period 1994–2009⁶, housing policy appears not to have kept pace with the growing level of need. It is also worth noting that the scale of government-subsidised house building has been nearly four times the level of private sector house building over this period.⁷ The national housing programme has been delivering approximately 220 000 housing opportunities per year, including 160 000 housing units and 60 000 serviced sites.⁸

The challenge of growth in number of households has been greatest in the major cities because of rural–urban migration. The proportion of households living in informal dwellings in all the metros combined increased from 21% in 2002 to 22% in 2009 despite the concentration of house building in these places and the absolute number of households rose from approximately 0.9 million to 1.1 million over this period. In the Gauteng metros, the number of households in informal dwellings rose from 0.5 million to 0.7 million and was accompanied by substantial growth in the number of informal settlements in the region. Meanwhile, 0.75 million low-cost Reconstruction and Development Programme (RDP) homes were built in Gauteng between 1994 and 2009.⁹

In Cape Town, the number of households in informal dwellings increased by almost 100 000. This was the steepest growth rate in the country, reflecting strong urbanisation. In eThekweni there appears to have been a decrease of about 25 000 households which may be linked partly to the city council's good record of housing delivery. In Nelson Mandela Bay, there appears to have been a sharper decrease, although this may be as a result of the small sample size. In the secondary cities and commercial farming areas – where slower population growth enabled better progress in meeting house-building backlogs – the proportion was reduced by about one quarter.

The average population density of South African cities is low compared to cities in other countries with similar (i.e. middle and low) average incomes (see Table 3.1). Low population density fragments communities and encourages road-based travel. Most of the poor are confined to overcrowded settlements on the periphery and forced to endure long and costly journeys to school and work. Badly located new housing worsens poverty and exclusion, trapping poor households in marginal areas with deficient services and a depreciating asset. Dispersed development also makes for less efficient use of natural resources, higher bulk infrastructure costs, and greater energy consumption and carbon emissions. A narrow focus on delivering formal housing has had the effect of sacrificing many attributes of housing 'quality'.¹ It has also left many people living in informal settlements and backyard shacks frustrated by the apparent slow process of providing serviced houses or upgrading current conditions.

Table 3.1 Density of world cities

High income countries	Density (population per square kilometre)	Middle and low income countries	Density (population per square kilometre)	South Africa	Density (population per square kilometre)
Asia	7 000	India	15 000	Cape Town	3 950
Japan	4 200	China	7 350	eThekweni	3 500
Western Europe	3 150	Russia	4 900	Tshwane	2 750
Canada	1 600	Rest of Asia	8 100	Johannesburg & Ekurhuleni	2 500
Australia	1 450	Africa	8 150	Nelson Mandela Bay	2 100
United States	1 100	South & Central America	6 250		
Average	3 100	Average	8 292	Average	2 960

Source: Derived from Demographia, 2009²

The built environment has been a contested policy matter over the last decade. There have been intense disputes surrounding the constitutional right to housing, the quantity and quality of new house building, the pace and form of service provision in poor communities, and the operation of the transport system. Criticisms levelled at the fragmented responsibilities of different spheres of government in relation to the built environment, have been compounded by departments working in silos and resulted in weak alignment between transport, housing and land management policies. These are some of the reasons why unified metropolitan authorities were created in 2000/01: to promote urban integration and give tangible meaning to the slogan 'one city, one tax base'.

This chapter shows that, in practice, there have been enormous difficulties in desegregating apartheid cities and creating economically vibrant and accessible settlements for all. Key elements for successful urban restructuring include higher-density housing development in well-located areas, major improvements in public transport to bring fragmented places together, and higher employment levels in townships and informal settlements. The imminent devolution of public transport and housing functions to cities gives hope for the future and offers the prospect of a more coherent approach to urban planning, development and management.

The Built Environment continued

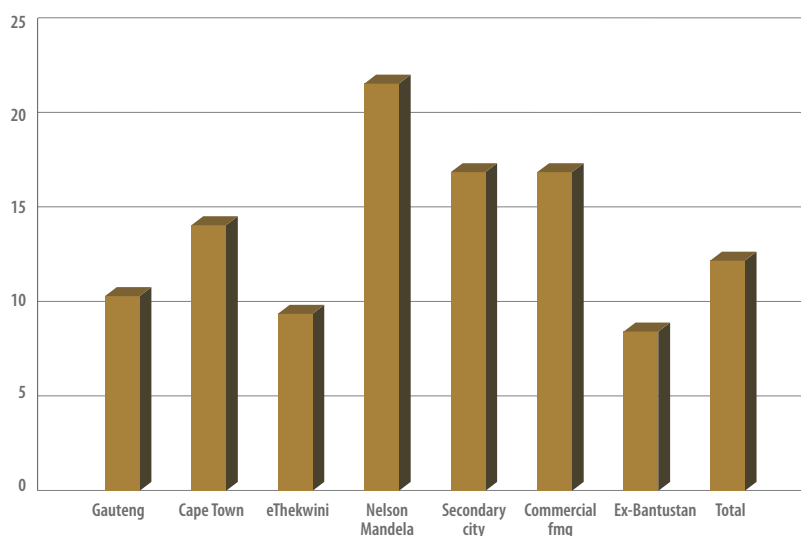


Figure 3.2 Percentage of households living in RDP or state-subsidised dwellings (2009)

Source: Stats SA, 2009 ¹⁰

RDP housing

The 2009 GHS also gives data on the proportion of households in each area that live in RDP or state-subsidised housing. Figure 3.2 shows that about one in nine households in the Gauteng metros live in such housing compared to one in six in Cape Town, one in ten in eThekweni and nearly one in five in the secondary cities and commercial farming areas. Put simply, house-building in the metros is over-shadowed by the sizeable, expanding population of these areas compared to the rest of the country. This is clearly where the greatest housing challenges lie.

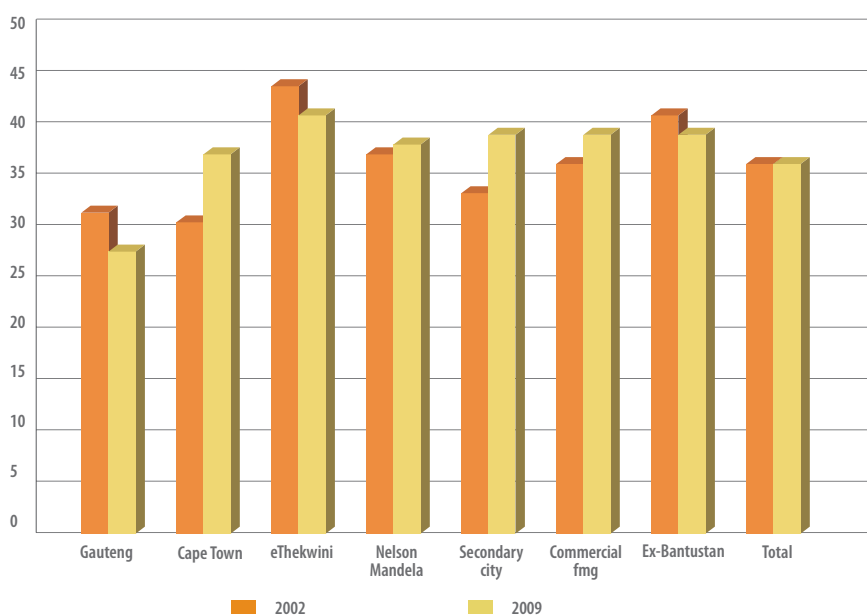


Figure 3.3 Percentage of 'dwellings with problems'

Sources: Stats SA, 2002; Stats SA, 2009 ¹¹

The 2002 and 2009 GHS permit some analysis of the state of housing, such as the condition of the walls and the roof of the main dwelling occupied by households. There are five categories of response – very weak, weak, needing minor repairs, good or very good. The first three categories are combined to create a single category of 'dwellings with problems'. Figure 3.3 shows that nearly two-fifths of all households in the country live in houses with some problems – surprisingly high.

“Households in the metros and secondary cities have better access to toilet facilities than those in the countryside.”

The proportion is lower in Gauteng metros, but higher everywhere else, suggesting that Gauteng housing stock is better than elsewhere. Furthermore, housing conditions appear to have improved in the Gauteng metros and eThekweni over the period 2002–2009, but deteriorated somewhat in Cape Town and the secondary cities. Further research is needed to verify and account for these disparities.

Housing conditions

Finally, information on the condition of dwellings can be extracted from the 2009 GHS specifically for RDP houses. Figure 3.4 shows that households living in Cape Town and Nelson Mandela Bay report much higher levels of dissatisfaction with the condition of their RDP houses than in Gauteng or elsewhere in the country. Further research is required to verify and explain these differences.

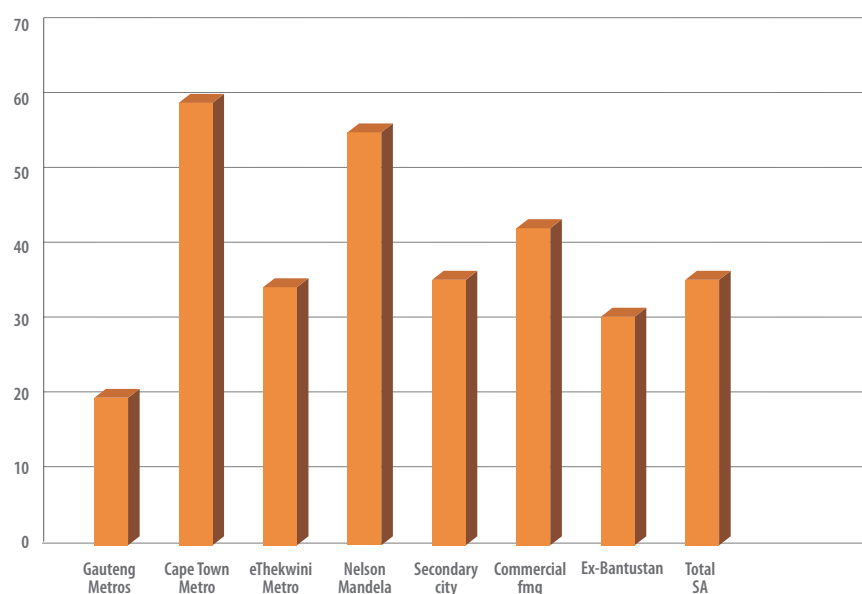


Figure 3.4 Percentage of RDP houses 'with problems' (2009)

Source: Stats SA, 2009¹²

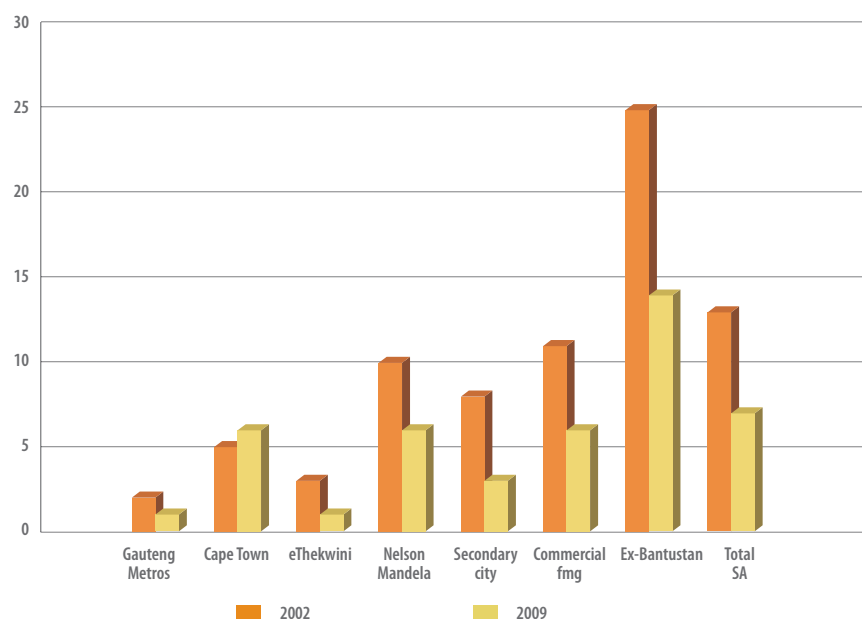


Figure 3.5 Percentage of households with bucket toilets or no access to toilet facilities

Sources: Stats, 2002; Stats SA, 2009¹³

Access to services

Toilet facilities

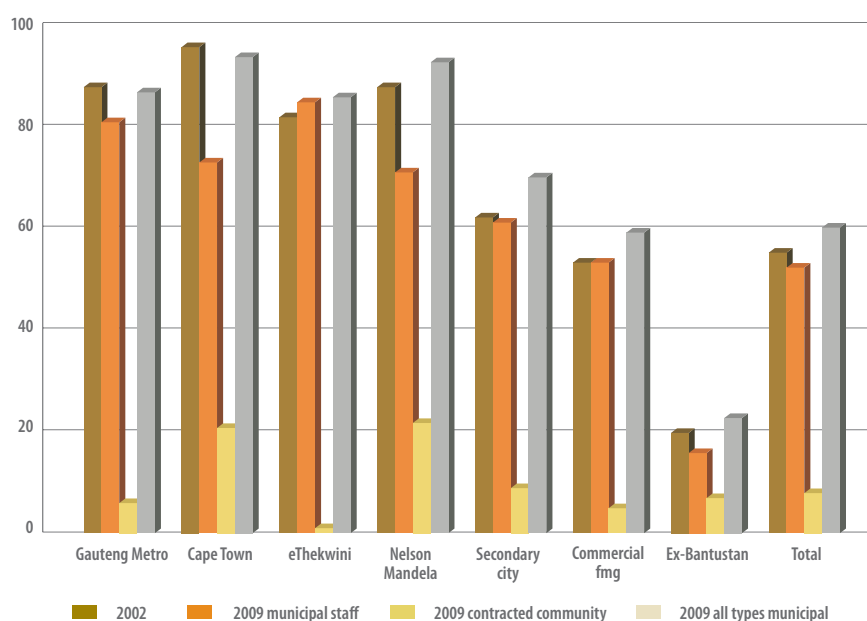
Sanitation is a basic need, important for hygiene as well as human dignity. The standard sanitation indicator is the number of households in each area with a bucket toilet or no access to toilet facilities. Figure 3.5 shows that households in the metros and secondary cities have better access to toilet facilities than those in the countryside.

Despite the number of informal settlements, few households in the cities have only rudimentary sanitation. In 2009 the proportion of households in the Gauteng metros and eThekweni with basic sanitation was only 1% compared to 6% in Cape Town and Nelson Mandela Bay, and 3% in the secondary cities. Over the period 2002–2009 there have been substantial improvements in sanitation throughout the country, and a general narrowing of the rural-urban gap. The metros had least scope for improvement because people there already had good access to toilet facilities. Among the cities, eThekweni and the secondary cities appear to have experienced the biggest improvements.

The Built Environment continued

Solid waste removal

The removal of solid waste is a second dimension of sanitation, important for health and safety reasons as well as environmental quality. Standards of refuse collection are generally higher in the cities than elsewhere because of efficiencies arising from the concentration of population and the legacy of uneven institutional capacity. There have also been improvements in most areas over the last decade, although not on the same scale as improvements in toilet facilities. The 2009 survey questions were slightly different from those in 2002 to allow for the growth of service delivery contracted to members of the community. Figure 3.6 shows that households in most parts of the country have better access to refuse collection than in 2002.



Households in the metros were better off to begin with and appear to have experienced limited further improvement in refuse removal, perhaps because of the pace of in-migration and the growth of informal settlements. Households in the former Bantustans seem to have particularly poor access to municipal refuse collection (they lacked municipalities under apartheid), but these areas, along with commercial farming areas and secondary cities, have seen some improvement over the last decade.

Figure 3.6 Percentage of households with refuse collection by municipality

Sources: Stats SA, 2002; Stats SA, 2009¹⁴



GHS 2009 also included questions about environmental problems in housing areas. Overall, nearly one in three respondents (32%) felt there were problems with littering and waste removal in their areas. The proportion was highest in the former Bantustans (40%), followed by the secondary cities (34%), commercial farming areas (31%) and metros (26%). This is broadly consistent with the pattern of responses on refuse collection. People seem to feel that the quality of the environment is higher in the metros than elsewhere, despite the concentration of informal settlements and people.

In addition, one in three households across the country (33%) said there were problems of land erosion, air pollution or water pollution in their areas. The proportion was highest in the former Bantustans and secondary cities (39%), followed by commercial farming areas (33%) and metros (27%), which is broadly consistent with the other environmental responses. It suggests that people in the metros are less dissatisfied with the quality of their environment than people are in other parts of the country.

Water

Piped water is a critical infrastructure requirement for people's health and everyday living. Figure 3.7 shows that people in the metros and secondary cities have better access to piped water than elsewhere.

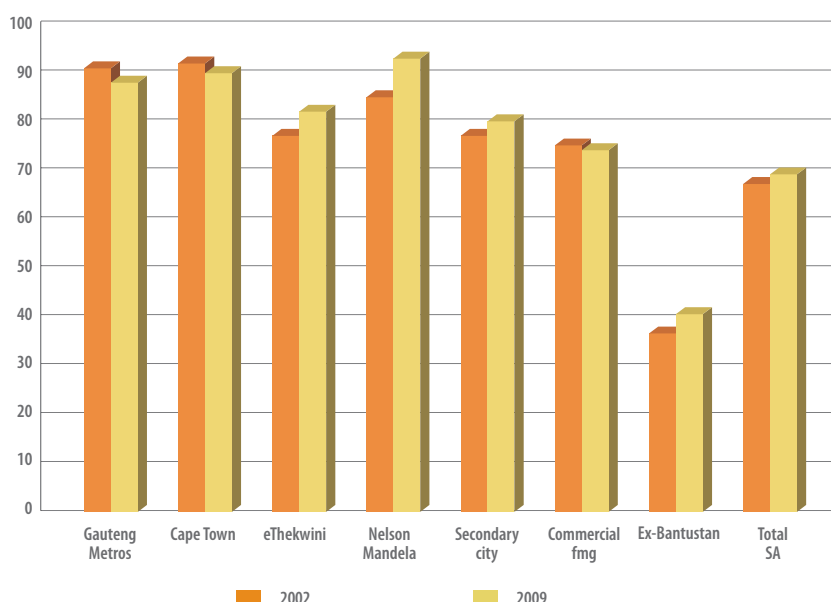


Figure 3.7 Percentage of households with access to piped water

Sources: Stats SA, 2002; Stats SA, 2009¹⁵

Just over one in ten metro households have no access to piped water (off or on-site) compared to nearly one in five in the secondary cities. eThekweni is somewhere in between, perhaps because it includes a sizeable rural catchment. The former Bantustans, where more than half of the population has no access to piped water, have a much bigger problem. In addition, the rate of improvement in access to piped water has been more limited than in sanitation improvement over the period 2002–2009. Nelson Mandela Bay, eThekweni and the former Bantustans appear to have had the biggest increase in access to piped water, with a slight decrease in the other metros, presumably because of rapid household growth. Consequently, the rural-urban gap has narrowed slightly.

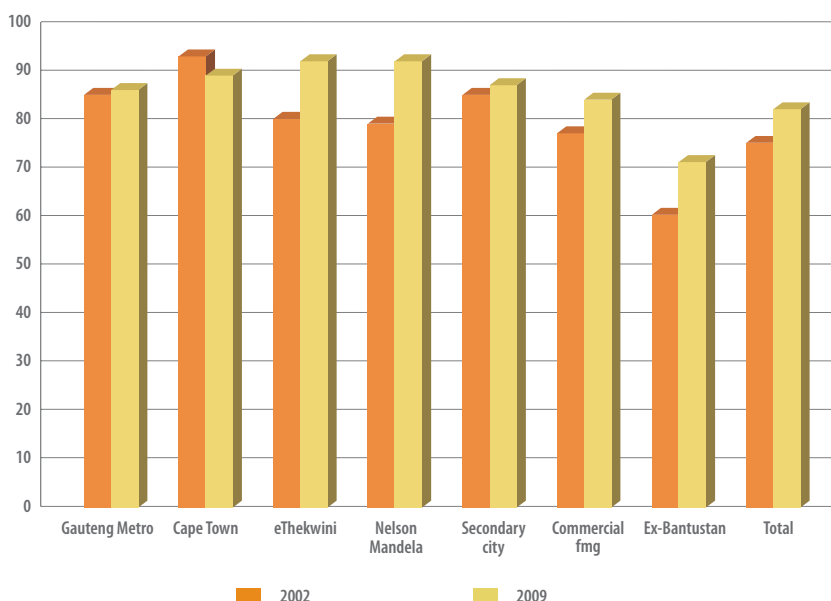
“Households in most parts of the country have better access to refuse collection than in 2002.”

The Built Environment *continued*

Some evidence is also available on the quality of water supply. The proportion of households who said that their water was not safe to drink, not clear, did not taste good, or smelt bad was 3% in the metros compared to 8% in the secondary cities, 8% in the commercial farming areas and 21% in the former Bantustans.

Energy and fuel

Electricity is much safer, cleaner and more reliable for cooking, heating and lighting than the alternatives of paraffin, wood, coal or candles. Figure 3.8 shows that the levels of access to electricity are generally much higher than they are to water.



People in the metros and secondary cities tend to have better access to electricity than elsewhere, especially in the former Bantustans. Over the period 2002–2009 there appear to have been fairly large improvements in access to electricity throughout the country, especially in the countryside, eThekweni and Nelson Mandela Bay, resulting in a narrower gap between rural and urban areas. There have also been some improvements to electricity availability in the Gauteng metros, unlike the case of water, waste collection and informal housing. It seems that the supply of electricity has been better able to keep pace with household growth and urbanisation than other basic services.

Figure 3.8 Percentage of households with mains electricity

Sources: Stats, 2002; Stats SA, 2009¹⁶

Wood and paraffin are alternative sources of fuel for cooking and heating, and are more widely used by poor households. In 2009, 9% of households in the metros used wood or paraffin compared to 17% in the secondary cities, 21% in the commercial farming areas and 48% in the former Bantustans.

Telecommunications

Access to a telephone through a landline or cell-phone is increasingly important for both economic purposes and social communication. The majority of households everywhere now have access to a cell-phone. As shown in Figure 3.9, Gauteng metros, at 90%, have the highest proportion of households with telephone availability.

“It seems that the supply of electricity has been better able to keep pace with household growth and urbanisation than other basic services.”

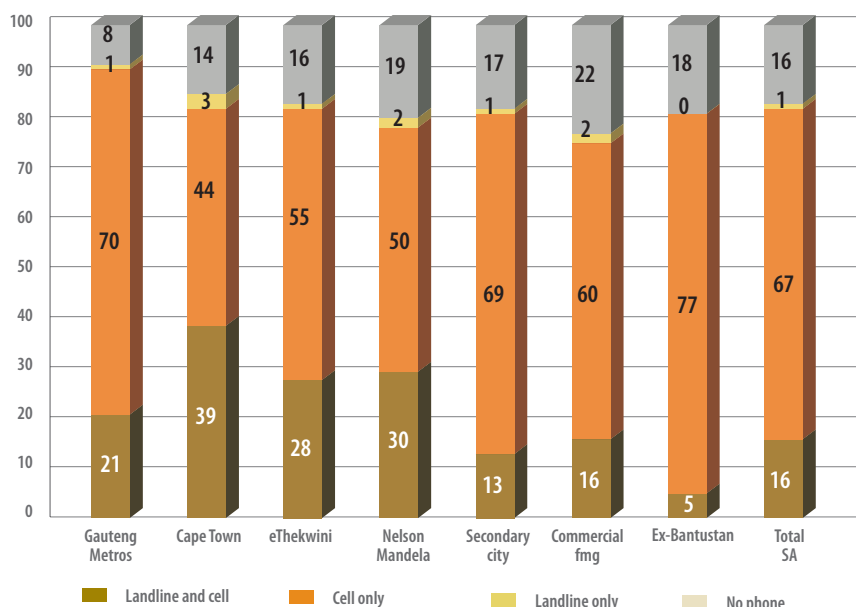


Figure 3.9 Percentage of households with access to a cellphone and/or landline in the home

Source: Stats SA, 2009¹⁷

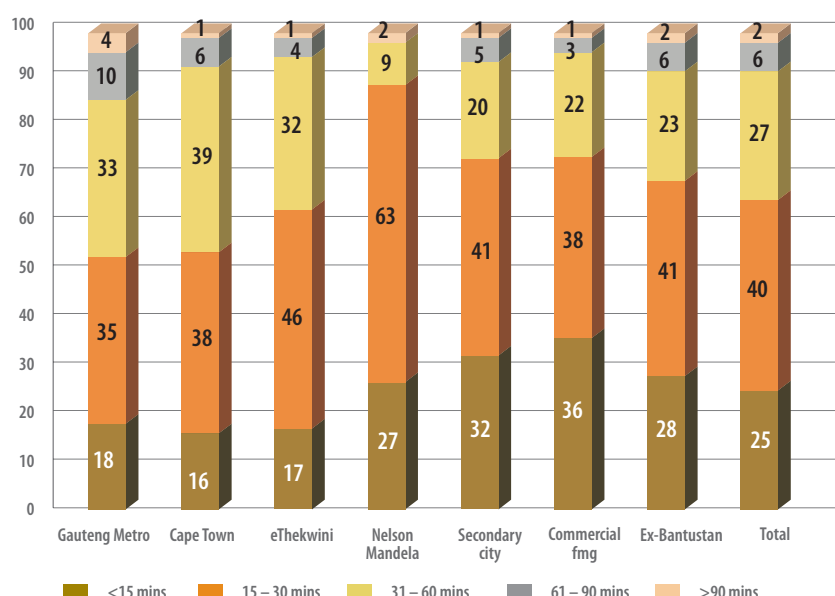
Nearly a quarter of households in South Africa (23%) have at least one member who uses the internet (at home, work, place of study or internet cafés). Internet use is highest in the Gauteng metros (39%), followed by the coastal metros (33%), secondary cities and commercial farming areas (both 19%), and former Bantustans (11%). These are very wide disparities, highlighting concerns that the majority of households throughout the country have no one who uses the internet.

Transport

One of the effects of South Africa's dispersed urban form is the high level of long-distance movement, especially for the poor who are forced to live in marginal locations. Public transport and minibus taxis are critical for people to access employment, educational facilities and social amenities. A key indicator is the amount of money people are forced to spend on commuting. Unfortunately, little reliable data is available to permit comparisons or to assess whether conditions have improved. However, GHS 2009 provides useful information on commute times (see Figure 3.10), which may be a useful substitute for commute cost data.



The Built Environment *continued*



As shown in Figure 3.10, between two-thirds and three-quarters of people in rural areas and smaller cities spend 30 minutes or less on getting to work, compared to just over half in the Gauteng metros and Cape Town. Transport is clearly a bigger burden for many metro residents. About one in seven people in Gauteng spends more than an hour travelling to work, a much higher proportion than elsewhere.

Figure 3.10 Time taken to travel to work

Source: Stats SA, 2009¹⁸

A study in Tshwane found the average trip length for car users to be about twice as high as in cities such as Moscow, London, Tokyo and Singapore and about three times as high for public transport users.¹⁹ The main reasons for this surprising finding appear to be the low density of the city and 'displaced urbanisation' as a result of apartheid planning.

Information on modes of travel is only available from the national transport survey, which was last conducted in 2003. Table 3.2 shows the various modes used by people commuting to work from different areas.

Table 3.2 Mode of transport used by commuters – by settlement type

Mode of transport used by commuters	Settlement type		
	Metropolitan (%)	Urban (%)	Rural (%)
Car	41.0	35.5	15.8
Minibus taxi	28.4	27.0	15.1
Bus	8.1	6.2	11.6
Train	11.2	1.7	0.5
Walk/cycle	9.1	25.6	52.6
Other	2.2	4.1	4.4

Source: South Africa, Department of Transport, 2004²⁰

Motor cars are the most important mode in metros and smaller urban areas, followed by minibus taxis. Despite being the only subsidised modes, buses or trains are used by only one in five metro commuters. In contrast, people in rural areas are much more likely to walk or cycle to work. Few metro commuters walk or cycle to work because of the long distances involved.

The national transport survey also queried the problems experienced by transport users. For almost half the respondents, the main problem was that public transport was either not available or too far away. Another third said that the most serious problem was road safety and bad driver behaviour. The biggest problem for one in five respondents was the cost of transport, which is of particular concern for low income workers. Trains were the cheapest major mode of transport, followed by buses and then taxis.²¹ The survey found that commuters in the poorest income bracket spent on average 35% of their earnings on commuting – a startling figure given that the 1996 Transport White Paper states commuters should spend no more than 10% of their disposable income on transport.

Looked at in more detail, the main sources of dissatisfaction with trains were overcrowding and exposure to crime. The main complaints about buses were the lack of facilities at bus stops, overcrowding and low off-peak frequencies. Taxis were criticised for being dangerous and unroadworthy, with limited facilities at ranks.²²

Summary

- Nearly one in four households in the metros is an informal dwelling, despite large-scale building of low-cost housing over the last 15 years.
- The number, and proportion, of households in informal dwellings has been rising in Cape Town and Gauteng because of urbanisation, but the proportion of households in informal housing in other parts of the country has reduced.
- The physical condition of dwellings appears to be better in Gauteng and eThekweni than in Cape Town, Nelson Mandela Bay or the secondary cities.
- Access to services (sanitation, waste collection, water, energy and fuel, telecommunications and transport) is much better in the cities than in the countryside. However, the situation has improved in most places, especially in rural areas, thereby narrowing the rural-urban gap.
- The quality of environment seems to be better in metros than in rural areas, although city residents have to endure longer journeys to work.

UNDERSTANDING THE SOCIO-SPATIAL INEQUALITIES

The low average residential density of South African cities is reasonably well known, but the wide variation in densities within each city is less well understood. It is more appropriate to characterise South African cities by their highly uneven distribution of population than their low average densities. For example, Cape Town's average population density is 39 persons per hectare, but this varies between 100 and 150 in the shack areas and between 4 and 12 in the former white suburbs.²³ This enormous imbalance is bound to present a bigger challenge for the effective functioning and management of the city than uniform low density, especially if the different neighbourhoods are set apart rather than contiguous. Uneven urban growth could be a source of both economic inefficiency and social injustice because it impedes labour and housing market interactions, transport networks and economical public service delivery.

On the one hand, middle and high-income households tend to live in low density suburbs that are costly to service with public transport and other infrastructures and are geared to car-based commuting. Major highway construction programmes between the 1960s and 1980s facilitated large-scale suburban expansion for car owners and contributed to the separation of work, leisure and home life. Elsewhere, the majority of households are confined to townships that are often overcrowded, have over-burdened schools and clinics and are vulnerable to the spread of shack fires and communicable diseases. Here, the pressure on land for housing complicates the provision of bulk infrastructure, community facilities, public spaces and formal economic activity. Many townships are poorly sited in relation to flood hazards and are remote from livelihood opportunities and amenities, compounding existing disadvantages.

The dispersed urban form of the apartheid city is often discussed as if all cities have the same basic spatial configuration. In fact, there are big differences in the spread of population within each city, reflecting factors such as their unique physical topographies, major transport axes, their socio-cultural composition, and the rate and character of economic and demographic growth. Historical policies are also important (for instance how strictly apartheid planning principles were applied), as is the influence of other planning ideas, such as modernism and the separation of land uses. Some cities have a reasonably compact built-up area, while others are much more fragmented and exploitative of space. Some have a single poor township located well beyond the periphery of the city that was imposed through forced removals or 'displaced urbanisation'. Others have a range of outlying settlements, some of which grew without formal approval as a result of in-migration, often since the demise of apartheid.

The Built Environment *continued*

A novel way to portray these differences is through three-dimensional density maps (Figures 3.11–3.18).²⁴ These maps convey a powerful sense of the socio-spatial inequalities of each city. The height of each column on the map represents the population density of that particular zone of the city. The area of the base (or 'footprint') of each column is the geographical extent of that zone and the volume of each column reflects the total number of people living in the zone. The colour coding reflects different density levels – green is very low whereas red is very high.²⁵

To interpret the patterns shown in each map in a systematic rather than a purely descriptive way, it is useful to identify the key features that distinguish one city from another. Table 3.3 provides a basic framework to pinpoint essential differences in spatial form.

Table 3.3 Basic differences in urban form framework

	Ordinary city	Apartheid city
Main built-up area of the city	Contiguous	Fractured
Variation in density levels across the city	Smooth gradient	Highly variable
Existence of large areas of low density in central locations	No	Yes
Existence of large areas of high density in peripheral locations	No	Yes
Tendency to separate or mix land uses	Mixed land uses	Separation of land uses
Distance between largest residential areas and main economic centres	Typically short	Typically long

Source: Ivan Turok, 2010

These distinctions also help to explain some of the strategic challenges facing each city, including where major investments in transport, housing and jobs might be made to reduce some of the most glaring inefficiencies and inequities, and what kind of transport system may be most appropriate in different situations. The framework is a considerable simplification of reality. It is presented as a contrast between the distortions of the archetypal apartheid city and other cities that have evolved in a more organic way, without the same degree or type of state control. Apartheid cities were shaped in the first instance by policies of strict social segregation and, secondly, by separating economic and residential zones to keep commercial and industrial activities out of non-white areas. This denied black townships the chance to develop an economic base and greatly increased the need to travel within cities.

A preliminary assessment of the spatial form of each of the nine cities follows, with some cursory observations about the challenges they pose. Further research is required to provide a more detailed analysis of the patterns that are revealed; to explain how they came about; to assess the impact and strength of contemporary spatial trends and dynamics (including the distribution of employment and how it is changing); and to explore the scope for alternative policy interventions to address the problems. First are presented the cities that have relatively straightforward spatial forms, followed by those with more complex and challenging issues; smaller cities are likely to have lower overall densities, to be less complex and to have shorter commuting distances.

Mangaung

Within the Mangaung metropolitan area, the city of Bloemfontein itself has a fairly conventional and compact urban form, without any extremely dense zones. The variation in density levels across the city also seems lower than in any of the other eight cities. The main residential areas are reasonably accessible to the central business district, which is the dominant employment centre. The most unusual feature of the wider Mangaung area is the large population concentration at Botshabelo (a former Bantustan) located about 50 km away. This large 'township' has a sizeable share of the metro population but lacks any significant economic base of its own, so people are forced to commute to Bloemfontein for work, for major consumer purchases and for high order private and public services, at considerable personal and financial cost. This is a classic example of displaced urbanisation and probably represents the single biggest long-term challenge for strategic planning in Mangaung.

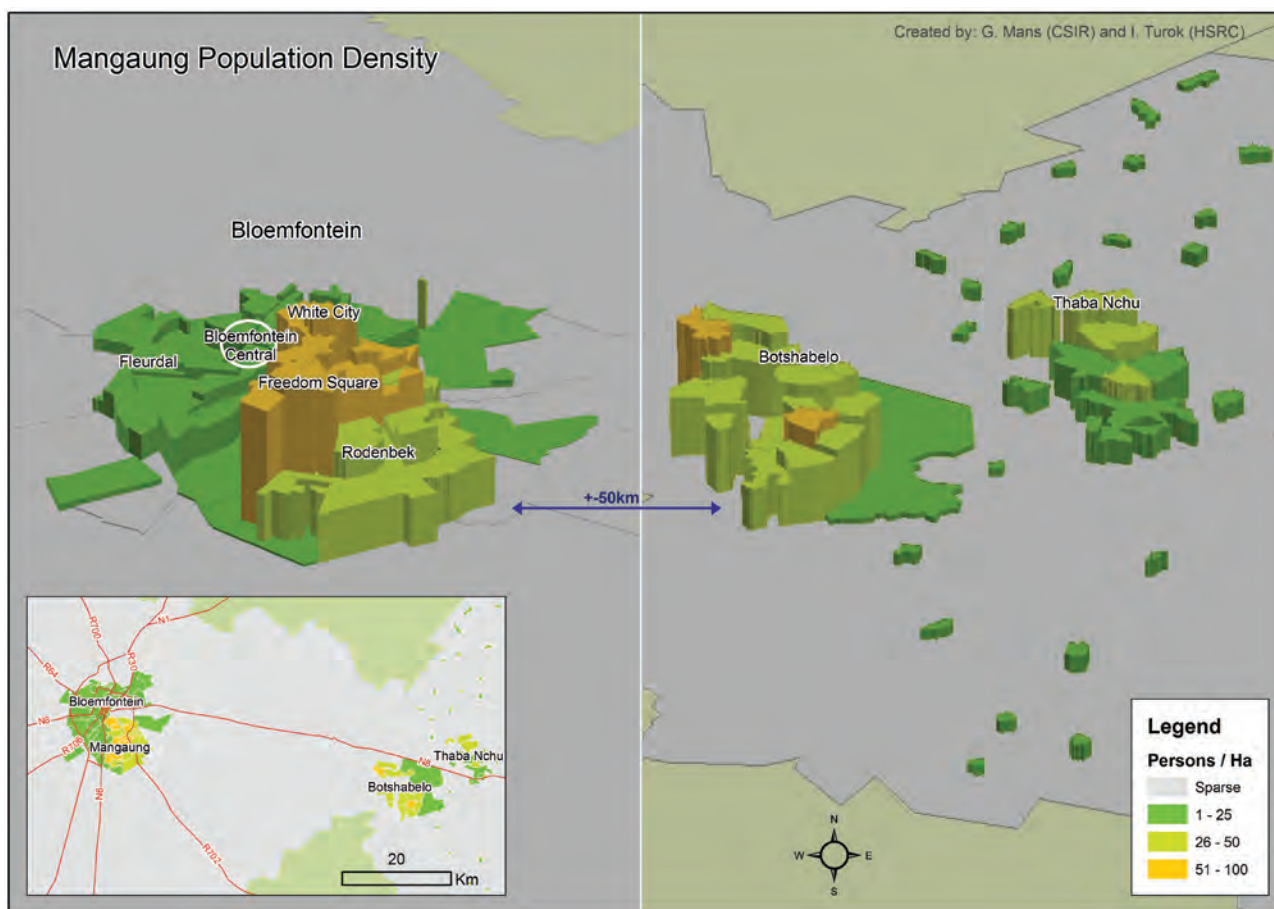


Figure 3.11 Population density of Mangaung

Source: Considerable thanks to Gerbrand Mans of CSIR for producing these maps

There may be scope for developing one or more economic and service nodes in Botshabelo because of its population size and distance from Bloemfontein. The large combined spending power of local residents, coupled with the available labour supply and potential savings in transport costs, offers advantages for local economic development. Over time, opportunities may also arise for further residential densification in and around the central city area of Bloemfontein, given the relatively low current density of some of these zones and the value households attach to proximity to centrally located jobs and amenities. In the meantime, efficient transport connections are vital for people from Botshabelo to access jobs and amenities in Bloemfontein.

“Apartheid cities were shaped in the first instance by policies of strict social segregation and, secondly, by separating economic and residential zones to keep commercial and industrial activities out of non-white areas.”

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Msunduzi

Msunduzi also has a relatively simple urban form with few extreme variations. There are essentially two large, contiguous, medium-density residential zones located on opposite sides of the central city, one of which has a small very dense informal settlement next to it (Happy Valley). These areas are not adjacent to the city centre, but are not very far away. Consequently, providing good transport connections to help integrate the largest neighbourhoods with the main employment centre is not as big a problem in Msunduzi as it is in some other cities.

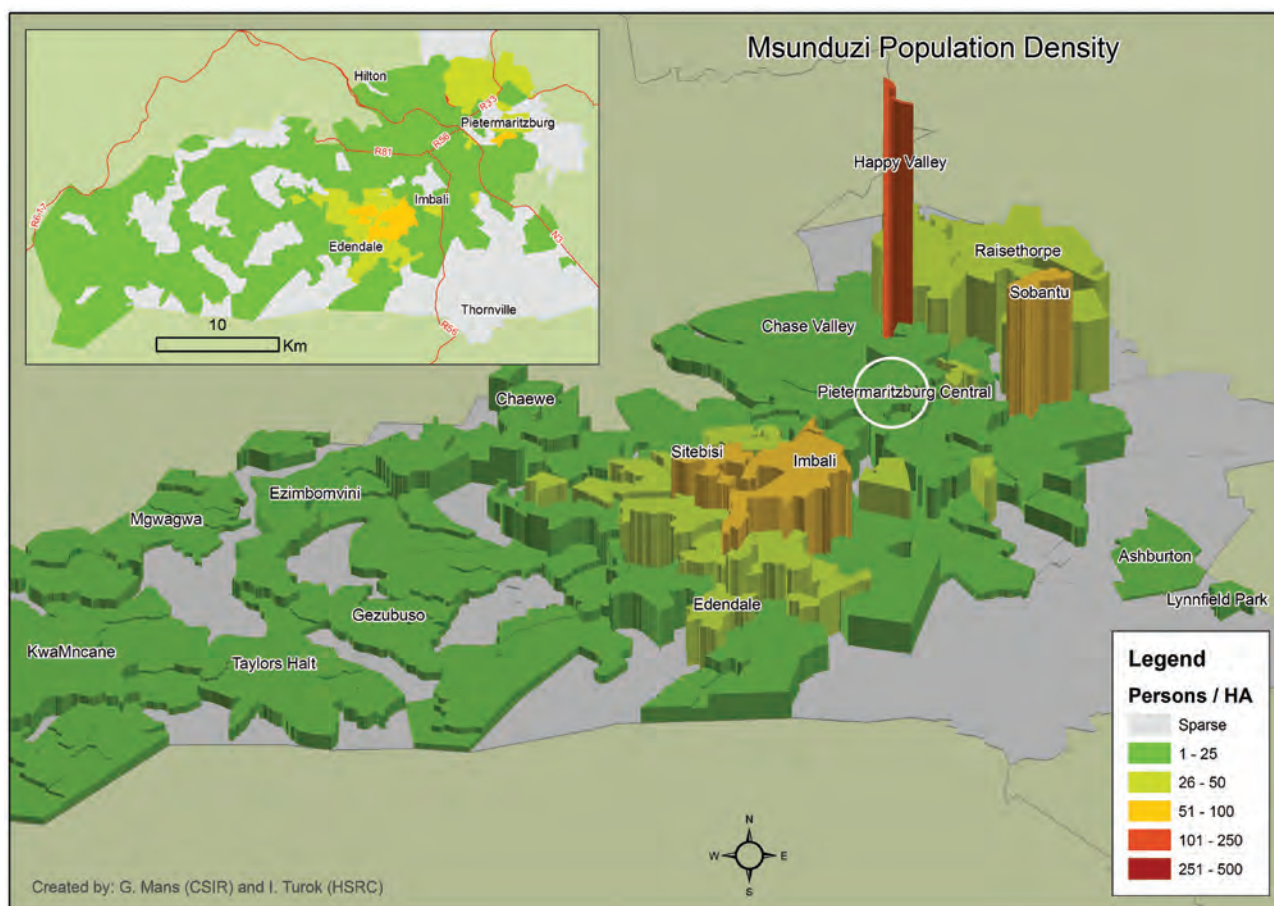


Figure 3.12 Population density of Msunduzi

A strategic planning issue in the Msunduzi metro is the very high residential density of Happy Valley, which is reasonably well located. Thus, in due course there may be opportunities to develop multi-storey formal housing in the area, provided a suitable funding model can be developed. More generally, considerable scope appears to exist for residential densification in and around the city centre, which would bring people closer to work and amenities and make city centre services more profitable by increasing the consumer base. There may also be scope to develop new economic nodes within the present residential zones of medium density because of their population size and distance from the city centre.

Nelson Mandela Bay

Nelson Mandela Bay has a less coherent form. Several disconnected settlements (some reasonably large and densely populated) are found a long way from the main built-up area. The outer part of the main population concentration within the metro area (Motherwell) is quite far from the city centre, but reasonably close to the main industrial areas to the north of the city. The New Brighton and Kwazakhele townships are closer to the city centre, but still some 10 km away.

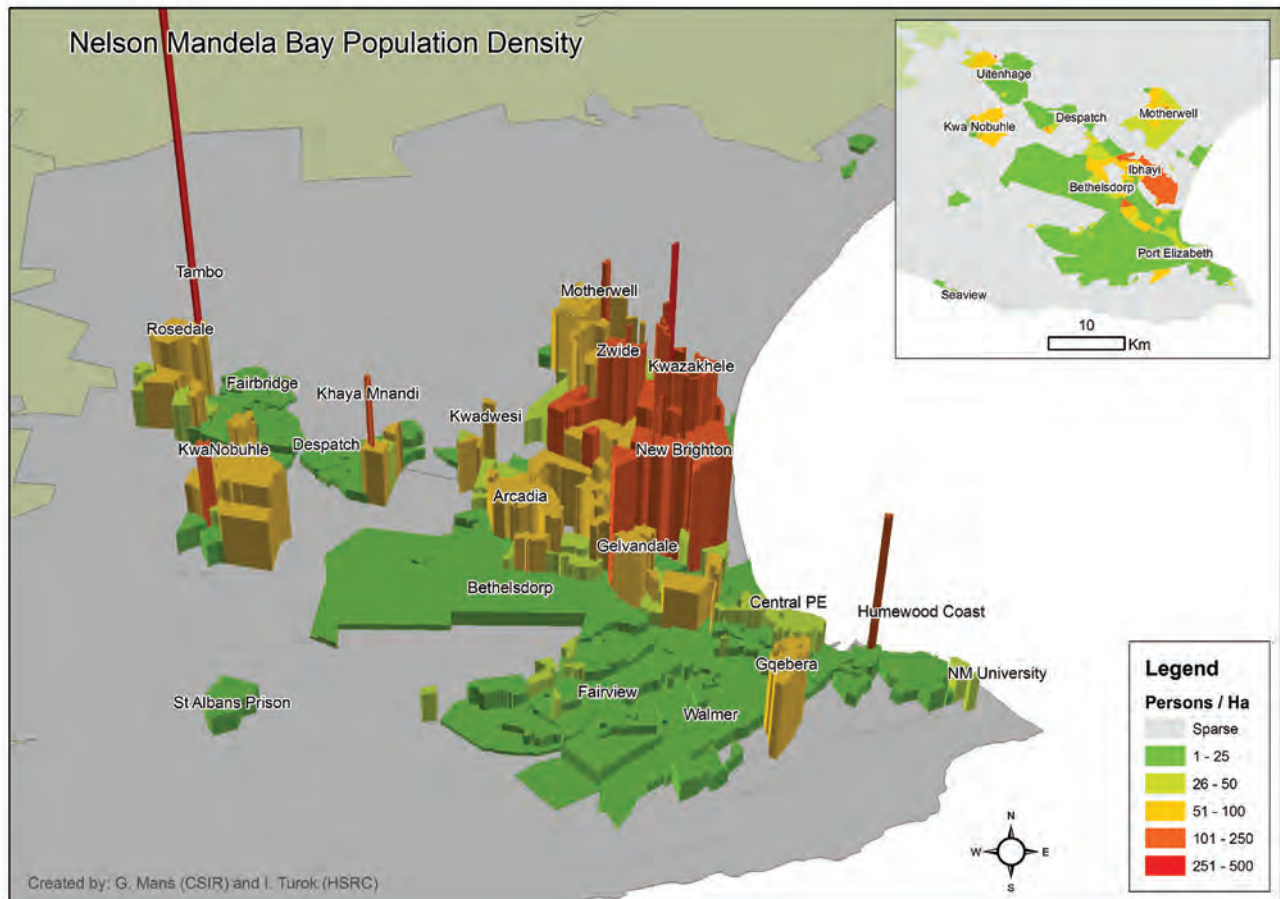


Figure 3.13 Population density of Nelson Mandela Bay

The central city of Port Elizabeth has a very low residential density, suggesting considerable scope for redevelopment and infill. This would bring people closer to economic activity and increase the population catchment of the city centre, increasing the demand for its facilities. Meanwhile, efficient transport connections are vital to link township residents in the north and north west with jobs and facilities in central Port Elizabeth.

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Buffalo City

Buffalo City is similar in some respects to Nelson Mandela Bay, comprising a reasonably compact, contiguous built-up area and a few disconnected settlements further afield. The residential density of the central city is also very low. However, there are at least two important differences, both of which appear to represent acute strategic challenges for the metro. First, there is a particularly high population density in Mdantsane, some 20 km from the city centre, with no significant local economy. Second, the residential densities in and around Duncan Village are extremely high. There are also some smaller, very remote settlements in the hinterland, such as King Williams Town and Dimbaza.

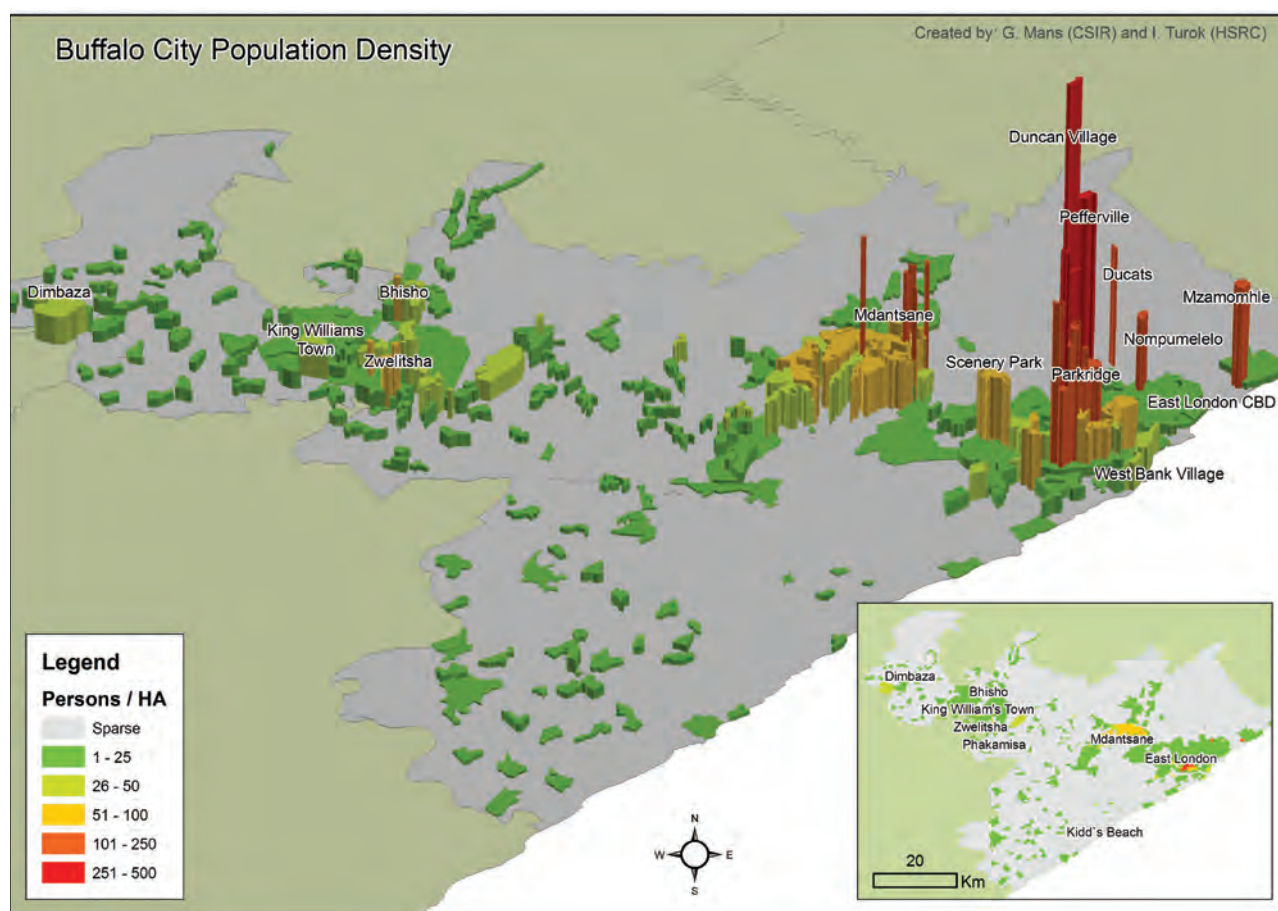


Figure 3.14 Population density of Buffalo City

Efficient high-capacity transport connections between Mdantsane and East London appear essential and feasible given the size of the township and the moderate distance involved. Mdantsane may also have the potential to develop a stronger economic base of its own in view of its population size and its distance from central East London. Given a profitable financial formula, the area in and around Duncan Village, with its reasonably central location, presents opportunities for the development of multi-storey formal housing.

Cape Town

Cape Town has an unusually skewed form, with the bulk of the population – but very few jobs – concentrated in the south east, while the relatively sparsely populated central city and inner suburbs is where the most employment opportunities are found.²⁶ Compared with the four cities discussed previously, Cape Town has many more very dense, informal settlements which are scattered around the periphery (the red spikes in Figure 15) and function as entry points to the city for poor rural migrants. There are no well-located informal settlements around the central city or in the inner suburbs. One disconnected settlement, well beyond the urban periphery, is Atlantis, although its share of the metro population is smaller than in many of the other cities. Mitchells Plain is the largest formal township, originally built for 'coloureds' in the 1970s and 1980s and now full of backyard shacks because of housing shortages. Khayelitsha was declared a township for 'Africans' in the 1980s and has grown rapidly from scratch, despite its poor access to opportunities. The population of the former 'white' southern and northern suburbs combined is less than that of either Mitchells Plain or Khayelitsha.

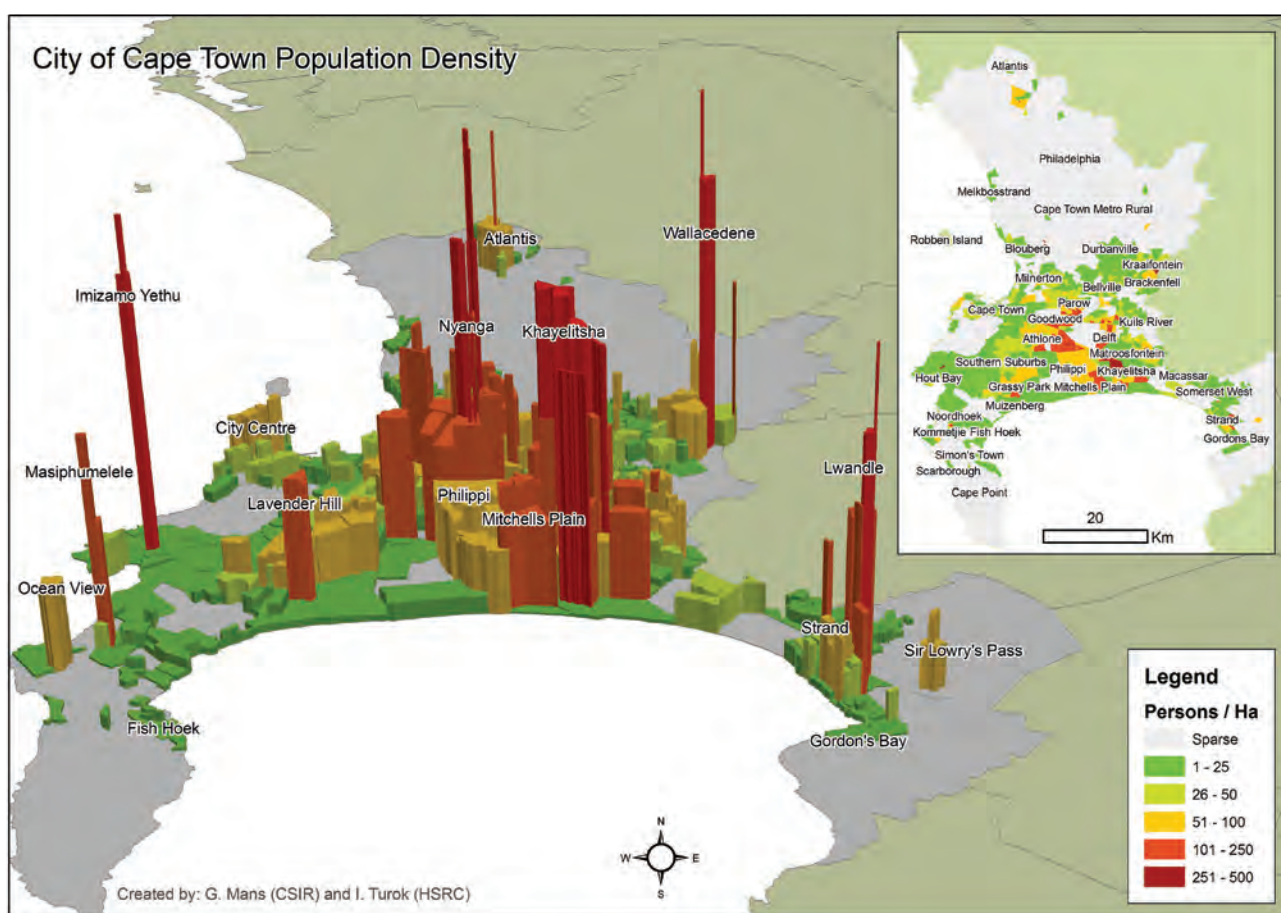


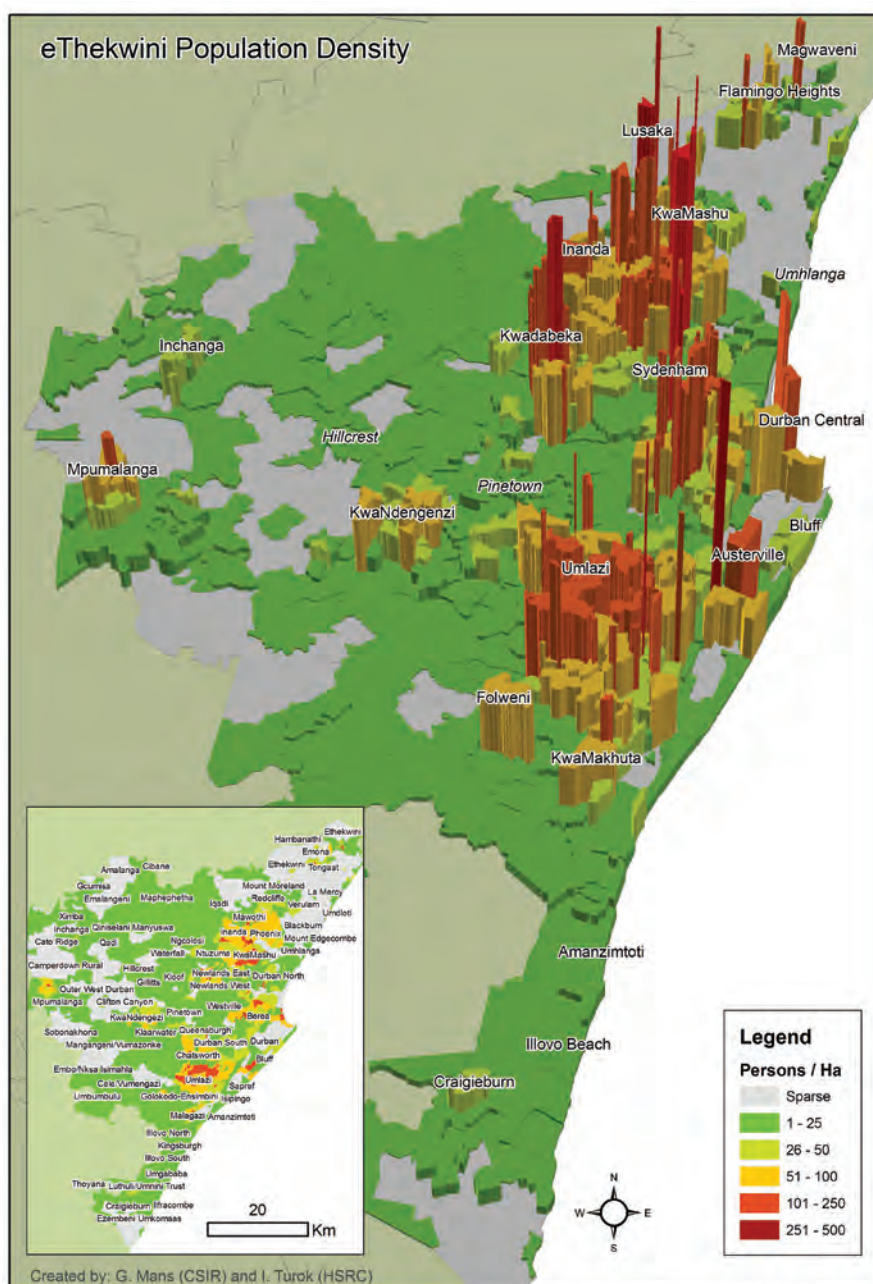
Figure 3.15 Population density of the City of Cape Town

High capacity transport connections, between the Cape Flats and work opportunities in the central city and northern suburbs, are fundamental to the city's functionality. There is also considerable scope for more intense residential development in and around the central city and inner suburbs, which would reduce the transport costs for commuters and job seekers and increase the usage of city centre amenities.²⁷ Promoting economic development in the south east is another important long-term objective in the interests of overall urban balance and accessibility, and to moderate the scale of commuting along the congested north west–south east axis of the city.

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eThekweni

eThekweni appears to have a more fragmented spatial form, with no single dominant contiguous area of medium-high population density. Instead there are three large, separate residential zones of medium-high density: the central city and inner western suburbs; the northern townships, including KwaMashu, Inanda and Lusaka; and the south-western group of townships around Umlazi. Each of these zones includes localised areas with particularly high density. The rest of the metro seems to consist of low-density suburban sprawl and traditional rural areas. There are also about eight quite separate outlying, moderately sized settlements of medium density, for example Flamingo Heights in the north and KwaNdengezi in the south west. eThekweni's fragmented character partly reflects the regional topography of undulating hills and valleys which complicate coherent physical development.



Future challenges include building up the local economic base of the northern and south-western groups of townships identified above. Strengthening the transport connections between the main settlements and emerging employment centres such as Umhlanga and the new King Shaka airport need to be addressed. There may also be scope for residential densification around the central city and in the inner suburbs which would improve access to opportunities and boost demand for city centre services.

Figure 3.16 Population density of eThekweni

Gauteng

The three metros of Johannesburg, Tshwane and Ekurhuleni are combined in Figures 3.17 and 3.18 because of their proximity and interdependence. The maps convey the overall impression of an exceptionally fragmented settlement pattern. Gauteng bears little resemblance to an integrated metropolitan area or a monocentric city-region. Like eThekweni, no single contiguous area of medium-high population density dominates.

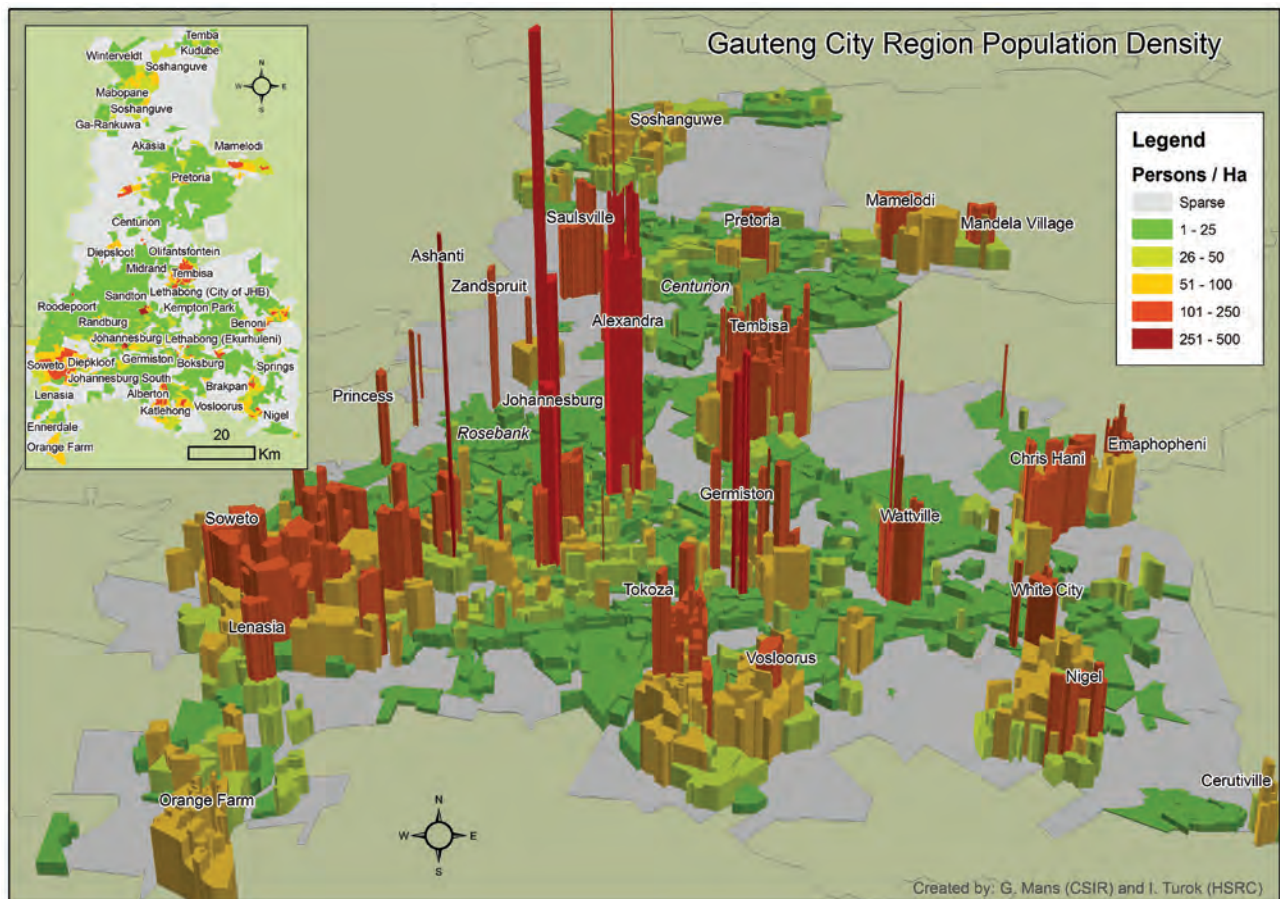


Figure 3.17 South-north perspective of the population density of the metropolitan areas of Johannesburg, Tshwane and Ekurhuleni

The south-north perspective shown in Figure 3.17 reveals the sheer scale and density of Soweto's population and its separation from central Johannesburg. By comparison, Midrand, Sandton and Rosebank, are insignificant in residential terms. Population densities in Alexandra and parts of Johannesburg city centre are exceptionally high.

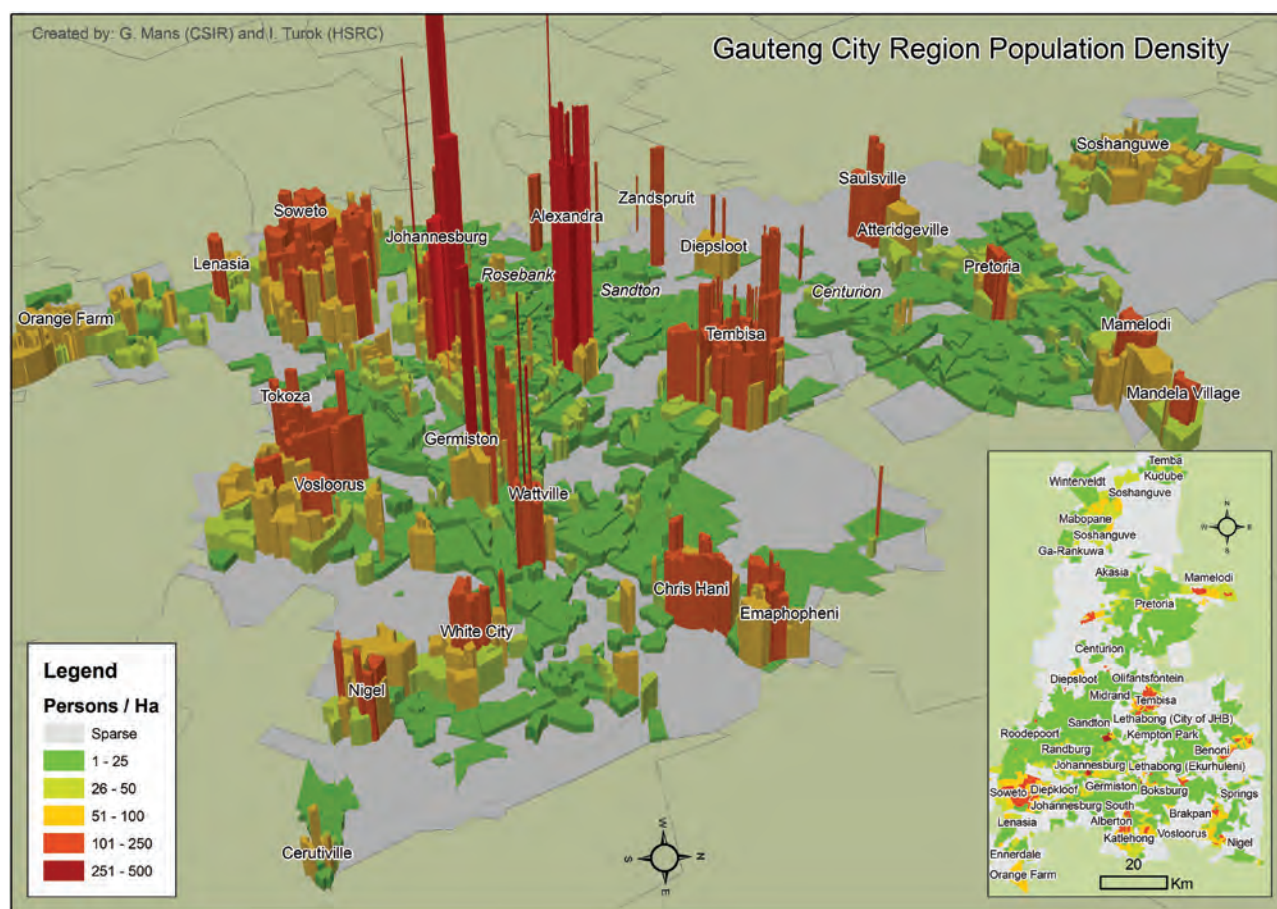


Figure 3.18 East-west perspective of the population density of the metropolitan areas of Johannesburg, Tshwane and Ekurhuleni

Figure 3.18 shows an east-west perspective to expose the structure of Ekurhuleni and Tshwane more clearly. It illustrates the scale and density of Tembisa and the long distances between Pretoria and its two major displaced townships, Soshanguwe and Mamelodi. The isolation of Orange Farm in the south is also all too apparent.

One of the reasons for Gauteng developing a dispersed form was the lack of immediate constraints on urban growth when the mining industry was expanding rapidly. This expansion also happened in a context of large, sparsely populated and generally infertile tracts of land.²⁸ The contemporary splintered structure of Gauteng, and the separation between residential communities and employment nodes, imposes high levels of movement across the region.

There is a compelling case for efficient transport connections between the main settlements (which tend to be in the south) and the areas of employment growth (which tend to be in the north). Improved accessibility and connectivity are crucial to realising the region's potential agglomeration economies, including enabling the labour market to function more efficiently and reducing the costs of congestion. Over time, the spatial form may also be made more coherent and functional through carefully targeted residential development, infilling and densification.

Some of the undeveloped parts of Johannesburg and Ekurhuleni visible on the map are former mining areas that are unsuitable for housing, but scope for densification exists in other well-located areas. For example the broad Johannesburg–Pretoria transport corridor and the inner suburbs of Pretoria. Finally, the major outlying settlements in places such as Tokoza, Vosloorus, Nigel, Wattville, Chris Hani, Tembisa, Mamelodi, Saulsville, Soshanguwe and Soweto may be capable of supporting stronger local economies given their scale and distance from established economic centres.

Summary

- Greater integration of settlements within each metropolitan area is important to improve functional efficiency and fairness. Fragmented cities need to be knitted together more effectively through strategic investments in transport, housing and economic development. The existence of metro authorities with broad boundaries should facilitate more coherent spatial development, provided there is sufficient political will and backing from other parts of government.
- All nine central cities have scope for residential densification. Bringing more people back into well-located, central areas would have important environmental, social and economic benefits. It might require a combination of state-sponsored re-development, incentives and controls on private house builders, more creativity and innovation on the part of developers and planners, and fiscal measures to encourage households to make more intense use of central city land and property.
- Investments in transport should be planned in conjunction with housing policies and other land-use decisions, in order to maximise the economic and social returns from these investments, consolidate patterns of urban development and ensure better connected and more durable human settlements. Different transport solutions are likely to be appropriate for different urban structures.
- Economic development is important in townships and informal settlements, requiring bolder, more determined policies. This makes economic sense given the large, expanding populations and spending power, the ready supply of labour, and the savings in transport costs when work is brought closer to the workers.
- Further research is needed to move beyond a static analysis of patterns to an understanding of the flows of people and resources and the resulting dynamics of physical, demographic and economic change within each city.

TACKLING THE NEED FOR WELL-LOCATED HOUSING

When looking at the nature and location of state-sponsored housing, the first key point is that the rate of house building in major cities has not kept pace with household growth and in-migration, which has resulted in the spread of informal settlements and backyard shacks, especially in Gauteng and Cape Town. The government estimates that there are 2700 informal settlements across the country, consisting of about 1.2 million households, with another 0.6 million households in backyard shacks. Most of the shack areas are in and around the cities. This figure is not completely reliable because there is no consistent definition of an informal settlement. There also appears to be insufficient recognition of diversity in these areas, and little understanding that they may perform different functions within the urban housing/labour market system. Settlements vary in their social composition, partly because they can serve different purposes. This depends for example, on their location in relation to jobs, or the relative availability of houses, schools, health facilities or other amenities.

For migrant populations, some informal settlements represent important reception areas because of their low barriers to entry into the urban labour market— an accessible location to search for employment and a relatively low cost of living.²⁹ These attributes are vital to support the livelihoods of poor people when there is a serious shortage of paid work and a high risk of not finding a steady job for many months. Areas that perform well in this respect should be treated as useful stepping stones or ‘escalator areas’.³⁰ They enable in-migrants to gain a foothold in the job market to accumulate skills and contacts, obtain higher incomes and, in due course, move on to better quality housing. A sensitive approach from government is important to provide people with some basic security, household services and job-search support at minimum cost, while they strive to improve their labour market position. A policy of slum eradication or replacement by formal housing in these areas is unhelpful, as most of those affected would probably not qualify for state housing, and they would in any case struggle to afford the accompanying running costs of electricity and water charges. Also unable to afford to rent upgraded housing, they would be displaced by better-off households and forced to move to the cheapest shack areas on the periphery.³¹

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The government has recently acknowledged that housing policy has generally not kept pace with household growth and urbanisation, partly because it does not have the capacity or resources to provide everyone with a fully serviced house with freehold title. This has resulted in a change from a 'bricks and mortar' approach to something broader, and is reflected in the 2009 renaming of the Department of Housing to the Department of Human Settlements. In his parliamentary speech on the budget vote in April 2010, the minister of human settlements³² stated:

[T]here is a need for realism as we go forward ... the housing backlog has grown in leaps and bounds from 1.5-million in 1994 and now stands at approximately 2.1-million. That means approximately 12-million South Africans are still in need of better shelter. We have, therefore, hardly moved in just breaking the backlog, never mind the numbers associated with population growth. As a reflection of the increased demand, the number of informal settlements has ballooned to more than 2700. This partly explains the phenomenon of service delivery protests ... [W]e are currently only able to clear the housing backlog at a rate of ten percent per annum. With the current pace of delivery and the resources at our disposal, and mindful of continued economic and population growth and the rapid pace of urbanisation, it could take us decades to break the backlog. In real terms, as a country, we have hardly moved.

President Zuma³³ also acknowledged the problem a month later when he called for a genuine paradigm shift from housing to human settlements, at a meeting of the President's Co-ordinating Council of the three spheres of government, convened specially for this purpose:

The concept of human settlements is not just about building houses. We have to change apartheid spatial patterns and ensure that low income households in rural or urban areas have easy access to economic centres. They must also have access to social amenities and key services such as water, electricity, recreational facilities, schools, clinics and a host of others.

Outcome 8 of the Delivery Agreement made with the Presidency in 2010³⁴ committed the Department of Human Settlements to the following targets over the four-year period to 2014:

- upgrading 400 000 households in well-located informal settlements (a third of the national total) with access to basic services and secure tenure.
- delivering 80 000 affordable rented housing units.
- improving access to housing finance (mortgages) for 600 000 households earning between R3,500 and R12,800 per month.
- setting aside at least 6250 hectares of well-located public land for low income and affordable housing.

The Delivery Agreement³⁵ also stated:

The current housing development approach with a focus on the provision of state subsidised houses will not be able to meet the current and future backlog and there are questions related to its financial sustainability. We need to diversify our approach to include alternative development and delivery strategies, methodologies and products including upgrading of informal settlements, increasing rental stock, and promoting and improving access to housing opportunities in the gap market.

In addition, the department is committed to speeding up the accreditation of selected municipalities to manage the housing function. This should give them a bigger budget and the discretion to promote a wider range of housing solutions, including the upgrading of informal settlements. We discuss this important policy development below.

Policy developments

The Outcome 8 target to upgrade 400 000 households in well-located settlements is a step forward in some respects, although ambiguity has subsequently emerged about whether this means incremental upgrading, site and services, or formal housing. It seems particularly important to avoid: excluding or displacing the poor by (unintentionally) raising the local cost of living and price of housing beyond their capabilities, complicating the process for migrants to enter the urban system; or locking people into areas that may be their initial point of access to the city, rather than their ultimate residential preference, by tying them to a fixed asset (a house) that they cannot readily dispose of or rent out when their circumstances change (because of rules governing subsidy housing).

The emphasis should first be on giving new movers to the city (and the poor in general) as much flexibility, choice and ease of entry as possible to match their overall accommodation/service/location needs and affordability. This may be best done by recognising the genuine diversity among informal settlements and allowing state actions to be driven by the particular concerns of each local community rather than by housing targets established from above. Over time, and given sufficient information and the freedom to move, households will naturally tend to sort themselves into residential

areas that meet their various needs most closely, depending on skills, age, family characteristics, cultural identities and so on. As people's skills and work experience increase, their job security and incomes should rise, and they should have the opportunity to move up the housing ladder and into areas that match their improved circumstances better. The state has an important role to play in facilitating this vital process of social mobility by improving the operation of the lower end of the housing market, simplifying regulatory procedures and reducing transaction costs.

Limited progress has been made in delivering a wider spectrum of housing types in the so-called affordable housing segment between the formal subsidy housing ('RDP houses') and unsubsidised private housing, including social rented housing, gap housing and medium density housing. According to Department of Human Settlements estimates, residents of about one in six households (17%) in inadequate housing earn between R3,500 and R12,800 per month and so are excluded from the fully subsidised as well as the mortgage-financed housing market. The weakness in this segment of the market is believed to be the result of several inter-related problems occurring along the pipeline of the residential development process:

- an inadequate supply of suitable, well-located land
- the slow regulatory process of approving new residential areas ('townships') and transferring title deeds to owners
- delays and costs of providing bulk infrastructure and installing new services
- a mismatch between both the housing and the mortgages that people can afford and products that are profitable for developers and financiers to supply, partly because of rising construction costs and high administrative costs
- distortions introduced by the current standards of fully subsidised housing.

Johannesburg has done more to promote social rented housing and gap housing than other cities. The Department of Human Settlement's new affordable housing target to work with financial institutions in providing access to mortgages for 600 000 households is a good start, but a great deal more needs to be done to create a dynamic and integrated housing market with upward mobility and progression as people's aspirations and economic circumstances improve. Greater housing mobility within urban housing markets would make more opportunities available at the bottom of the housing ladder for new entrants to the city as well as for new households being formed.

The majority of new formal subsidy housing has been built on the outskirts of cities, far from jobs and social amenities. This has reduced the value of the housing as an asset to the poor, instead of enabling them to launch home-based enterprises or to transfer ownership to someone else and move on when their prospects improve. An outlying location may be less of a problem for households outside of the labour market, including older people or extended families, whose prime concerns may be housing or schools rather than jobs.³⁶

Development at city peripheries

Subsidised housing is located at the periphery for various reasons. One of the most important is the relatively high cost of well-located urban land. The government housing subsidy makes little allowance for the higher price of urban land. Therefore, municipalities and provinces are obliged to trade off the cost of the structure against the cost of land and generally end up minimising land costs to provide better housing. In addition, greenfield development tends to be quicker and cheaper to organise than brownfield (on previously developed sites) or greyfield (property requiring redevelopment or refurbishment), at least in terms of the short-term costs. Greenfield sites do not suffer from problems of physical contamination, derelict structures or fragmented ownership. Nevertheless, the relatively low density at which new RDP housing has been built has inhibited the provision of public transport and other services.

The majority of new middle and high-income private housing provided through the market has also been built on the periphery of cities, often in security complexes. This has imposed high costs on public infrastructure, roads, traffic congestion and the natural environment. Poor policy and budget alignment between municipal or provincial departments has sometimes meant that new housing developments (especially lower-cost projects) have lacked key components of infrastructure, such as schools or stormwater drainage. For example, major flooding along the Klip River in Soweto in February 2009 was attributed partly to inadequate drainage systems installed in a new housing development near Roodepoort.

Spatial planning and land-use management

Spatial planning and land-use management systems have proved ineffectual at steering the formal property market in more sustainable and inclusive directions. The volume house building industry, including financiers and developers, is geared to suburban expansion on simpler greenfield sites, reinforcing the aspirations of middle- and high-income

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homeowners. Densification remains wishful thinking in the absence of stronger powers, resources and political commitment on the part of city governments. Densification needs to be conceived as part of a broader effort to re-orientate and encourage innovation in the private property sector. A useful starting point would be stronger city-wide plans supporting 'smart growth' (higher densities and mixed uses) in key locations across the city to limit sprawl and to reinforce the strategic position of economic nodes with a hands-on role for the public sector. Nothing less than a paradigm shift may be required for urban designers, architects, engineers, financiers and developers to accept the primacy of brownfield and greyfield development and to adapt their methods accordingly.

In addition, commercial property developments tend to wield more economic power than residential buildings. Retail, office and business park schemes are many times more profitable than housing because of the revenue generated from occupiers. Developers of such property can outbid housing developers when the most accessible land is for sale because there is a premium on accessibility: to attract customers, for ease of commuting for workers, and for ease of access to suppliers and collaborators. Accessible sites may be defined in relation to the transport network (road and rail), and places with high levels of accessibility are not restricted to city centres. All South African cities have witnessed the growth of decentralised nodes of commercial activity, prompted by 'push' factors such as crime and grime in central cities, and 'pull' factors such as lower land costs and better access to the road network, well-off suburban areas, airports or desirable amenities.

Low-income housing is also consistently displaced by middle- and high-income housing, which is the dominant form of land use in all South African cities and the focus of the formal housing industry (building contractors, materials suppliers, banks, professional services, etc.). The scale of income inequality in South Africa means that private developers of middle- and high-income housing will almost always be able to pay considerably more for land than developers of low-income housing. Furthermore, established property owners often lobby and resist any proposals to locate affordable housing in adjacent areas on the grounds that it will depress their property values and damage their amenity. Property investment, management and development organisations also generally oppose the market interference caused when government amends laws or introduces initiatives to facilitate affordable housing in better-located areas.

A powerful nexus of vested interests, which maintains the established property market outcomes and resists urban restructuring efforts, includes leading financial institutions, pension funds and insurance companies that invest people's savings in property; banks and building societies that lend people money to buy property and enable developers to build property; construction companies, architects, surveyors and engineers reliant on a stable pipeline of new building projects; estate agents, valuers and lawyers dependent on a steady stream of property transactions; and individual households whose wealth is tied up in property. The combined value of industrial and commercial property in South Africa is over R150 billion, and the value of residential property is bound to be greater.

The mission of the South African Property Owners Association, whose members control 90% of all commercial and industrial property is: 'to be committed to actively and responsibly represent, promote and to protect the interests of our members' commercial activities within the property industry.' Their website reveals close scrutiny of, and responses to,

"Municipalities require a clearer mandate and stronger powers to provide information on the supply of developable land, to bring forward land for infill development, to release under-utilised sites with existing infrastructure, to engage in land swaps to overcome fragmented ownership, and to prepare land for development."

relevant legislation, policies and by-laws pursued by all three spheres of government which potentially threaten their members' financial interests. Furthermore, the state also has a strong interest in maintaining public confidence in a stable property market because of the sizeable contribution property transactions make to national tax revenues and local property rates make to municipal revenues. In many cities, middle- and high-income households constitute powerful ratepayer alliances that are able to mobilise considerable financial muscle, technical knowledge and professional networks to challenge any policies or projects that might threaten their interests.

Possible solutions

In some other countries, city authorities have responded to the financial constraints of building low-income housing on well-located land by imposing conditions on the granting of planning permission to commercial developers. They have been required to provide a certain proportion of 'affordable' housing as part of their new projects, thereby cross-subsidising low-cost housing from the surplus generated on upper-income housing, offices or retail space. An obvious advantage for the public sector is that there is no direct cost to their budgets, except perhaps for infrastructure. Many different permutations of the basic arrangement are possible, depending on the economic climate, local property market conditions and the relative bargaining power of the developer and municipality. South Africa has little experience of this sort of arrangement, and current conditions are not conducive because of the depressed state of the property market and limited new developments in the pipeline. Facing high risks and tight margins, developers are unlikely to offer major concessions, especially for something quite innovative and potentially challenging. This approach's other limitations are that the scale will always be restricted (because it is funded by a deduction from the surplus on commercial development) and target households will require steady incomes to afford the ongoing costs of maintenance and services.

Another possibility is to use state-owned land to encourage affordable housing. In effect, the state provides house builders with a hidden subsidy by selling or leasing well-located land at below market value. This method is widely used in other parts of the world to limit the cost of such housing to government. The use of publicly owned land in this way can be a powerful means of counteracting market forces because the government can control the type, density and occupancy of the housing built. In many cities, public organisations such as rail and port authorities, general utilities and local and regional governments are major landowners, having acquired surplus sites over the years as a result of organisational downsizing or industrial closures. In South Africa, one of the obstacles to more intensive urban development through this mechanism has been the requirement that public bodies sell surplus land at market values, i.e. to the highest bidder.³⁸ Other constraints have been disputed land claims, complex legal and bureaucratic procedures and biodiversity restrictions on undeveloped land. There has been no consistent government policy encouraging the redevelopment of state-owned land for affordable housing. Instead policies and responsibilities towards the management and development of land are dispersed across different spheres and departments of government, making it difficult to intervene strategically in land. Municipalities require a clearer mandate and stronger powers to provide information on the supply of developable land, to bring forward land for infill development, to release under-utilised sites with existing infrastructure, to engage in land swaps to overcome fragmented ownership, and to prepare land for development. Such arrangements could be more-or-less self-financing if the land was acquired at current use value and resold at a higher price after servicing or redevelopment.

In South African cities, instead of actively making serviced land available, the implicit policy among municipalities has been to prevent new informal settlements from emerging and to restrict any outward expansion of existing settlements.³⁹ In addition to the reasons already mentioned, one argument is the unsustainable burden that will be placed on municipal budgets because this group will require costly housing and services, but will be unlikely to find formal work and repay the cost. While there is some basis for this concern, depending on the scale involved, a proportion of the people will, in due course, form part of the effective labour supply and become productive workers and taxpayers. The policy imperative should be to help people to obtain jobs as soon as possible. In this way, well-located informal settlements can make a useful contribution to city economies and help to lower national unemployment by absorbing rural migrants.

One of the effects of a blanket policy of restraint has been the freezing of established patterns of informal settlement, except on selected sites at or beyond the edge of cities. The lack of land to accommodate expanding populations makes it more difficult for people to move to the cities, but doesn't seem to have slowed the process down. It has forced more intensive, unregulated development of townships and informal settlements, particularly through backyard shacks, which has put a considerable extra burden on already over-stretched infrastructure and services and added to localised social

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pressures and tensions. The congestion has also increased health, crime and fire risks within these neighbourhoods, thereby worsening people's living conditions. The outcome has been increasing densification and overcrowding of already vulnerable, impoverished residential communities. Meanwhile most affluent areas have experienced very little densification or other change.

The *in situ* upgrading of informal settlements should be taken much more seriously. Additional land will have to be made available, to reduce the densities of those areas that are overcrowded and to accommodate people living in backyard shacks. The provision of well-located land is clearly a major stumbling block, impeded by the financial cost of acquiring land as well as wider objections from vested interests. Municipalities also have little practical experience of *in situ* upgrading, so they face a steep learning curve. For example, many informal settlements occupy land that is not ideal for permanent housing for various reasons. They may be on low-lying areas vulnerable to flooding, or on land reserved for future roads, schools, hospitals or other public facilities, or protected from development for some other reason. For progress to be made, a variety of complicated legal requirements may need to be changed, and bureaucratic and regulatory procedures may need to be simplified, which will require working in close partnership with the communities concerned. Flexibility, pragmatism and a positive approach are essential for resolving this kind of issue on a site-by-site basis.

The devolution of housing to selected municipalities, after their accreditation by the Department of Human Settlements in the next few years, should improve the situation by giving the municipalities the scope to promote a wider range of housing solutions, including settlement upgrading and the provision of land to transfer people from overcrowded areas and backyard shacks. Practitioners will still require considerable creativity, will and determination to address the systemic constraints that remain, including the complex arrangements for the management and development of land.

ADAPTING TRANSPORT TO URBAN CONDITIONS

In cities and metropolitan areas transport modernisation can contribute significantly to a better life for workers, lower transport costs and a more productive economy.⁴⁰

Challenges

Transport is one of the keys to creating functional and resilient cities, especially where physical restructuring is particularly difficult and slow. Transport systems need to adapt to the reality of continuing urbanisation, rapid growth in car ownership, growing congestion and looming environmental concerns. They have to cope with rising demand for travel and mobility, and the dependence of current transport technologies on oil, which generates high carbon emissions and will inevitably result in price increases as oil reserves diminish. Transport is also an important means of weaving together the patchwork built environment of South African cities and improving people's access to opportunities in conditions of safety, reliability and comfort. It has the capacity to promote selective urban transformation through higher-density development – around transport hubs and along transport corridors. However, to be an effective instrument of change, transport decisions need to be closely aligned with other forms of infrastructure investment and land-use planning policies. Substantial public resources must also support transport decisions because of the splintered physical form of most cities and the low income of most transport users.⁴¹

In practice, there is much criticism of transport policy's failure to get to grips with the urban challenge.⁴² The links between transport and other built environment functions have received limited attention, and public transport has barely improved over the last 17 years, at least until transport was identified as an important component of the 2010 FIFA Soccer World Cup™ preparations. Transport has suffered from historic under-investment and struggled to adapt to the changing spatial economy and increasing demands being placed upon it. This is partly because transport planning has been dominated by concern for the convenience of private motorists. It is also because government investment in transport has been disjointed, and decision-making has been remote from the socio-economic and spatial realities of local travel needs, opportunities and current arrangements. The bulk of government funding (over 90%) is allocated to the provinces and to separate national entities such as the Passenger Rail Agency of SA (PRASA) and the SA National Roads Agency. Indeed, transport is a prime example of an over-centralised system unresponsive to human needs that is criticised by the 'Batho Pele' principles discussed in Chapter 5.

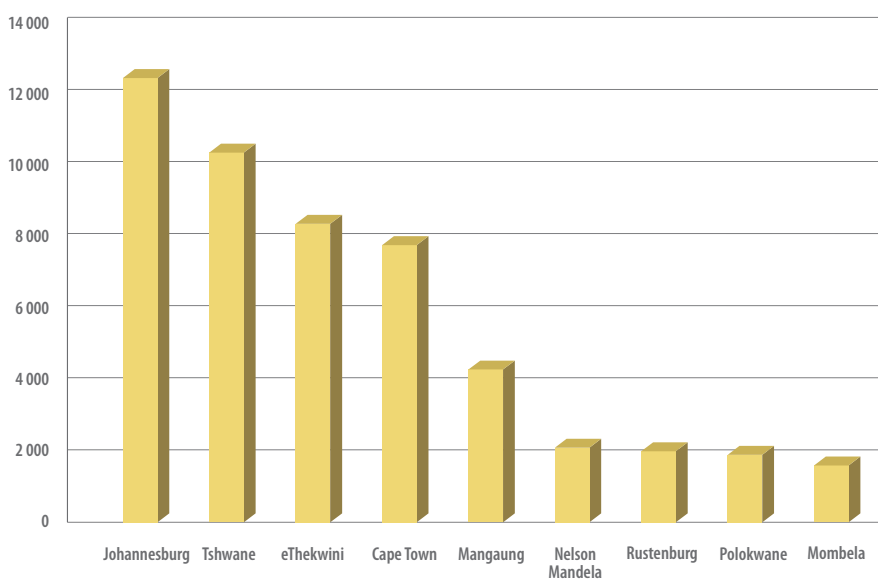
With separate institutions and funding mechanisms, it is unsurprising that responses to the challenges listed above have been piecemeal, modest and technical, devoid of a broader strategy to transform the character of the transport system. City municipalities have had little influence over transport policy or spending, despite land-based transport networks and patterns that are predominantly local and shaped above all by people's need to get to work and school. The metros have been unable to co-ordinate transport with other infrastructure and land development decisions. The current deputy minister of transport is on record as saying:⁴³

More and more we are convinced that the secret to unlocking many of the problems lies in the municipal sphere. This is not to say that national does not have a role, which is to force national transport entities to work more closely with metros and align their policies. We are also engaging with Treasury to look at the funding flows and their inadequacies, which tend to undermine the possibilities of driving proper integrated public transport.

For poorer communities, the neglect of public transport has resulted in the proliferation of informal minibus taxis. Although relatively flexible and convenient, they are costly, disorganised and dangerous. They have also been a source of recurrent conflict because of power struggles and the intense rivalry for passengers, resources and public subsidies.

The Taxi Recapitalisation Programme

The government's experience with the minibus taxi industry over the last decade illustrates the difficulties involved in transforming the transport system, especially where powerful vested interests resist change. The Taxi Recapitalisation Programme (TRP) involves government grants for informal minibus taxi owners to replace their taxis with larger, modern vehicles to improve their efficiency and safety record. The idea emerged in the mid-1990s from the National Taxi Task Team set up by the government to address some of the problems facing the taxi industry, including its dangerous, small and ageing fleet, low profitability, endemic conflict and power struggles. It was also in response to criticisms from taxi operators that buses were subsidised but not taxis. Yet taxis are the backbone of public transport, accounting for about 65% of all trips (with over 15 million passengers a day) compared to bus (20%) and rail trips (15%). Taxis are essential to the functioning of the economy and are also an important economic sector in their own right with an estimated turnover of R16,5 billion and around 500 000 families dependent on the sector for their livelihood.⁴⁴ The lack of hard data for the sector reflects its unregulated character and the fact it pays no direct taxes. Figure 3.19 shows the Department of Transport's estimate of the number of taxis in each city that hosted one of the games during the 2010 FIFA Soccer World Cup™.



The TRP initiative recognised the significant role of the taxi industry in the transport system and sought to improve its quality and provide a more stable and unified organisational framework, while retaining the advantages of its flexibility and responsiveness to need. Owners were offered a restricted, one-off subsidy of approximately R50,000 (now R57,000) to replace each taxi, rather than the open-ended operating subsidy given to buses.

Figure 3.19 Estimated number of taxis in 2010 FIFA Soccer World Cup™ host cities

Source: South Africa, Department of Transport, 2007⁴⁵

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Approved by Cabinet in September 1999, it was estimated at the time that about 97 000 taxis would be replaced through the TRP. One of the immediate outcomes was the creation of a national taxi owners association, SANTACO, in 2001. It was designed to promote greater cohesion in the taxi industry, to reduce conflict between separate taxi associations and to start the process of formalisation. The sector is rife with informal entry fees and protection rackets run by unelected people controlling the associations, which mean that operators' margins are squeezed. This encourages taxi overloading, speeding and intimidation of other motorists.⁴⁶

In practice, implementation of the TRP has been very slow, and the scrapping administrator was only appointed in October 2006. A seven-year plan was approved with a total budget of R7.7 billion. Early on there were disputes about what types of vehicle could qualify as replacements. The original intention was that 15-seater minibuses would be replaced by 18- to 35-seater midi-buses, but operators raised concerns about the number of jobs that would be lost in the process (drivers and their assistants). The new vehicles also cost about R270,000, which most taxi owners cannot afford. Few of them maintain formal accounts or financial records, which are required in order to borrow money from financial institutions. In addition, operators could not afford to scrap their taxis weeks or months in advance of getting replacements. They have regularly protested their frustration at delays in the process, and more generally at being marginalised from transport decision-making. Figures from the National Treasury indicate that 34 243 taxi scrapping allowances had been granted by the end of 2009/10. The website of the Taxi Scrapping Administrator reported 28 300 by October 2009. This is only a fraction of the 150 000–200 000 taxis that are thought to exist nationally. Due to the low levels of take-up of the grants, the government has slashed its budget for the programme and pushed back the expected completion date from 2012 to 2018.⁴⁷

Consequently, there are recurrent problems with the overall safety and efficiency of the taxi industry, as well as the lack of regulation.⁴⁸ Taxi ownership is fragmented and the structure and operation of the sector is somewhat anarchic. Taxis operate in a highly contested environment with fierce competition on the lucrative routes, which results in a tendency to drive dangerously, disregard the rules of the road, and overload their vehicles. The lack of recapitalisation may be a symptom, rather than the cause, of the poor operating conditions in the industry. Part of the problem is that: 'The TRP is being run nationally, and it's rather technocratic and removed from the socio-economic realities of moving people around a municipal area'.⁴⁹

A positive vision for the future would be more consistent industry organisation and regulation, greater investment by operators in skills training, safer vehicles, improvements in the quality of service, and closer integration between taxis and existing and new bus and rail systems – especially those acting as feeder routes to high-capacity corridors. This will not be simple to achieve.

Commuter railway systems

Several cities have important commuter railway systems. Rail has the advantages of fuel efficiency, lower pollution and greater safety than other modes of transport and is particularly suitable for high-volume corridors. However, the quality of rail services in South Africa has long been neglected through lack of investment in the infrastructure and rolling stock. The service is also run by a national entity (Metrorail, itself part of PRASA) which is less responsive to local needs than a local operator would be.⁵⁰ Consequently, rail only accounted for around one in nine (11%) trips to work in the metros in 2003. In the early 1980s, there were about 700 million rail trips per year, but this fell to around 400 million in the early 1990s, before rising again to the current level of around 670 million. The railways were badly affected by violent protests and crime in the 1980s and by the competition of the more flexible and extensive minibus taxi industry. Consequently, commuter rail has failed to keep pace with the growing urban population and rising demand for travel. Criminal behaviour and frustration with unreliable and poor quality rail services has also contributed to serious vandalism in recent years, including the theft of copper cables and burning of trains. Under-investment and poor maintenance also means that a proportion of the fleet is typically out of service, and the signalling systems in some cities are rapidly coming to the end of their lives. In the mid-2000s there was serious talk of the commuter rail system collapsing because it was worn out.

The commuter rail network accounts for about half of all public transport trips (excluding taxis) in Cape Town, where it is more important than elsewhere. The busiest rail corridor in the country is between Khayelitsha and Cape Town central station, with about 340 000 daily passenger trips. The next busiest link is between Mabopane and Pretoria, with about 270 000 daily passenger trips.

During the last decade, several attempts were made to restructure the institutional arrangements for commuter rail services. However, the structure remains heavily centralised at national level, resulting in weak local management and control. One casualty has been the potential development of residential and commercial property around stations that would enable people to live closer to work. Another has been some duplication of planned investment in rail and bus systems, e.g. airport links. Yet there have been some recent efforts to rehabilitate and improve the railways. In 2006 a National Rail plan was developed as a basis for re-investing in the industry leading up to the 2010 FIFA World Cup™. Consequently, government funding to the national rail authority increased by 24% per year for the following three years and now amounts to about R2.5 billion per year. The benefits included upgrading some of the main stations and refurbishing some of the rolling stock. In Cape Town, a new rail extension to Khayelitsha was also opened, which has contributed to substantial growth in local passenger numbers. Nationally, between 2006/07 and 2009/10, the number of commuter passengers grew by 20% and fare revenues increased by 27%.

Apart from this, extending the routes is extremely expensive, so the prospects seem slim that rail will form a bigger part of the urban transport system in the foreseeable future. The priority for investment must be to modernise the existing infrastructure and rolling stock, and perhaps to extend some of the established rail lines, rather than to launch wholly new high speed inter-city projects or rural-urban links, which are sometimes mooted.⁵¹ A positive scenario would be for the management of commuter rail services to be devolved to city government. Decisions could be more responsive to local needs, and rail could be better integrated with other forms of transport and land-use plans in strategic corridors, which could stimulate densification around stations and ensure improved feeder services. Special arrangements might be required between metro authorities in Gauteng because of cross-boundary movements.

Subsidised bus services

Bus services are much cheaper to establish and more flexible to operate than trains. The government provides substantial operating subsidies to support urban commuter bus services. Private companies on long-term contracts from the provinces (Table 3.4) provide most of these services, which the national government pays for, at a total cost of about R2.5 billion per year. Some subsidised bus companies (former municipal fleets) have since been privatised, or become state-owned corporations, and now receive a subsidy from the municipalities. Together they accounted for about 8% of metropolitan commuters in 2003. There appears to have been some growth of the sector in recent years, but the extent of such growth is unclear.

Table 3.4 Subsidised bus fleets

Province	Number of buses	Municipality	Number of buses
Gauteng	2 130	eThekweni	650
KwaZulu-Natal	1 600	Johannesburg	530
Western Cape	910	Tshwane	232
Mpumalanga	440	Ekurhuleni	76
Eastern Cape	265	Total	1 488
Free State	240		
North West	220		
Limpopo	190		
Northern Cape	40		
Total	6 035		

Source: South Africa, Department of Transport, 2007⁵²

The system dates back to the apartheid era and was created to enable people to commute long distances to work from townships located far from economic centres. The subsidies were calculated to ensure people paid an affordable fare, i.e. longer trips received a larger subsidy per kilometre. Although still in effect today, the arrangement is widely considered to be inefficient, and the quality of service has generally been poor. Operators or provinces have few incentives to press for improvements over time. There are also many examples of people being subsidised to commute to jobs that pay considerably less than the cost of the subsidy itself.⁵³ Examples of very long subsidised commutes include Botshabelo–

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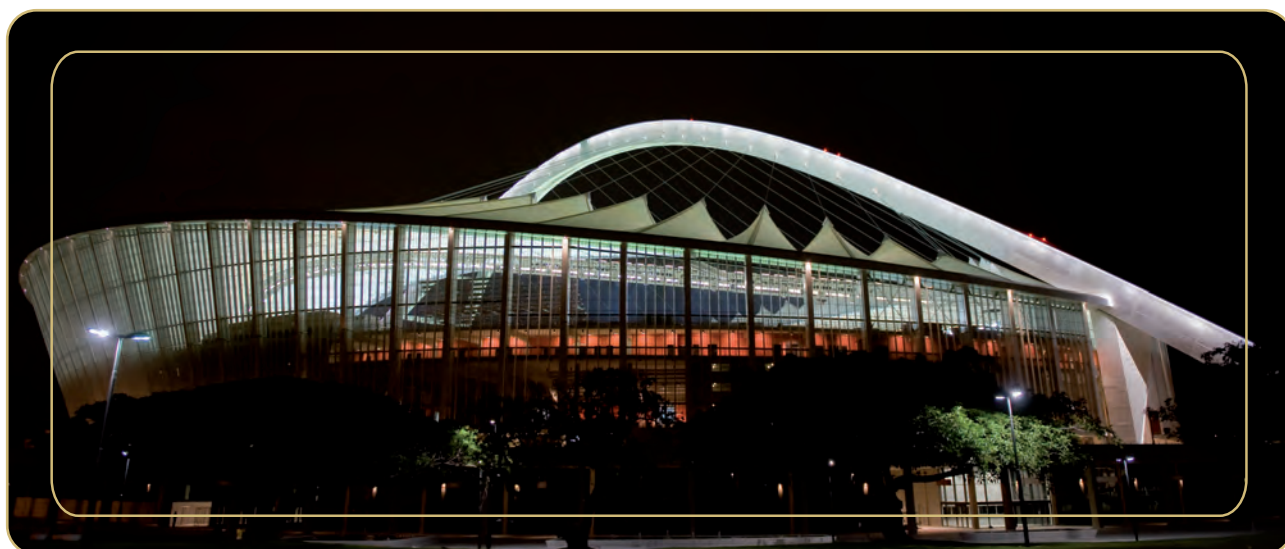
Bloemfontein and KwaNdebele–Pretoria. The government currently spends R350 million per year on subsidies for the latter. In many ways it would be more sensible to invest the subsidy in well-located housing, or to put the money directly into people's pockets to improve their options.

Since 1994 the government has made various changes to try to increase the efficiency and quality of subsidised bus services. It has sought to introduce greater competition among bus operators, but without much success. It has tried to renegotiate the contracts with bus companies, which has also run into difficulties. Existing operators are well established and efforts to restructure the subsidy system have proved more complicated than anticipated. Growing utilisation of the service has increased the financial burden on the government and resulted in legal disputes with operators over how much they are entitled to be paid. Government increased the total subsidy paid out by an average of 10% per year between 2004 and 2010⁵⁴ but it has proved surprisingly difficult to use the leverage of this growing subsidy to modernise the bus fleet and drive improvements to the overall quality and reliability of the service.

The government has recently shifted its approach, from trying to manipulate the operating framework from the centre to beginning to devolve control to local levels and integrate the bus service into wider urban transport networks. This change is apparent in the 2009 National Land Transport Act, which provides for the setting up of Public Transport Integration Committees, and for metro authorities to take over the management of the bus contracts from the provinces. In due course this should help to reduce some of the inefficiencies of separate provincial and national arrangements, and means that the current bus operating subsidies should be available to help fund the new Bus Rapid Transit (BRT) systems. However, managing this transition will not be straightforward for political and technical reasons.

Impact of the 2010 FIFA World Cup™

Although the state of commuter rail services, subsidised buses and minibus taxis has not changed much over the last decade, significant shifts have occurred in other spheres of transport during the last three to five years. The three most important developments are the Gautrain, road investment and the BRT systems. Public investment has been an important catalyst of change. Between 2007/08 and 2010/11, spending on transport infrastructure and public transport services increased by more than 20% per year, partly in preparation for the 2010 FIFA World Cup™. Much of the extra expenditure occurred in the cities, as shown in Chapter 6. The biggest single investment has been the Gautrain, a fast train service linking Pretoria, Johannesburg and the OR Tambo airport. Gautrain was intended in part to change middle-income perceptions of public transport and relieve congestion on the main freeways linking the two cities and the airport. The main concerns have been its high cost, its stand-alone nature and its focus on affluent travellers. This is important because Gautrain has already become something of a model that others are seeking to imitate, with tentative plans outlined in August 2010 for new high-speed railways between Pretoria and Moloto in Mpumalanga, Johannesburg and Durban, Johannesburg and Cape Town, and Johannesburg and Musina. The minister for transport stated that high-speed rail was his top priority. Part of the argument has been to transfer the skills and expertise acquired in Gautrain to other projects.



Gautrain

Gautrain was first announced as a flagship project of the Gauteng province in 2000 by the Premier, Mbhazima Shilowa. It was projected to cost between R3.5 and R4 billion, common with other high speed rail projects, this escalated as detailed planning was undertaken; in October 2005 the minister of finance announced that the project had been given 'national status' and that national government would meet half the total cost (then estimated at R20 billion). It was approved by cabinet in December 2005, and construction began in September 2006. The Sandton–OR Tambo airport link was opened just before the FIFA World Cup™ in June 2010, and the main commuter link between Johannesburg and Pretoria is expected to open in mid-2011. By late 2010 the total cost had risen to an expected R29 billion.

Gautrain has a total track length of 80 km and uses standard rail gauge rather than the narrow gauge used by trains elsewhere in the country. The top speed of the trains will be 160 km per hour, with six trains per hour in each direction. The system will operate for 18 hours per day and will have 10 stations. A total of 15 km of the route is tunnelled – mainly within the current built-up area of Johannesburg around Rosebank and Sandton. The project feasibility study projected approximately 140 000 trips per day once the project is completed. It was anticipated that 20% of car users using the main N1 highway between Johannesburg and Pretoria would transfer to the Gautrain – because traffic on this route has been growing at a rate of 7% per year. An estimated 180 000 vehicles per day currently use this highway. A bus feeder and distribution system also operates around each station to enable people to access the trains directly from their homes or workplaces without having to use their cars, although parking facilities are also being made available for 10 000 cars throughout the network.

The Gautrain is being built and operated by a dedicated public-private partnership company, rather than by Metrorail, and has been widely applauded for its bold and determined approach.⁵⁵ It stands out against almost all other public transport initiatives of recent decades, which have been relatively cautious and modest attempts to tinker with a system that suffers from severe under-investment, lack of regulation and is notoriously dangerous to passengers. Gautrain has also stimulated useful public debate about the kind of public transport people want and how it might be funded and delivered.⁵⁶

Despite this, Gautrain has been criticised for its high cost and its focus on current car owners, especially in relation to more pressing public transport requirements for people without cars. Over the five-year period 2006–2011, Gautrain is estimated to have cost about one-third of all public spending on public transport in South Africa.⁵⁷ The cost during this period was roughly double the amount spent on commuter bus services that run throughout the country. It was estimated that a dedicated BRT service would have been slightly slower than the train, but it would have cost only one hundredth of the price.⁵⁸ Gautrain may require further operating subsidies if ridership does not reach the minimum profitability levels envisaged. By November 2010, about 50 000 train passengers per week were using the airport service (said to be above expectations) and about 4 000 bus passengers were on the feeder and distribution routes.

Gautrain has also been criticised for being poorly integrated into the existing transport system and urban environment – partly reflecting its origins as a provincial initiative developed in isolation from local government. It was designed to change the perceptions and behaviour of middle and upper-income groups towards public transport and to make a symbolic statement about the province's global aspirations. However, traffic congestion cannot be solved by addressing only one aspect of the system. In 2005 the Transport Portfolio Committee in Parliament advised against the project proceeding in its current form because of its stand-alone character and focus on only a very limited part of Gauteng's total public transport needs. Instead of a single costly project, the Committee advocated a more comprehensive public transport network based on the integrated transport plans of the three metros, which would also improve conditions for those currently most dependent on public transport by increasing their access to opportunities. Another criticism has been that the scale of the provincial government's funding must have required funds to be diverted from its health and education budgets.

The ultimate impact of Gautrain is uncertain at present. The positive scenario is that it becomes an important facility for middle-income commuters and airport users, which encourages higher-density housing development around the main stations, and contributes to a more compact vision of spatial development in Gauteng. The government may be able to recoup some of the cost of the investment through a tax on rising property values around the stations. Another positive outcome would be if the bus feeder routes complement and integrate with the wider public transport network, rather than duplicate and compete with them. The negative scenario is that Gautrain has less effect on travel patterns than envisaged, makes no difference to traffic congestion on the Johannesburg–Pretoria freeway, does little to steer or stimulate property development processes around the stations, and therefore requires ongoing operating subsidies from government. Only time will tell.

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Road investment

Road investment was a major feature of the 2010 FIFA World Cup™ upgrading programme. The pressure for road investment stems from growing congestion and longer travel times, backed by a powerful lobby of interests from private motoring and the car industry. Levels of car ownership are four times higher in the metros than in the rural areas.⁵⁹ The sprawling structure of the city and the poor quality of public transport encourage the use of private cars. Table 3.5 shows the number and proportion of household-to-car ownership in each of metros.

Table 3.5 Proportion of households owning cars

Metropolitan area	Number of households owning cars	Percentage (%) of all households owning cars
Johannesburg	369 000	32,1
eThekweni	291 000	33,7
Cape Town	411 000	49,1
Ekurhuleni	269 000	32,8
Tshwane	198 000	33,0
Nelson Mandela Bay	95 000	33,8
Total	1 635 000	–
Average	–	35,9

Source: Cameron J et al., 2007⁶⁰

Cape Town has the highest proportion of household-to-car ownership, reflecting higher average incomes. However, the biggest congestion problems are experienced in Gauteng, reflecting the province's strong population and economic growth. A recent report on commuting in 20 of the world's most economically important cities identified Johannesburg as third worst in terms of growing traffic congestion.⁶¹ Only Beijing and Mexico City rated worse on a subjective index that included commuting time, time stuck in traffic, worsening traffic, stress and anger. Furthermore, levels of car ownership in South Africa are below those of other middle-income countries, such as Brazil, Mexico and Malaysia, suggesting that the scope for further growth is considerable. This should be of great concern bearing in mind the effects of increasing car travel on fuel consumption, congestion, carbon emissions and pollution. Between 1997 and 2006 new car sales almost doubled from 367 000 to 647 000. Meanwhile, nearly half (47%) of South Africa's roads are more than 20 years old and were planned during an era of much lower car ownership.⁶²

One of the largest recent transport projects in the country has been the Gauteng Freeway Improvement Project (GFIP), the first phase of which was approved by the Cabinet in 2007 at a cost of R23 billion. The aim is to upgrade and expand the province's current major road network to combat serious congestion. It involves both widening freeways and constructing new roads. Other components include road lighting, concrete barriers, upgrading interchanges, installing traffic management systems (cameras and electronic signs) and an automated toll system. GFIP has three phases. The first began in June 2008 and involves upgrading 185 km of existing freeways, including the inner ring road around Johannesburg, the N1 highway between Johannesburg and Pretoria East and the R21 between OR Tambo airport and Pretoria. These freeways will be widened to at least four lanes in both directions. A total of 34 interchanges are currently being substantially improved, including well-known bottlenecks such as at Allandale, Rivonia, William Nicol, Gilloolys and Elands. Gilloolys interchange, for example, currently handles 200 000 vehicles per day, making it the busiest interchange in Africa. The first phase of the GFIP should be completed in early 2011.

In an important development, the freeway upgrade will be financed through road tolls, which should be introduced during 2011. This will take place through an open-road tolling system, which will require every vehicle to carry an electronic tag. Tolls will be deducted every time a vehicle passes under one of 38 overhead gantries, which will be set about 10 km apart across the freeway network. The tags will be linked to bank accounts, or can be recharged at shops or online. The second and third phases involve upgrading and constructing a further 376 km of the Gauteng freeway network. Detailed cost estimates are not publicly available, but as they are large projects, each could cost roughly the same amount as the first phase.

The impact of the GFIP project is uncertain. Continued investment in new and wider roads will give car drivers the impression of additional capacity and could thereby simply release latent demand and encourage more road-based travel; within a few years traffic congestion would revert to their starting levels. New and wider freeways will also encourage economic activity to be dispersed further, from centrally located nodes to outlying areas. Much will therefore depend on the level at which the road charges are set, and whether a significant element is included cover both the external costs of congestion and help to pay for improved public transport. Given the powerful social forces behind private transport, it may prove difficult for the government to use the full potential of the tolls to deter car use and to cross-subsidise public transport. In theory, tolls should be used to create a more resilient transport system, as is being done increasingly in other cities around the world. This would also complement both Gautrain and the new BRT system and improve their chances of success. A close observer of the transport scene recently issued a stark warning that: 'It is just a matter of two to three years before we are back to where we were last year, before the roadworks started.'⁶³

Bus Rapid Transit (BRT) systems

The most important policy development in recent years has been the substantial government investment in BRT systems in Johannesburg, Cape Town, Tshwane and Nelson Mandela Bay. These are designed to improve public transport radically, with modern buses running on dedicated lanes in the middle of the main roads. The system has flexibility to penetrate the existing urban fabric through a combination of trunk and feeder services, with limited disruption during the installation phase, and perhaps greater resilience in the long term than heavy rail. Its dedicated busways mean BRT vehicles travel at faster speeds than all other transport, especially during rush hours. This will become increasingly attractive as road congestion rising car ownership leads to growings. And working with the minibus taxi industry to provide the feeder services may help to regularise and stabilise taxi activities. Drawing on recent experience in Latin America, transport experts believe that the BRT system offers a good basis on which to build an integrated metropolitan-wide transport network for the future. This will be important in addressing the growing urban challenges referred to earlier and providing a safe, reliable, efficient and affordable transport service.

Johannesburg was the first city in the country to embark on a BRT, known as Rea Vaya. In the early 2000s plans were made to develop a network of bus routes across the city. The initiative received a boost from the introduction of BRT ideas and design principles in 2006. A feasibility study conducted by a team of international experts recommended larger vehicles to cope with the high demand for travel, dedicated busways, and closed stations with fares collected before boarding to improve efficiency and security, rather than old-style bus stops. The goal was to ensure that 85% of the city's population were living within 500 metres of a stop.

A subsequent operational design study recommended the development of trunk, feeder and complementary services. The trunk services would use long vehicles and run along special corridors totalling 330 km in length. The feeder services would use small buses and run in mixed traffic, while complementary vehicles would use more conventional-sized buses and run in both dedicated lanes and mixed traffic. They would be essential during the phasing in of the system before the infrastructure was complete.

The plan for the first phase (2007–2013) was that the Rea Vaya operations would replace nearly one in four of the existing 582 bus routes in the city and nearly one in three of the existing 898 minibus taxi routes. Seven trunk routes would be developed amounting to 122 km altogether, with 150 stations and 840 000 passengers per day envisaged by 2013. There would be 427 trunk routes buses, 413 feeder buses and 350 complementary buses in the fleet by this stage.

Problems experienced during the implementation of Rea Vaya include escalating costs, opposition from the taxi industry and industrial relations. Progress has been substantial, but slower than planned. Some of the routes have been shortened, and fewer new vehicles have been introduced. Protracted negotiations with taxi and bus operators have delayed the replacement of existing services with the Rea Vaya services, while taxi conflicts and management disputes with BRT drivers and station staff have caused periodic interruptions to the service. Towards the end of 2010 the taxi industry was granted a major stake in BRT. In addition, a new inner-city service attracted few passengers and was withdrawn. Some R1.5 billion, financed by government grants, was invested over the period 2007–2010, but it is uncertain how long the service will continue and unclear what the long-term financial arrangements are.

Another difficulty for Rea Vaya has been the uneasy relationship between the city council and provincial government. The province had always assumed it was the key organisation in the sphere of transport, partly because of the cross-boundary commuting flows between municipalities and transport's vital role in promoting Gauteng as a global city region. However, its credibility suffered when its proposal to run a monorail between Soweto and Johannesburg, along the same route

The Built Environment *continued*

as Rea Vaya, was rejected by the national cabinet. Nevertheless, the province retains an important role in co-ordinating services across municipal boundaries, in Gautrain, and in the Gauteng Freeway Improvement Project.

Cape Town's BRT is known as the MyCiti Integrated Rapid Transit (IRT) project. This indicates an intention to link the BRT with the commuter rail system, taxis and any other public transport service to improve the experience for passengers dramatically. The rail service handles large passenger numbers over long distances, whereas the BRT should be able to permeate the existing urban fabric more cost effectively. Suburban rail tends to divide places, whereas BRT can connect them more readily, with fewer barriers and shorter walking distances. Achieving densification along BRT corridors should be easier than along rail routes and should help increase the use of the transport service.⁶⁴

The idea for a BRT came from the Western Cape in the mid-2000s, where it failed to generate much support and was abandoned. The Mayor of Cape Town resurrected the concept in 2007, and various feasibility studies followed. It received full council approval in August 2008. The initial phase of the IRT project was designed to meet the city's transport requirements for the 2010 FIFA World Cup™, including an airport link and an inner city loop service. The full first phase will serve the area directly to the north of Cape Town up the West Coast – the Blaauwberg corridor to Table View. It is the fastest growing formal residential area of the city, suffers serious traffic congestion, and lacks any rail service. There are also fewer taxi associations operating along the West Coast trunk route, which will simplify the inevitably complex negotiations with taxi operators. The long-term plan is for the roll out of an extensive network of trunk routes and feeder services across the city in four phases over the next decade.

The main problem encountered in implementing the IRT has been unanticipated costs and rising expenditure. The initial figures underestimated the operating costs and wrongly assumed that no ongoing subsidy would be required. The tenders received for vehicles, road surfacing, land for depots, the control centre, security and managing of public spaces around the stations were much higher than expected. Current bus operators whose licenses were to be terminated would also have to be compensated. The additional costs pushed the budget for the first phase to R4.6 billion, creating alarm within the city council and desperation to secure additional support from national government. In April 2010 the government more than doubled its grant to R3.8 billion for the period 2009–2013, with the city obliged to meet the shortfall in capital costs and the operating subsidy of some R120 million per year. The city also strengthened the IRT project team of seconded staff by appointing a professional project management group in October 2010.

Nelson Mandela Bay is implementing a BRT system with the same objectives and along broadly similar lines. The roots of the initiative lie in a public transport-planning process started in 2004. After extensive consultation and the creation of a multi-stakeholder task team, the idea of introducing a BRT approach emerged in 2007 and rapidly gained support, particularly within the council. The aims are to modernise and integrate the current public transport system with new BRT principles involving dedicated trunk and feeder routes, and greater emphasis on improving passenger comfort and safety with a frequent, scheduled service. The routes will intersect at attractive interchanges where passengers can transfer to other modes safely and securely. These interchanges will stimulate further commercial and economic development in their immediate environs. Densification of transport corridors will also be encouraged.

The planned timescale is 10 years, with interim arrangements having been made to serve the 2010 FIFA World Cup™. Upgrading seven major roads is a priority before other investment can occur. Progress under way includes the negotiation of new contracts with current bus operators and efforts to formalise and upgrade the minibus taxi industry using the TRP. The 10 taxi associations in the area are involved in discussions to form a joint venture operating entity, which will be contracted by the municipality to provide the new services. All existing taxi owners and drivers will be guaranteed employment with the new entity. Approximately 4000 permanent formal jobs will be created in the new system, which is more than the current level of registered employment in the local public transport industry (buses and taxis). Starting in June 2010 a taxi-operator co-operative, which secured a contract with the municipality to run eight buses along the main airport routes, was an early achievement and the first venture of its kind in the country.

The present rail service between Port Elizabeth and Uitenhage will be enhanced, and no new competing road-based public transport routes will be established. A possible rail extension into Motherwell along the central corridor may be considered in three to five years' time. Meanwhile, one of the top priorities is to create a trunk BRT route connecting Motherwell and the CBD of Port Elizabeth with a scheduled all-day service via Njoli Square and Korsten. A scheduled public transport service will be introduced gradually as the Coega Industrial Development Zone (IDZ) develops, but will initially be a distribution system connecting to the trunk bus route in Motherwell.

Towards an integrated public transport system for cities

Since 2006 there has been increasing policy discussion about creating integrated public transport systems, planned and managed by the metro governments, and going beyond BRT. This is a new approach involving a more active role for the public sector in co-ordinating and shaping city-wide transport networks, which would enable the existing separate bus, rail and minibus operators to be incorporated into a single structure. More rational and consistent decisions about investment and subsidies across the different modes could then be made – vital in a context of scarce public resources. This should also enable transport, land use and other infrastructure decisions to be aligned more closely to facilitate more coherent urban development. People should benefit in the short term from more seamless, reliable and higher quality public transport services and, in the longer term, from a city that functions better overall. Integrated, city-level governance of transport would be a radical change from the current fragmented responsibilities, and would require new legislation and funding models. For example, the October 2010 Medium Term Budget Policy Statement states that:⁶⁵

Steps are being taken to change the financing arrangements for human settlements, infrastructure and transport. The goal is for cities to have more responsibility for these functions, leading to improved integration, outcomes and efficiency in connecting households to services and economic activities ... Assigning the function for issuing public transport operating licences to cities will allow large urban municipalities to integrate public transport with the rest of their built environment planning.

Similarly, in his 2011 Budget speech, the minister of finance stated that:⁶⁶

An efficient and cost-effective public transport system is crucial because the majority of our people live too far from where job opportunities are ... The public transport function, including the management of rail, has been delegated by Minister Ndebele to metropolitan municipalities in terms of the National Land Transport Act. These are steps that create direct responsibilities for city councils, and open up opportunities for accelerating investment and change in the urban landscape and how cities promote their local economic development.

This positive outlook offer city governments more control over the levers of transport policy, thereby providing the basis for more progress to be made in reshaping the country's inefficient urban form. A remaining concern is that the resources required to deliver radical improvements in the management of urban space, and to transform movement patterns across this space, will not be forthcoming. City municipalities cannot be expected to fund challenges on this scale from their own revenue streams. National government does not appear to have recognised sufficiently the magnitude of the tasks involved in promoting urban integration and densification while maintaining current transport systems. For example, the 2010 Medium-Term Budget Policy Statement indicated that transport expenditure will grow by only 3.6% per year over the period 2011–2014 compared to a growth of 8.5% for total government spending.⁶⁷

A related concern is whether city governments have, or are able to develop, the leadership, organisational capabilities and technical competencies required to cope with such a large expansion in their responsibilities. The task goes far beyond delivering new roadways, bus schedules and through-ticketing procedures. It will involve complex negotiations with established transport providers, landowners, property developers and other stakeholders to set up sophisticated institutions, guidelines and procedures to plan, deliver and manage a more coherent transport system, and in the process establish a different, more carefully planned approach to urban development. It should include mechanisms to capture the value of development land following infrastructure investment to recoup at least some of the public sector costs. It should also involve new design techniques and joint decision-making to integrate public transport systems into the physical fabric of the cities. All this will require new skills and practices – particularly the practice of working in partnership with other stakeholders. In the meantime, there will be continuing challenges involved in managing and financing current public transport systems. Authorities will have to balance the need to maintain essential services with the formidable demands of transformation.

CONCLUSION

The pressure on the built environment of cities is more intense than elsewhere in the country, as a result of stronger population and economic growth, and is visibly reflected in the expansion of informal settlements and the proliferation of backyard shacks. City authorities are not planning and managing urban growth effectively, in part because they lack sufficient powers, resources, technical expertise and political will. Government policy towards housing and human settlements appears to be shifting in a more appropriate direction, although ambiguity continues about whether the existence and upgrading of informal settlements is fully endorsed. The established approach of top-down delivery of formal, fully serviced housing to passive communities has not been meeting people's needs and expectations adequately,

The Built Environment *continued*

particularly in terms of quantity, and also in relation to quality and location. There has also been insufficient recognition that well-located informal settlements perform a useful function in enabling access to urban labour markets – a rung on the ladder of social mobility.

The spatial form of South African cities is more fragmented, and the population distribution more imbalanced, than in many other countries. Little, if any, progress has been made to transform the geographical patterns inherited from the past and to promote urban integration. State-sponsored housing is mostly situated on the urban periphery, which risks ‘fixing’ people in places that perpetuate disadvantage rather than improving access to opportunity. These isolated settlements may lock in underdevelopment by their exclusion from jobs and amenities. Prevailing patterns of urban development seem to be based on an assumption that citizens have cars or will acquire cars, which is obviously highly problematic for congestion and environmental reasons as well as affordability. In most cities, there is little sign of planned residential densification or infill development in and around the city centres and inner suburbs. There has been a distinct lack of creativity and determination shown towards more effective management and development of vacant and under-used property, including state-owned land. The same applies to transport, housing and infrastructure policy over the last decade.

In the absence of concerted efforts to promote well-located housing and jobs in and around the townships and informal settlements, the transport system has been under pressure to cope with long commuter flows and the rising demand for travel. In the face of growing congestion and related problems, some important, albeit piecemeal, initiatives have been taken on public transport and road improvements linked to the FIFA 2010 World Cup™. More importantly, the momentum is growing to devolve public transport and housing functions to the metros, which holds out the prospect of a more coherent and co-ordinated approach to the planning, development and management of cities in the future.

Achieving a more integrated urban environment will not be straightforward, and many technical, political and managerial challenges remain, but it is vital that a start is made because of the cumulative nature of current investment decisions. At present, city municipalities seem to lack the strategic capabilities, vision and resources required to understand and act upon prevailing trends in a way that starts transforming the character of current practices and systems. Breakthroughs are required to deliver an urban environment that is genuinely more resilient, efficient and equitable. Provided the metros enjoy a period of greater stability and political will, the necessary competences should improve over time and permit the process of restructuring our fragmented cities to begin. High-level national support will still be required in the form of funding, strategic oversight, legislative changes (e.g. land-use management and planning) and the taxation and regulation of private motoring. Given their inherited difficulties and formidable contemporary challenges, it is unrealistic to expect cities to look after themselves.

In addition, a more integrated approach towards the development and management of urban townships is needed. Although many townships have benefited from investment in basic infrastructure and services over the last decade, they lack a more comprehensive, strategic framework to promote all-round improvement of their areas. The density maps show clearly that these are the largest population centres in the metros, but are also the areas of greatest historic neglect and contemporary need, where conventional ways of delivering public services (top-down and in silos) are not enough to promote transformation. Sustained assistance is required to help build their local economies, strengthen human capabilities and improve the quality of the local environment. The government should therefore be encouraged to work together with city municipalities on ‘township development strategies’ to:

- create partnerships with the community and business groups, combined with dedicated organisational capacity to engage in local problem solving, to champion local interests, and to drive socio-economic development
- secure support from key government departments, parastatals and the private sector to lever additional investment into township regeneration, building on and drawing together existing initiatives such as the Neighbourhood Development Programme and the new Urban Settlements Development Grant
- build stronger physical and socio-economic linkages between townships and established urban areas through public transport, mixed-use property development in intermediate locations, digital connections, social and institutional networks, and trade and supply chain linkages.

Such strategies could perform a valuable function both in transforming the prospects of major urban townships and in restructuring the urban form for a more functional and equitable future.



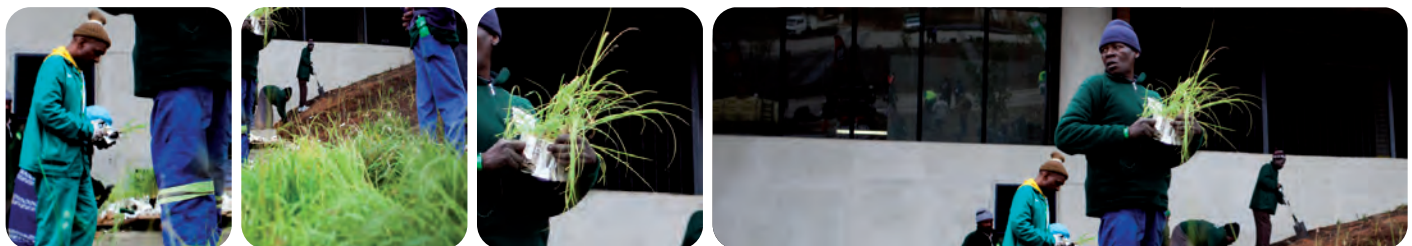
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“Considering cities from a perspective of resilience highlights the crucial role of healthy supporting ecosystems in city survival. Worldwide crises such as food riots, droughts and natural disasters, make it increasingly apparent that city inhabitants depend on ecosystem goods and services, and that the modern way of life threatens to irreparably damage them unless significant changes are made to how human settlements operate.”



Cities as life-supporting systems



Cities as life-supporting systems



Section 24(b) of the South African Constitution requires local government to 'secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development'. However, in the face of significant socio-economic challenges, ecological sustainability is often dismissed as an optional extra, or a luxury. Considering cities from a perspective of resilience highlights the crucial role of healthy supporting ecosystems in city survival. Worldwide crises such as food riots, droughts and natural disasters, make it increasingly apparent that city inhabitants depend on ecosystem goods and services, and that the modern way of life threatens to irreparably damage them unless significant changes are made to how human settlements operate.

As illustrated in Figure 4.1, the notion of sustainable development stems from the basic understanding that economies are irrelevant without people and that people cannot exist without food, water and ecosystem services from the natural environment. Natural resources form the foundation of economies, and need to be managed accordingly. Non-renewable resources are limited, and remaining reserves constrain their continued ability to support life and economic growth.

Some economists argue that environmental changes and resource depletion will stimulate innovations necessary for cities to continue to support life. This may be true, but the poor are typically worst affected by such disasters and least able to pay for these innovations.

Sustainable Development in a South African Context

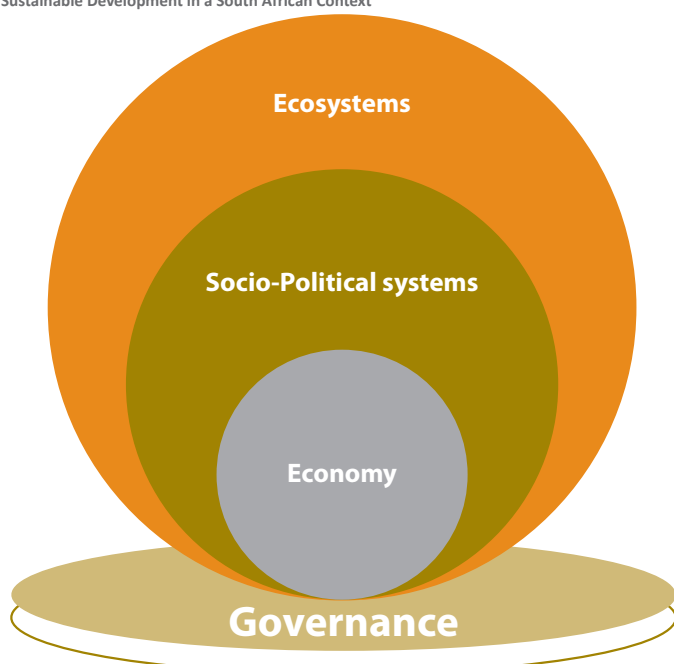


Figure 4.1 The three spheres of sustainability showing the relative importance of the environment

The diagram represents a systems approach to sustainability because the economic system, socio-political system and ecosystem are seen as embedded within each other, and then integrated through the governance system that holds all the other systems together within a legitimate regulatory framework. Sustainability implies the continuous and mutually compatible integration of these systems over time; sustainable development means making sure that these systems remain mutually compatible as the key development challenges are met through specific actions and interventions to eradicate poverty and severe inequalities. This is preferable to the more commonly used image of the three separate intersecting circles which depict sustainable development as limited to a fragile space where all three circles intersect, and being dependent on a sound Governance foundation.



“The environment can no longer be treated as a separate issue funded by the remains of budgets spent on higher priority projects.”

City managers are responsible for acting in the best interests of all their citizens by taking proactive steps to prevent or minimise the negative impact of impending disasters through improving the ecological resilience of cities. Based on current trends, South African cities need to prepare themselves for challenges related to resources and the environment, including:

- rapidly increasing prices of oil and the products and services dependent on it
- erratic and unpredictable rainfall patterns as a result of climate change
- fresh water demand exceeding supply in most cities by 2025
- increasingly expensive grid electricity from coal and nuclear power
- mounting international pressure to measure, reduce and penalise carbon dioxide (CO₂) emissions
- increasing costs of landfill waste disposal owing to reduced land availability
- increasing numbers of ‘climate refugees’ from rural areas and neighbouring countries.

South Africa faces many serious socio-economic challenges that need to be addressed. However, if the measures used to tackle these challenges destroy the life-supporting ecosystems and resources, they will ultimately have failed to serve the interest of citizens. Johannesburg’s acid mine drainage problem is a prime example of the dangers of ignoring the environmental impact of economic activities. The drastic actions required to extract this polluted water from the ground to prevent the city from flooding will financially burden the tax base for decades to come.

Resilient cities go beyond reactive coping measures to offer quality of life and long-term prosperity for all. At the forefront of the resilience challenge is changing the way in which cities incorporate ecological custodianship principles. The environment can no longer be treated as a separate issue funded by the remains of budgets spent on higher priority projects, and responsibilities should not be relegated to environmental conservation portfolios alone. All city mandates need to be approached in a way that both recognises ecosystem goods and services as critical for human survival, and considers the health of the natural environment to be of equal or greater importance than short-term economic growth.

Through their provision of services to the public, local governments act as intermediaries between external sources of goods and services and consumers. Local governments thus play a critical role in shaping the ways in which utility services affect the natural environment. The Municipal Systems Act places a responsibility on local governments to provide municipal services in an ‘environmentally sustainable manner’, and the National Environmental Management Act requires that sustainable development principles guide Integrated Development Plans (IDPs).¹ This chapter looks at the progress made by South Africa’s cities in delivering on these mandates by incorporating environmental considerations into the way they operate. Three themes will be explored: improving resource productivity, enhancing local capacity, and closing waste loops.

These can be seen as a set of basic guidelines for re-engineering cities toward resilience in a manner that achieves conventional mandates while relieving a number of the ecological burdens that typically accompany the extension of services. Better resource management in service provision allows for social objectives to be met at reduced economic cost and with a lower environmental impact. Such approaches also help to prepare cities for the changes associated with climate change and resource depletion; this in turn will help them to attract investment and prosper in the long run.

Stadium greening for the 2010 FIFA World Cup™

The construction of new stadiums for the 2010 FIFA World Cup™ was used as an opportunity to promote sustainability principles and technologies in the development and maintenance of public assets. A sustainability assessment of the Cape Town, Moses Mabhida, Athlone, Royal Bafokeng and Peter Mokaba Stadiums, commissioned by the Department of Environmental Affairs and funded by the Royal Danish Embassy as part of the UEMP programme, listed the features outlined below.

Environment	Society	Economy
• Water-efficient toilet and shower fittings • Non-potable water used for irrigation • Rainwater harvested from the roof and pitch • Water and energy sub-meters connected to building management systems • Low-energy lighting • Passive design principles • Located close to public transport • Re-use of demolished building materials • Recycling bins • Carbon off-setting • Indigenous landscaping	• Multiple community facilities provided in the precinct (e.g. tennis courts, swimming pools) • Integrated with local community via walkways and public spaces • Facilities for the disabled • Occupant comfort ensured with shaded seating and natural ventilation	• Majority of workers sourced from local region • Majority of materials sourced locally • Shared use of space (e.g. parking lots shared by neighbouring developments) • Multiple-use areas to maximise usage

Source: UEMP, 2010²

IMPROVING RESOURCE PRODUCTIVITY

As limits are approached and non-renewable resources become more scarce, their supply will become less reliable and their prices will increase. Cities that require fewer non-renewable resources will be better prepared for resource decline than those that are resource hungry. Although forward-thinking cities of the North are looking to reduce their total resource requirements, South African cities have to overcome significant development challenges requiring an increase in consumption for many of their citizens to improve equity. Instead of trying to decrease total consumption, our cities need to focus on slowing the rate of growth of consumption and waste.

Although access to basic services is a priority, city managers can no longer ignore the effects of uncontrolled consumption growth on scarce resources and waste sinks. City managers need to reconsider service delivery methods carefully to ensure that they are resource efficient. This requires innovative strategies for improving government resource management, and co-ordinating efforts to reduce wasteful private sector consumption.

The Municipal Systems Act of 2000 specifies that municipal services need to be provided in a manner that promotes 'the prudent, economic, efficient and effective use of available resources'.³ Improvements in resource productivity are also an opportunity for cities to save money while achieving environmental objectives – part of their mandate from national government.

The benefits of improving resource productivity include:⁴

- **Higher economic multiplier**

Once an investment in eco-efficiency has been paid off, savings accumulate that can be reinvested in other areas.

- **Higher economic welfare impact**

Slowing the growth in demand for additional resources allows for new infrastructure investments to be delayed, so that funds can be re-assigned to more pressing social issues.

- **Job creation and skills development**

Building key industries around resource productivity allows for the creation of jobs in a field that will be increasingly important both nationally and internationally.

‘Eco-efficiency’ involves measures to reduce the amount of resources required to achieve a specific goal so that waste and input costs are minimised. In the case of city management, this can include using non-potable water to reduce the amount of fresh water to irrigate public spaces, improving vehicle maintenance to cut the amount of fossil fuels used by the city’s fleet of vehicles, or shifting from incandescent bulbs to energy-efficient alternatives to reduce the amount of electricity used in streetlights. These interventions lead to savings in water, fossil fuels and electricity that allow tax revenues to be better spent on other priority areas, and help to protect the city from future price increases. They also reduce the environmental damage incurred in extracting, processing, transporting and using the resources required as inputs.

Water

South Africa is classified as a semi-arid country, and as beneficial water and sanitation services are rolled out to more and more citizens, it is running out of fresh water sources. Few cities are self-sufficient in terms of their water supply, so the water catchment area determines their water security (see Figure 4.2). Owing to variations in climate and topography, a number of transfers occur across the catchment areas in which cities are located require transfers from elsewhere to meet demand.

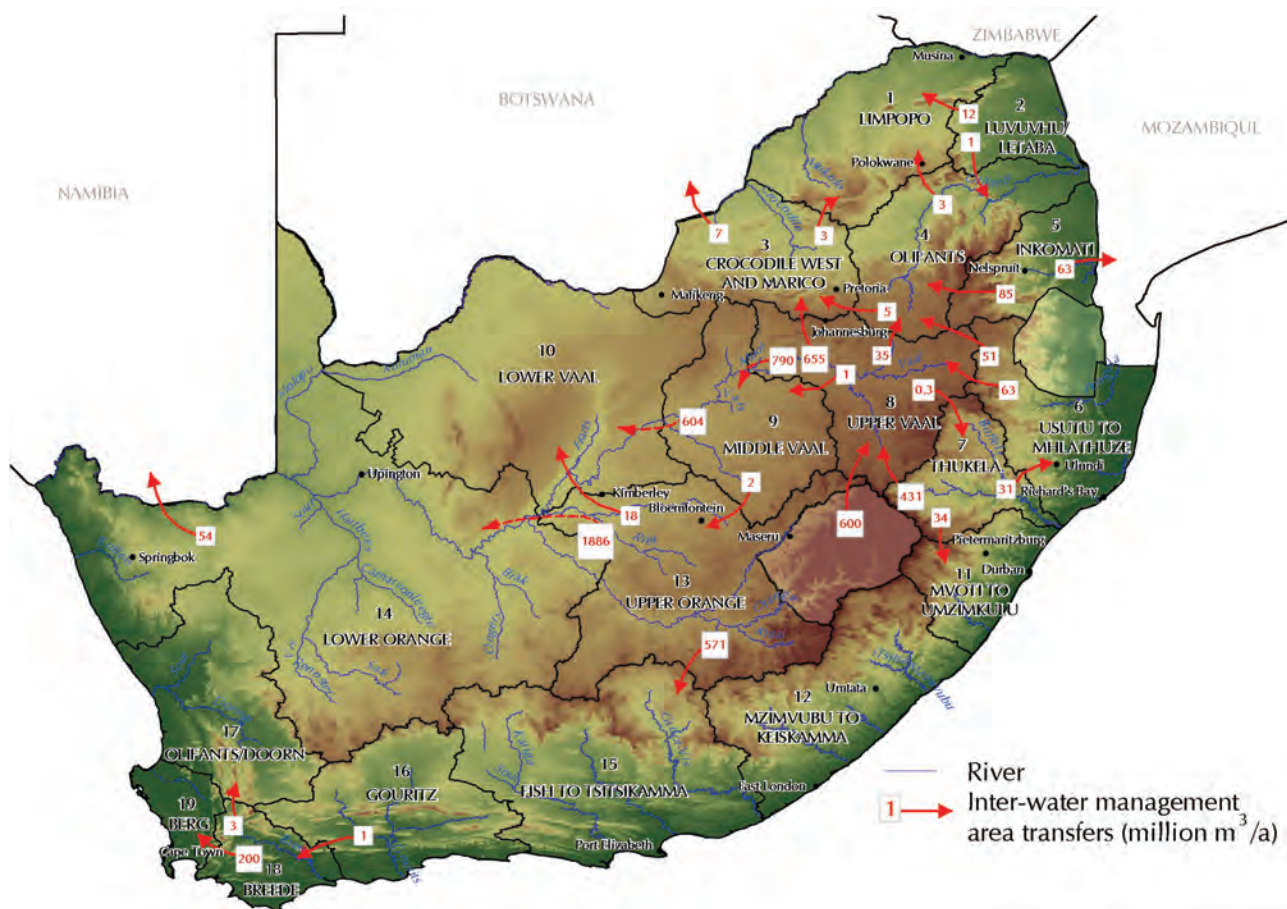


Figure 4.2 Map of South Africa showing the flows of water between water management areas

Source: DEAT, 2010⁵

Cities as life-supporting systems continued

In 2004 the Department of Water Affairs and Forestry (DWAF) projected water demand and supply in each of the catchment areas to estimate whether supply would be able to meet demand in the future. Water supplies were adjusted to account for flows between catchment areas, and estimated demand was based on high growth in water requirements resulting from population growth and economic development. Figure 4.3 summarises the findings of this exercise.

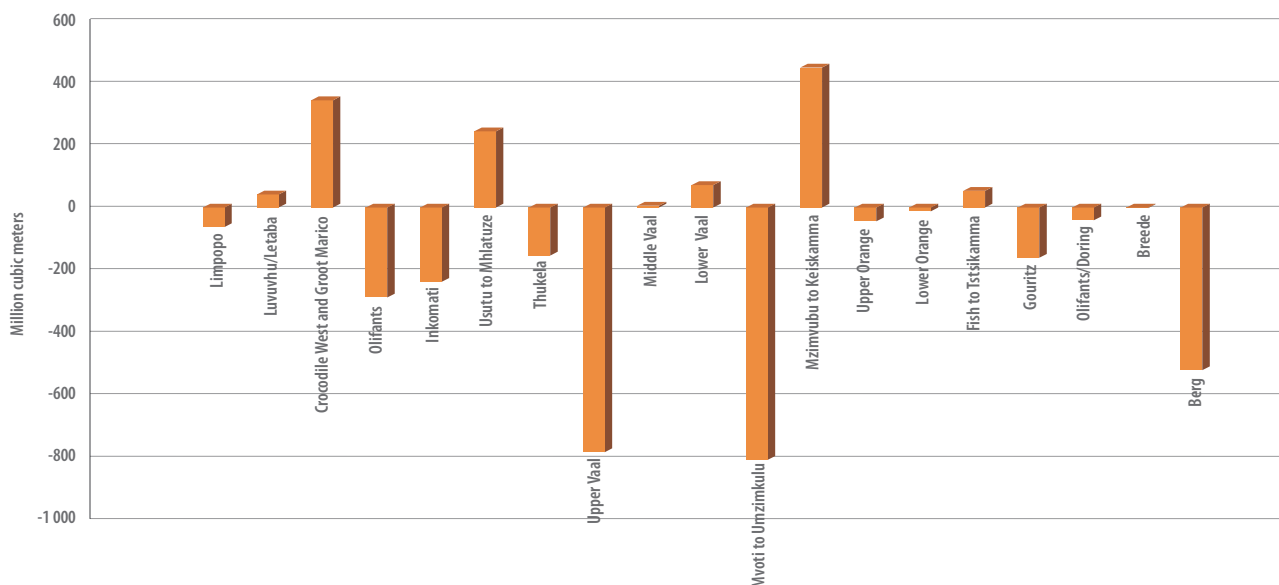


Figure 4.3 Projected water surpluses and deficits in South Africa's 19 water management areas (WMA) by 2025

Source: DWAF, 2004⁶

The data indicates that the municipalities of eThekweni and Msunduzi (Mvoti to Mzimkulu WMA), Johannesburg and Ekurhuleni (Upper Vaal WMA, and Crocodile West and Marico WMA), Cape Town (Berg WMA) and Mangaung (Upper Orange WMA) are likely to face the most severe water challenges in the coming years if nothing is done to slow or halt growth in water demand. Buffalo City (Mzimvubu to Keiskamma WMA) and Tshwane (Crocodile West and Marico WMA) may appear to be in safer positions, but recent droughts in the Eastern Cape and floods in Gauteng have shown that climate change is making rainfall patterns increasingly unpredictable and estimations of water surpluses are far from guaranteed.

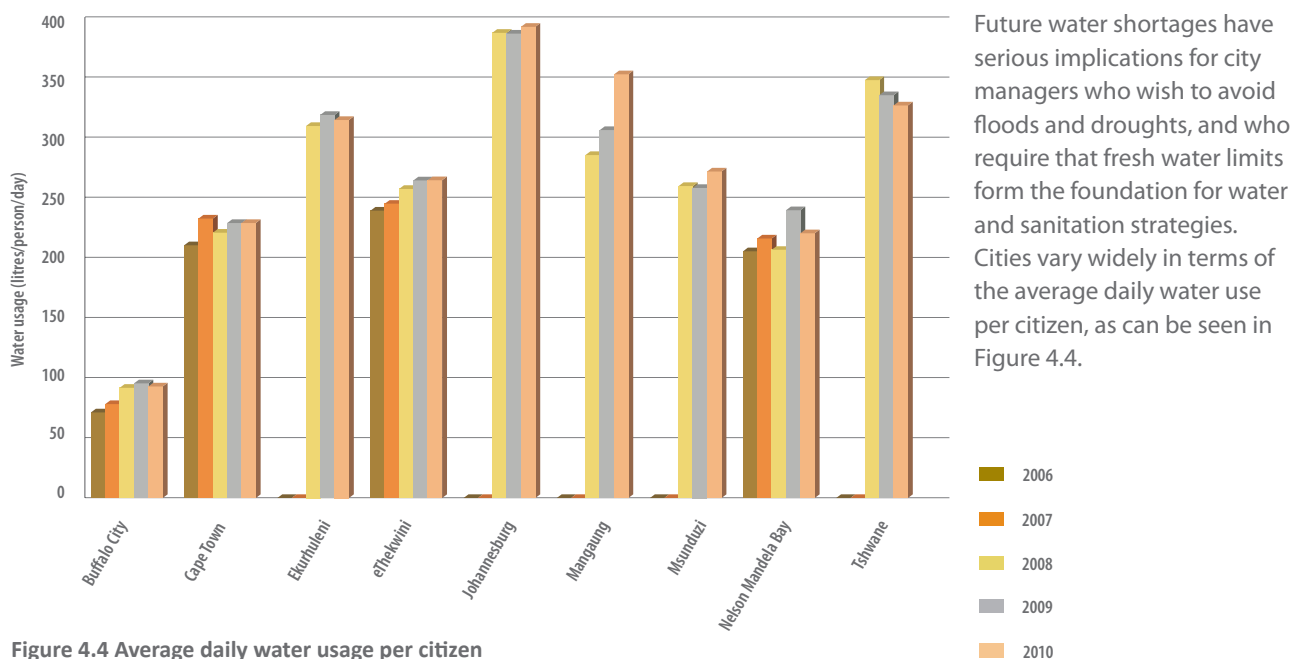


Figure 4.4 Average daily water usage per citizen

Source: SACN, 2010⁷

There are a number of factors – from climate patterns to the nature of economic activities – that influence a city's water consumption per person, but the above comparison illustrates that some cities are less thirsty than others and that, in some cases, it has been possible to stabilise or reduce per person water consumption over time while still achieving economic development objectives.⁸ Cape Town was able to significantly reduce water consumption per person during the droughts of the early 2000s by implementing water restrictions. In the years since restrictions were lifted, behavioural changes have kept water consumption at lower levels than before.

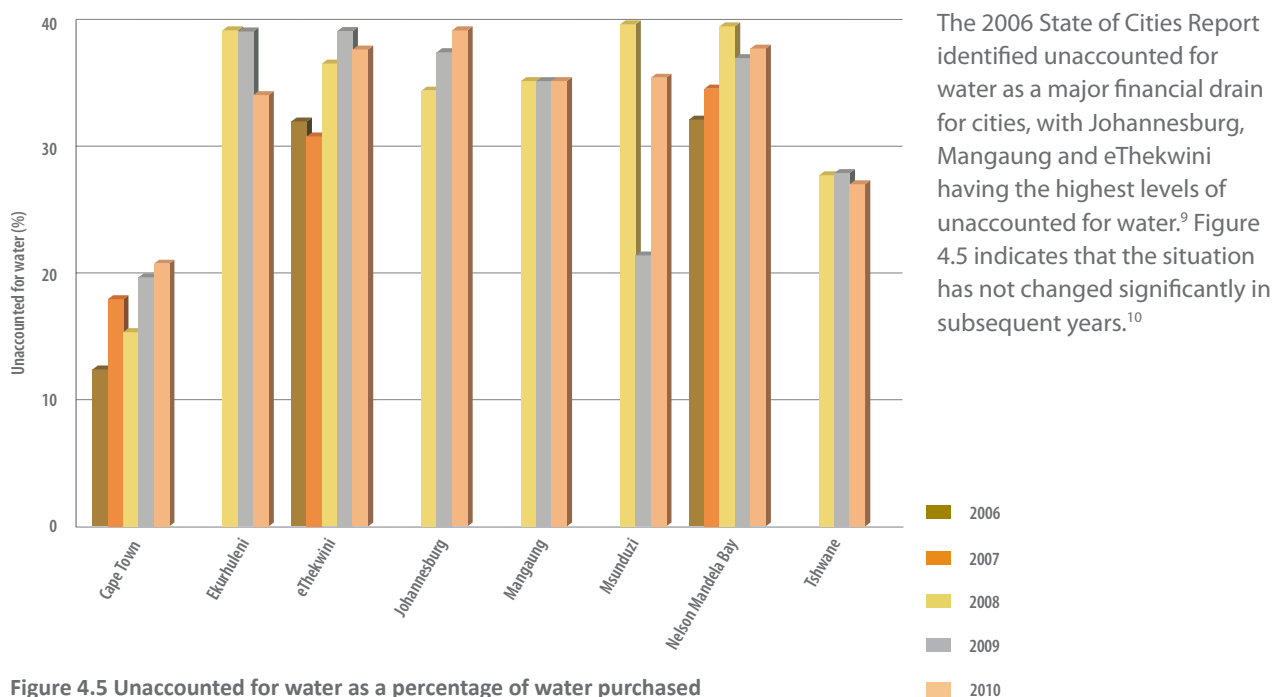


Figure 4.5 Unaccounted for water as a percentage of water purchased

Source: SACN, 2010¹¹

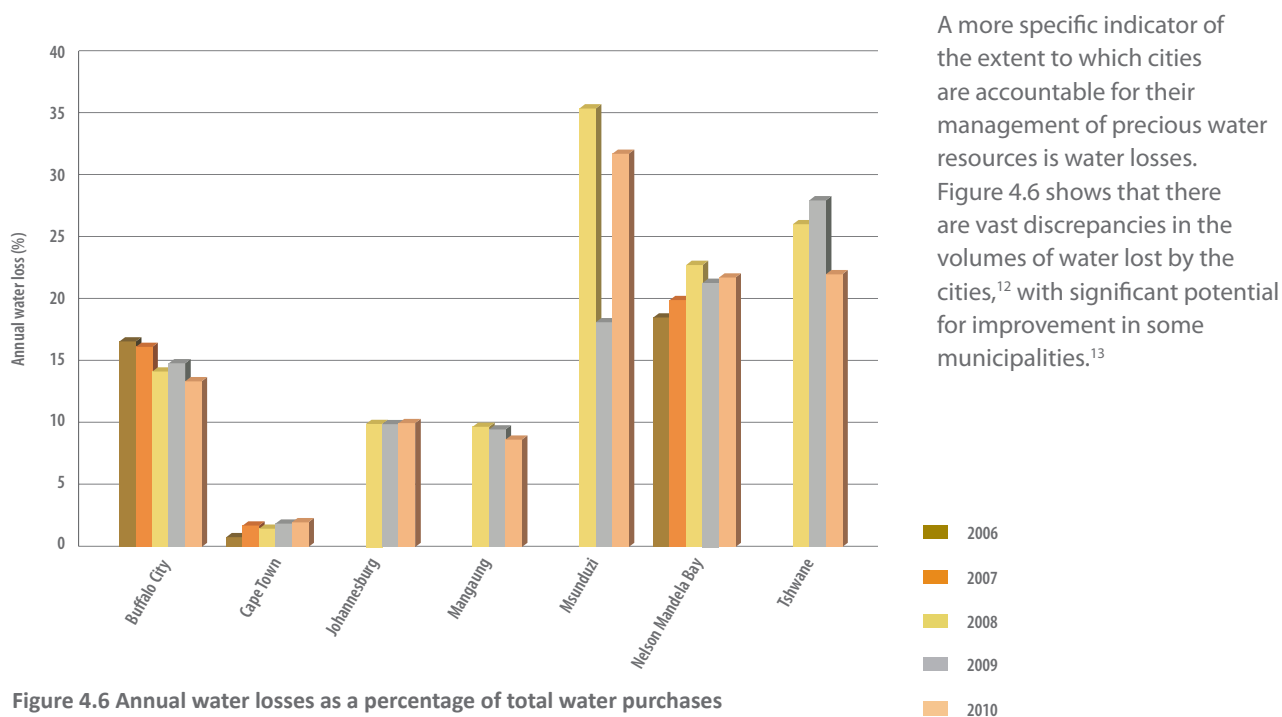


Figure 4.6 Annual water losses as a percentage of total water purchases

Source: SACN, 2010¹⁴

Cities as life-supporting systems *continued*

Reducing water wastage is a useful starting point for improving the management of city water resources. Efforts to reduce non-revenue water typically involve identifying where water is being lost, and instituting measures to prevent leaks and avoid wasteful water use. Some municipalities waste a lot more water than others, and lose out on an important source of revenue in the process. Realising the benefits of improved water resource management, a number of cities have implemented ambitious Water Conservation and Demand-side Management (WC/WDM) projects and strategies.

- Having observed that the bulk of its water losses were the result of flat-rate water tariffs, Johannesburg Water launched Operation Gcin'amanzi in 2003 to reduce non-revenue water in Soweto. By installing pre-payment water meters, upgrading water pipes and reducing in-house plumbing leaks, the project created 1200 jobs, reduced water demand by around 85%, and saved 38 billion litres of water in the first two years. According to Johannesburg Water, households benefit from being able to control their water bills, and those using more than their free basic allowance have been able to reduce their expenditure on water by around 70%.
- In 2004 the Mangaung municipality calculated that it was earning an income on 51% of the water it distributed. To address high water losses, it worked with Rand Water and a private consultancy to formulate a WC/WDM strategy for identifying and prioritising system leaks for repair as well as measures to reduce network losses and improve demand management. Around 100 locals were trained in basic plumbing skills, and water wastage was reduced by an average of 41% per household.
- In 2007 the City of Cape Town implemented a 10-year WC/WDM strategy aimed at delaying the construction of water augmentation projects and restricting projected potable water demand to a growth rate averaging no more than 1% per annum from 2007 to 2017. It includes initiatives to reduce non-revenue water, fix water leaks, improve water efficiency among consumers and protect the city's water resources.
- eThekweni Municipality will soon commence the replacement of its crumbling asbestos and cement water pipes as part of the city's efforts to reduce leaks and improve the efficiency of its water supply.

Such initiatives indicate a growing awareness of the importance of water resource management, starting with reducing wastage. In the future, there is potential to take the concept one step further by making improvements to the way in which cities use water so that the same benefits can be derived from less water. Some cities are already addressing this in their municipal buildings and housing projects.

Electricity

In comparison to other countries, South Africa's urban economies are highly energy intensive relative to levels of human development. The national grid from which cities purchase their electricity is powered predominantly by coal-fired power stations, with a small portion from nuclear and other energy sources. Coal and nuclear energy require resources extracted from the earth's crust, linking the cost and supply of electricity to their availability. Polluting mining processes and the impact of power plants on the consumption of fresh water and production of CO₂ and other harmful wastes present significant challenges to the environmental sustainability of the country's base power supply.

Use of the Eskom grid renders city economies vulnerable to rising electricity prices caused by increasing resource prices, carbon taxes and the costs of capacity expansion. Until Eskom's electricity supply catches up with demand, users will also be susceptible to blackouts which can have devastating effects on local economies. South Africa's cities face the additional challenge of high levels of energy inequality, characterised by a vast disparity between the electricity-intensive lifestyles of the wealthy minority and those of the urban poor who burn paraffin and other combustibles for heat and light with adverse implications for their health and for the environment.

“The [Energy Efficiency] strategy is intended to decrease final energy demand by 12% between 2005 and 2015, through reducing usage by 15% in the commercial and public building sector and 10% in the residential sector.”

Urban SEED programme and City Energy Support Unit

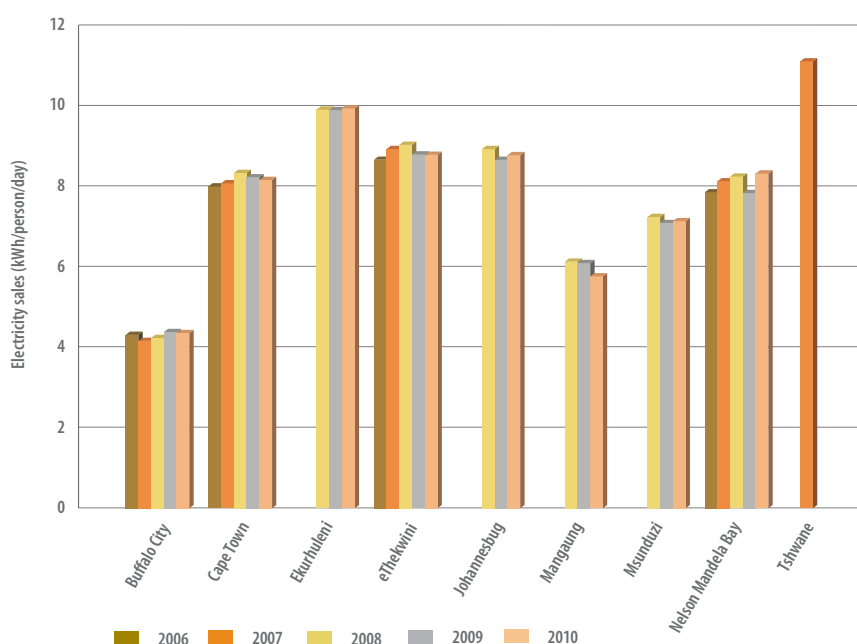
The Urban Sustainable Energy for Environment and Development (SEED) programme of Sustainable Energy Africa (SEA) is a national capacity building programme that has pioneered sustainable energy within South African cities. In its first phase, SEED 'planted' energy advisors within local governments with a focus on integrating energy efficiency into housing delivery. The second phase of the SEED programme 'germinated' city-wide, integrated energy data collection and planning processes.

Technical work by SEED established that energy efficiency and the implementation of solar water heaters could reduce city energy consumption by as much as 25% and, to this end, SEED supported mechanisms for mass implementation in these areas in Phase 3 of the programme. SEED also provided support for the process of institutionalising the new local energy work of cities.

The focus of Phase 4 is on reconceptualising the structural underpinnings of South Africa's cities – including spatial, transport and infrastructure planning – as the basis for achieving a low-carbon future, with a special focus on informal housing and poverty. SEED's work revealed a need for ongoing support for cities. In response, SEA established the City Energy Support Unit (CESU) in 2008. CESU aims to contribute to national policy development (in support of city transition to low-carbon approaches), provide direct technical and facilitation support to cities, and offer training, capacity building and materials that draw on SEA's considerable experience gained through direct engagement with cities.

Source: Sustainable Energy Africa¹⁵

Cities can build their energy security using a combination of efficiency improvements to the energy services they provide, and can use measures to diversify their energy sources beyond grid electricity. As the 2006 State of Cities Report observed, energy efficiency is becoming an increasingly important part of city energy strategies. Yet it is often seen as being financially unattractive given the significant portion of municipal revenues generated by electricity sales. This challenge is not unique to South Africa, and examples from other countries can provide inspiration for possible solutions. For example, California's Public Utilities Commission (CPUC) provides financial incentives to energy utilities that sell less than the estimated demand for energy, thus allowing them to work with their customers to make energy efficiency improvements and reduce their bills.



The Department of Minerals and Energy released the Energy Efficiency Strategy for the Republic of South Africa in 2005, which aims, among other things, to encourage energy efficient practices. The strategy is intended to decrease final energy demand by 12% between 2005 and 2015, through reducing usage by 15% in the commercial and public building sector and 10% in the residential sector. There are a number of factors that influence city energy consumption, and measures of electricity consumption per person provide a rough indication of which cities have the most room for efficiency improvements (see Figure 4.7).¹⁶

Figure 4.7 Electricity sales

Source: SACN, 2010¹⁷

Cities as life-supporting systems continued

Energy-efficient municipal operations provide a way to cut running costs while reducing negative impact on natural capital. This can be achieved by targeting the main consumers of electricity, including city buildings, street lights, traffic lights and infrastructure for water and wastewater treatment. Table 4.1 shows that a wide range of energy efficiency (EE) initiatives are being embraced by South African cities.

Table 4.1 Energy efficiency initiatives used in various South African cities

	Buffalo City	Cape Town	Ekurhuleni	eThekweni	Johannesburg	Mangaung	Nelson Mandela Bay	Tshwane
Awareness and Education	The city is working closely with Eskom to build EE awareness.	The city has EE campaigns targeted at residential and commercial sectors, and the youth, and provides energy saving information in staff newsletters, on its public website and via publications.		The city is building awareness of EE through road shows, energy efficiency workshops, street theatres, municipal vehicle advertising, business forums, employee awareness programmes and community fairs.	Two schools have been retrofitted with higher-efficiency tubular fluorescent lighting and electronic control gear, and three schools were given internet-based meters to allow them to track their electricity consumption. This is accompanied by fun learning activities around climate change and energy.	MLM Environmental Management Unit distributed EE tips to employees via intranet and email. Centlec distributed information pamphlets to the community.		
EE Levy			An EE levy charged on electricity tariffs will be used to retrofit municipal buildings. Unspent funds are ring-fenced so that they can be accumulated.		An EE levy charged on electricity tariffs will be used to purchase SWHs for municipal-owned entities.			
Metering	The city is in the process of providing its large electrical users with remote metering, allowing them to monitor their electricity usage for a nominal fee.	The city is investigating the use of smart meters.	1500 Internet-based meters have been installed to allow businesses, industries and council to track their consumption live.	The city is investigating the feasibility of smart meters.	Smart meters have been rolled out.	The city is planning to install smart meters in the next financial year.	To reduce electricity theft, the city rolled out a pilot project of 3000 smart meters to assess their viability.	

	Buffalo City	Cape Town	Ekurhuleni	eThekweni	Johannesburg	Mangaung	Nelson Mandela Bay	Tshwane
Municipal Operations				The city has initiated an Energy Management Implementation plan that will see the city operations' use of electricity managed through a central system. A systems optimisation approach will be used to ensure EE.	EE pump systems will be installed at the city's water treatment works.	Broken bulbs are replaced with new EE bulbs at all municipal facilities.	Feasibility studies have been completed for EE in water reticulation and waste water treatment plants, with the potential to save 2.5–5 MW.	
Municipal Buildings	The city is in discussion with Eskom about implementing EE projects for all municipal buildings.	EE retrofits have taken place at a number of council buildings and nature reserves, realising energy savings in the region of 12–20%.	EE retrofits of 200 municipal buildings are currently underway. Approximately 3000 SWHs are installed in various council-owned entities.	A building EE programme has been initiated with support from AFD [<i>Agence Française de Développement</i>]. The programme will begin with the development of a comprehensive database of buildings and the installation of Building Management Systems.	Following an audit, five municipal buildings have been selected for retrofitting with an annual guaranteed saving of 25%. This is the first guaranteed shared savings model to be implemented in South Africa.		All municipal buildings have been fitted with EE lighting.	Government buildings have been retrofitted with EE measures. This includes a number of schools.
Rental Stock		A total of 45 000 council-owned rental housing units are being retrofitted with energy-saving initiatives such as insulated ceilings.	Water and energy saving measures are being installed in the council's 51 rental apartments.	A pilot communal solar water heater (SWH) programme has started in Kwa-Debeka Hostel. If successful it will be broadly implemented.				
Low-income housing retrofits	Discussions about implementing SWH are underway with Eskom.	The city is involved in a number of small-scale ceiling retrofit projects. The Kuyasa project saw just over 2300 households fitted with ceilings, CFLs [compact fluorescent lights], SWHs and white roofs.		Low-income houses are being fitted with low pressure SWHs at no cost to council. By February 2011, 3000 units had been installed.	Energy-saving retrofits have taken place at the Cosmo City Climate-Proofing of Urban Communities Programme and Alexandra Ecosystems housing projects.		About 120 000 SWHs are being installed in low-income households with funding from the National SWH Energy Efficiency and DSM [Demand Side Management] Grant Fund.	Donors have funded the installation of 200 SWHs in off-grid rural households.

Cities as life-supporting systems continued

Table 4.1 Energy efficiency initiatives used in various South African cities (continued)

	Buffalo City	Cape Town	Ekurhuleni	eThekweni	Johannesburg	Mangaung	Nelson Mandela Bay	Tshwane
Mid–high income housing retrofits		A Request for Proposal is to be sent out for the installation of 300 000 SWHs in the middle to high-income residential sector.	A Request for Proposal is being developed to allow the Central Energy Fund (CEF) to offer consumers finance for 256 000 SWH systems.	Eols [Expressions of Interest] have been received for a neighbourhood SWH programme. This will see bulk purchases of SWHs at a neighbourhood level to bring prices down. The target is 30 000 units by 2015.	A Request for Proposal has been sent out for a 210 000-unit SWH programme in the middle to high-income residential sector, with potential for city-wide rollout.		With funding from the CEF, the city sent out a Request for Proposal for the installation of 60 000 SWHs over 5 years in middle to high-income residential households.	
EE street & traffic lights	The city is in the process of changing a large number of street lights to EE lighting.	A number of the city's traffic lights have been retrofitted with EE bulbs. EE street lights were installed around the Cape Town Stadium, and EE lighting was retrofitted at the Philippi Stadium.	EE traffic and street lights are being investigated through pilot projects.	About 800 traffic light intersections are being retrofitted with LEDs. LED street lighting is being piloted and business modelling for street lights is being conducted with the support of the Clinton Climate Initiative.	Solar-powered traffic and street lights have been installed around the CBD and two informal settlements, and the use of flexible PV panels is being explored.	The city is currently retrofitting street lights.	The city has retrofitted 30 000 streetlights and 100 traffic lights with EE bulbs or solar power sources.	Street lamps have been replaced with 70 W high-pressure sodium lamps at a cost of R1.6 million, with an estimated payback period of 8.2 years.
EE bulb exchange	Eskom is conducting exchanges with Municipal permission.			The Eskom exchange programme was run throughout the metro, but has subsequently ended.		Bulb exchange has been funded by Eskom since 2009.		In March 2010 the city partnered with Eskom to distribute 1.8 million 14 W CFL bulbs via participating shopping centres.
Institutional arrangements		The city established an Energy and Climate Change Sub-Committee and revolving fund for energy audits and retrofits.		The city established an Energy Office within the Treasury Department to specifically initiate EE, renewable energy and climate change mitigation programmes.				

Source: Sustainable Energy Africa, 2010¹⁸

Although many energy-efficiency programmes are being implemented at local level, municipalities need to plan for increasing demand as a result of growing populations and economies in the coming years. Accurate quantitative records of electricity consumption need to be kept to estimate the savings accrued from these projects so that their effect on resources and expenditure can be evaluated in future reports.

Win-win solution – a new approach to housing provision

The rollout of housing to South Africa's poor presents an ideal opportunity to ensure that cities grow in a more resource-efficient manner. The table below shows how different approaches to building one million government houses can achieve improved quality of life and reduce household bills for the poor while slowing growth in demand for water and electricity infrastructure and reducing greenhouse gas emissions.

Scenarios	Interventions	Capital cost (Rands) (difference from standard)	Average savings (Rands) per beneficiary household/yr	Water savings (KL/yr)	Electricity savings (MWh/yr)	CO ₂ Emissions reduced (Tons/yr)
Minimum Package of Sustainable Technologies	CFL light bulbs, variable-flush toilets, aluminium windows, duplex units (one shared wall), compressed earth bricks	3 456 million less	2 038,76	24 192 000	420 000	504 000
Moderate Package of Sustainable Technologies	All of the above plus low-flow plumbing fixtures, cisterns fed by hand basins, SWH and efficient design features	2 079 million more	3 880,83	66 312 000	2 424 000	2 908 800
Maximum Package of Sustainable Technologies	All of the above plus rainwater harvesting and insulated ceilings	24 370 million more	4 341,97	81 972 000	2 636 500	3 163 800

Source: Sustainable Housing Calculator ¹⁹

Moving the poor into standard government housing may allow them easier access to beneficial services, but increased consumption of water and electricity typically brings with it a financial burden in the form of significantly higher utility bills. With a degree of innovation in the way cities meet their housing obligations, a basic package of sustainable features can be implemented at lower cost than standard housing models which would allow homeowners to save money on electricity and water. Above this level, additional features may cost more upfront but can significantly improve resource productivity, freeing up more funds for beneficiaries to spend on necessities.



Cosmo City Climate-Proofing of Urban Communities Programme

In 2010, the City of Johannesburg (CoJ) implemented a Climate-Proofing of Urban Communities Programme in the Cosmo City mixed-income housing development. The project aims to demonstrate the potential of creating more liveable, resource-efficient and resilient urban communities using renewable energy technologies, energy efficiency and greening in low-income government housing.

The programme involved the installation and distribution of low-pressure Solar Water Heaters (SWHs), insulated ceilings and energy-efficient lights to 770 RDP homes, as well as planting fruit trees and indigenous plants at a further 700 homes and promoting rainwater harvesting in two schools. The programme aimed to assist residents in reducing their energy costs and enhancing their quality of life, creating local jobs, developing skills and mitigating the impacts of climate change.



From monitoring temperature, energy and water consumption in five similar Cosmo City houses with different orientations, room layouts and usage patterns, it has been estimated that the average reduction in carbon emissions due to the ceilings and SWHs totals 1635 kg CO₂ per year. This helps to reduce emissions and pollution associated with the city's electricity demand, and allows the household to benefit from a R1,154.94 saving in electricity per house per year (based on December 2010 prices).

With a focus on employing 80–100% local labour, a total of 118 jobs were created over the lifetime of the programme, and a local technician has been trained in the ongoing maintenance of the SWHs. Instead of importing low-pressure SWHs, the project supported local manufacturers in order to encourage the growing industry.

Through on-the-job training in the local community, skills in plumbing, carpentry, ceiling and solar water heater installation and gardening were developed. Community-based educators play an ongoing role in teaching residents about the safe and effective use of efficiency interventions, garden maintenance, water conservation, waste minimisation and environmental conservation.

How it was achieved

The programme forms part of the Climate Change and Energy Efficiency theme of the Urban Environmental Management Programme (UEMP), and was wholly funded by the Royal Danish Embassy in Pretoria. It was implemented by the CoJ's Environmental Management Department in consultation with other city departments and entities such as City Power, Infrastructure and Services, Development Planning and Urban Management and Johannesburg City Parks. The interventions were provided free of charge and are owned by the residents, adding value to their properties.

The total cost of implementation was approximately R12 million. It is hoped that up to 90% of the cost of the SWHs and their installation (R4,327.62 per house) will be recouped from the Eskom SWH Programme subsidy, and maintenance of the SWHs will be covered by carbon income once the project achieves Gold Standard CDM certification.

Lessons learned

- **Financial models** need to be improved to make the large-scale rollout of SWHs more financially viable by considering Eskom rebates, carbon revenues and resident contributions to cover both installation and long-term maintenance costs.
- **Post-installation maintenance of SWHs** needs to be incorporated into both financial models and community empowerment programmes.
- **Ceiling retrofits** proved to be more expensive than the installation of SWHs, so it would be wise to include ceilings in RDP house design specifications.
- **Selection criteria** for beneficiaries, labourers and contractors need to be fair and transparent, and consistently applied.
- **Local labour** must be stipulated in the Terms of Reference to ensure that local skills development takes place and to improve the chances of project acceptance by the community.
- **Monitoring mechanisms** to assess internal temperatures, electricity consumption, water consumption and emissions need to be included in project plans.

Transport fuel

South Africa's liquid fuels are fossil fuel based on liquid fuels extracted from the earth, and around half of the energy consumed in our cities is transport fuel. The country converts coal and natural gas into synthetic fuels which meet around 36% of its liquid fuel demand, but the remaining 64% is imported from other countries, namely Saudi Arabia, Iran, Nigeria and Angola. The process of creating liquid fuels is energy intensive, and is one of the largest sources of pollution in the world. Synthetic fuels derived from fossil fuels are not a sustainable alternative, so resilient cities need to assist their citizens in reducing their dependence on these substances.

While cars have made it possible for people to travel greater distances between home and work, the pursuit of a private transport model has increased CO₂ emissions, water pollution, degradation of open land, commuting times, road accidents and transport costs and vulnerability to fossil fuel supply and price fluctuations. At the same time, poorly managed urban sprawl has seen the extension of expensive utility services beyond the urban edge to service a minority of wealthy vehicle owners, in many cases at the expense of infrastructure maintenance in more populated areas.

Measures of population density can be used as a rough indication of the extent to which a city's citizens are reliant on motorised transport and fossil fuels for their livelihoods (see Chapter 3). Higher densities can reduce distances between home and work, and make investments in public transport more financially viable. There is also a clear inverse relationship between a city's population density and greenhouse gas emissions. For example, an increase in density from 2500 to 5000 people per km² equates to a decrease in emissions of roughly 40%.²⁰

The 2006 State of the Cities Report highlighted low urban density as one of the critical factors inhibiting progress toward sustainable South African cities. It also identified a trend away from the use of high occupancy vehicles toward lower occupancy vehicles like taxis and private cars that use more fossil fuel and produce more emissions per commuter. The report noted high levels of dissatisfaction with the accessibility, safety and cost of public transport, and observed that bus and rail commuter subsidies were not effectively reaching the poor.

Alternative fuels for city vehicles



In addition to the use of public transport as a means of reducing fossil fuel consumption per person, some cities are taking their efforts to address the peak oil challenge to the next level by looking at alternative fuels. The City of Johannesburg's Metrobus is conducting a green bus pilot project that, if successful, could see 170 of its buses running entirely on bio-ethanol (produced from sugar beet, sugar cane or grain) or compressed natural gas (CNG). The project is part of the Johannesburg mayoral green transport initiative, and was prompted by the need to replace a number of ageing diesel buses in the Metrobus fleet.

Two trial buses – one powered by bio-ethanol and the other partly by CNG – have been operating around Johannesburg as part of the project. One of the buses, donated by German manufacturer MAN, is a converted hybrid that runs on CNG and diesel.

The other was donated by the Swedish manufacturer Scania, and runs on bio-ethanol. The two buses have lived up to expectations, and Metrobus is pursuing funding for the purchase of additional buses for more extensive trials.

Both bio-ethanol and CNG buses comply with Euro 6 zero-carbon emission standards that will come into force in Europe in 2014. Currently most of the estimated 20 000 buses in South Africa comply with Euro 2 standards, which date back to 1996. Johannesburg is not the only city experimenting with alternative fuels: Ekurhuleni currently runs 15 council vehicles on liquefied petroleum gas (LPG) and plans to convert 10 to run on natural gas, while eThekweni is looking to convert some of its fleet to run on biodiesel.

Cities as life-supporting systems *continued*

Public transport has long been recognised as a priority in making South Africa's sprawling cities more accessible to the poor, who spend a greater proportion of their income on transport than car owners do. It is also pivotal in reducing fossil fuel dependence and greenhouse gas emissions as private automobiles consume around three times more energy and produce double the amount of CO₂ per passenger than public transport. In the lead up to the 2010 FIFA World Cup™, a significant focus of South Africa's infrastructural investment was the improvement of public transport networks, as discussed in Chapter 3. It is too early to measure the effect of these sustainable transport investments on resources and resilience, but they are likely to show significant reductions in fossil fuel consumption per person, transport costs for the poor, pollution and greenhouse gases emitted by the transport sector in the coming years.

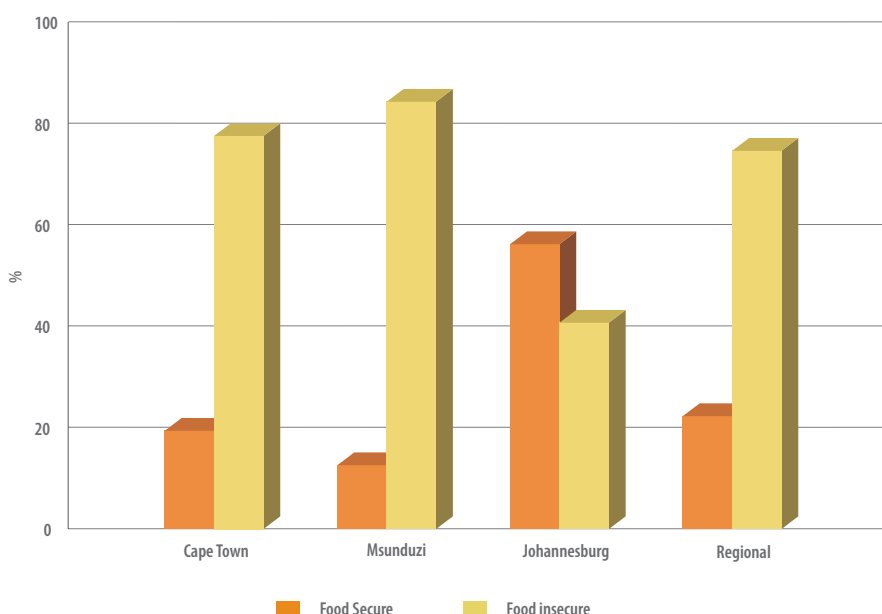
ENHANCING LOCAL CAPACITY

Cities are centres of human activity, and as such they rely on food and water to support life. The locations of the world's earliest cities were chosen for their proximity to fresh water and fertile soils, and this allowed them to be largely self-sustaining. Where trade initially allowed for certain luxuries to be imported, advances in motorised transportation have taken this principle to the extreme. South Africa's cities have become dependent on the outside world for essential goods and services, and the associated reliance on fossil fuels has rendered their inhabitants highly vulnerable to oil supply fluctuations and price increases. The result can be seen in significant food price hikes that have most harshly affected the urban poor.

To be resilient to future changes, cities need to consider the sources of their food, water, energy and quality of life and try to live within the environmental limits of their localities. A city that can supply sufficient essential goods and services to its citizens stands a better chance of prospering in the face of external shocks than one that relies on the outside world. Building local capacity involves valuing, protecting and enhancing the ecosystems that provide goods and services so that cities sustain their inhabitants, and provide pleasant places to live. This requires a shift from damage minimisation toward efforts to improve and enhance the free goods and services offered by local natural systems so that more people can afford to benefit from them in the future.

Food supply

Sufficient food is essential for a healthy, happy and resilient city. Scarcities exacerbate conditions of illness, despair, crime and other social ills that increasingly large municipal budgets are required to address. Food security resolves a number of urban problems and is key to sustainability. As such, it needs to play an integral role in city management strategies for resilience. South Africa's Integrated Food Security Strategy of 2002 defines food security as 'physical, social, and economic access to sufficient, safe, and nutritious food by all South Africans at all times to meet their dietary and food preferences for an active and healthy life.'²¹



With poverty shifting from being a rural issue to an urban one, city managers can no longer ignore the problem of urban food security. A 2009 study commissioned by the Development Bank of Southern Africa (DBSA) looked at food security among the urban poor²² in three South African cities (see Figure 4.8) and found that an average of 70% are food insecure²³ (slightly lower than the sub-Saharan average of 77%).²⁴

Figure 4.8 Levels of household food insecurity among the urban poor

Source: Battersby-Lennard, 2009²⁵

Msunduzi and Cape Town have the highest levels of food insecurity with 87% and 80% respectively, and Johannesburg has a significantly lower rate of 40%. This is attributed to higher income levels among the Johannesburg respondents, which, on average, were more than double those of their counterparts in the other two cities.

The food security challenge is one of affordability and access to food. Food prices appear to be the main driver of food insecurity, rising faster than inflation. The DBSA study found that 79% of low-income households had less food than they required in the second half of 2008 as a direct result of rising food prices. Instead of a wide range of options for accessing food, South Africa experiences what can best be described as a dichotomy between large food retailers and small-scale informal traders, with little in between either geographically or economically. The percentage of food sold via supermarkets grew from less than 10% in 1992 to nearly 60% in 2002, making South Africa the world's most supermarket-dominated food economy.²⁶

Those who cannot access supermarkets or who cannot store bulk food purchases resort to the regular use of small shops and informal stalls, making these the most common source of food in poor areas (as illustrated in Figure 4.9).

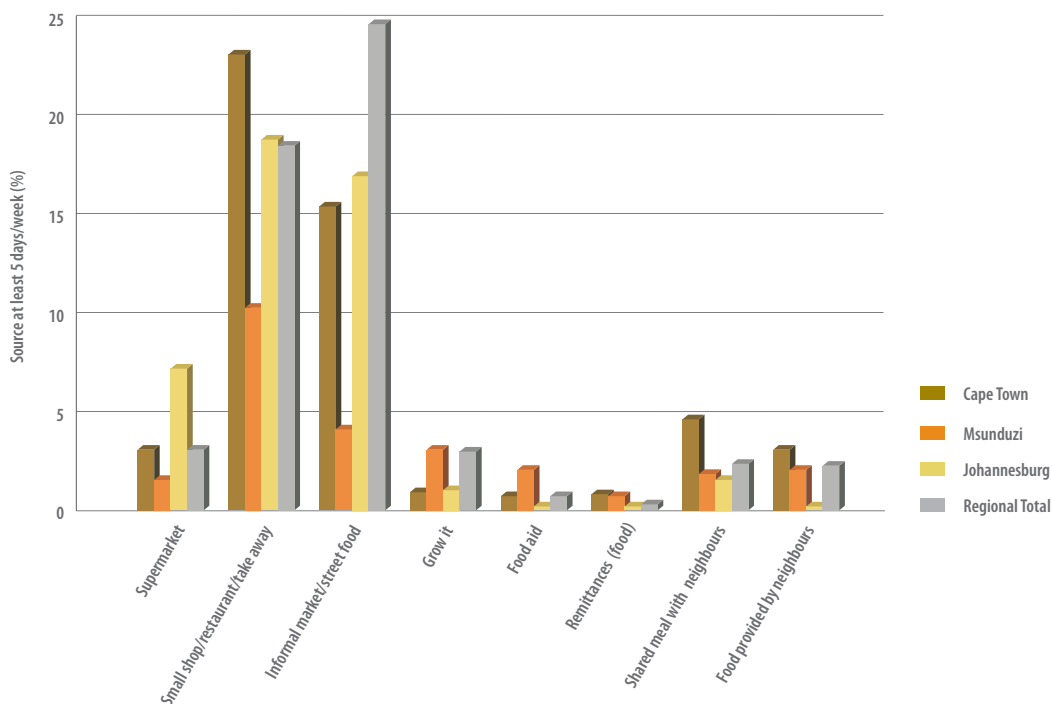
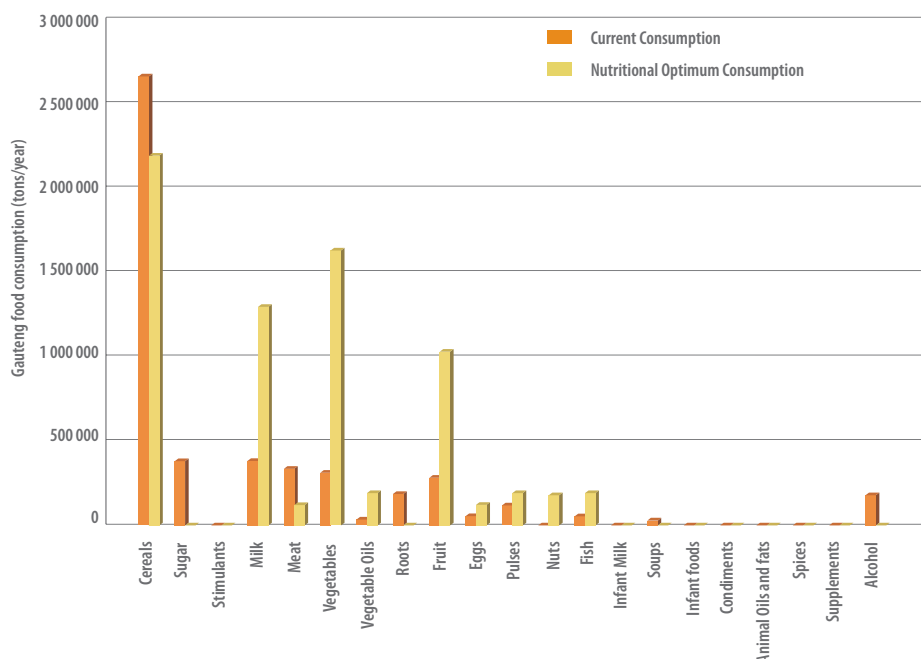


Figure 4.9 Sources of food used by poor households at least five times per week

Source: Battersby-Lennard, 2009²⁷



Cities as life-supporting systems continued



With inadequate kitchen facilities in informal dwellings, prepared food is often the only option. In addition to a price premium for the convenience, this food tends to be limited in diversity and poor in nutrients, resulting in increased obesity and raising the mortality and morbidity rates of the urban poor. As an indication of this, data for the Gauteng province indicates that the consumption of fresh vegetables, fruit and milk is substantially below the nutritional optimum, as shown in Figure 4.10.

Figure 4.10 Gauteng food consumption relative to the nutritional optimum

Source: Spencer et al., 2010²⁸

Very few poor households in South Africa's cities grow their own food, with Cape Town at 1%, Johannesburg at 3% and Msunduzi at 11%. Of those, 31% are entirely dependent on this source of food. The small percentage of food gardeners highlights the poor's dependence on money-based food systems, and points to a significant untapped potential for South Africa's poor to reduce their dependence on the job market for survival.

Relying on food grown elsewhere makes cities extremely vulnerable to increases in oil and energy prices. The further food is grown from the point of consumption, the greater the need for refrigeration and the higher the percentage of food that perishes in storage and transport. Transportation is almost entirely oil-fuelled, and industrial farming methods have also become heavily dependent on oil to run heavy machinery and produce artificial fertilisers and pesticides. Over the years, these chemicals pollute water bodies and destroy soil fertility, increasing dependence on expensive synthetic inputs to maintain yields.

Intensive agriculture on small plots in urban areas has been shown to make more efficient use of land and water than conventional commercial mechanised farms, and can yield 2–16 times more food.²⁹ Forward-thinking cities such as New York, Hong Kong, Portland, Havana and Beijing make food more accessible and enhance their resilience by actively encouraging a combination of urban agriculture and local-level market systems. These cities have reduced their dependence on imported food for basic needs, and some even export produce to surrounding rural areas. Co-operative farms and markets have helped to build inner-city communities, leading to improved integration and strengthening social resilience.

South Africa is a signatory to the Rome Declaration on World Food Security of 1996, and formulated the Integrated Food Security Strategy in 2002 which has been promoted through a number of government departments. The potential for low-external-input urban agriculture to enhance food security and alleviate poverty has been recognised by some South African cities, and there have been a number of recent efforts to encourage it.³⁰

- The City of Cape Town's Urban Agriculture Policy of 2007 supports urban agriculture within poor areas of the city to facilitate economic development and improve food security. Areas of focus include supporting food producers, granting access to land and water, the formation of partnerships, and the implementation of pilot projects.
- eThekweni provides policy and practical support for urban agriculture through its Parks and Recreation Department, which makes areas of land available for agriculture in poor areas of the city. Policy addresses issues of support for its urban and rural farmers, the formation of relevant institutions and improving access to land.

- The Msunduzi municipality has partnered with NGOs, educational institutions and provincial government departments to form the African Roots Project aimed at promoting the cultivation of indigenous vegetables in communities affected by HIV/Aids. Food gardens have been established to teach affordable organic farming methods, seed saving, and basic nutrition.
- Mangaung has formed the Municipal-University Community Partnership Programme (MUCPP) in association with a local university and international donors to stimulate and support the development of agriculture in poor communities.

Although these efforts are a step in the right direction, none of the cities appear to have embraced the full potential of a flourishing local food sector as a means of breaking the cycle of poverty and unsustainable urban growth. Instead of limiting food production to a temporary poverty alleviation measure for individuals, a 'food-centred' approach to city policy and planning on every level would open up opportunities for job creation, community building, improvements in health and organic waste management, and greater energy independence. There is also a strong economic argument for encouraging local food economies. A 2001 study by the New Economics Foundation in the UK suggests that money spent on locally produced food could generate almost double the amount of income for the local economy than purchases from supermarkets do.³¹

Food is a commonly overlooked but fundamentally important consideration in planning resilient cities. Thus far, there has been little analysis on a city level of what the citizens of South Africa's cities are eating, where they are getting it from, and how dependent the food system is on oil. Gauteng's Strategy for a Developmental Green Economy includes a number of interesting findings pertaining to food issues at provincial level, and has the potential to contribute to improving urban food security in the region.³² Further research needs to be conducted into food systems in all cities to facilitate the development of sustainable food economies and healthy societies.

Sustainable energy

A series of power blackouts in recent years has brought South Africa's vulnerability to the national power grid into sharp focus. The instability of the grid has had devastating effects on households, businesses and local economies, and spurred some municipalities into action to protect their citizens from future cuts and ever-increasing electricity costs by pursuing alternative energy options to supplement their power supply.

Growing urban food security: A guide for cities

South African cities that recognise the need to address food security can start with a combination of measures.³³

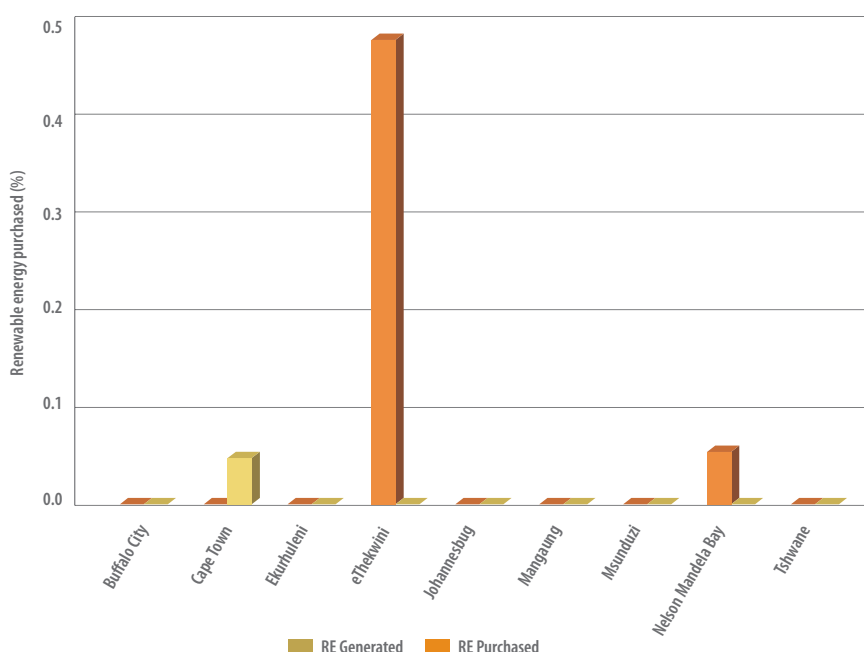
1. Policies to support the establishment of a socially and environmentally appropriate local food system.
2. Development planning that incorporates allocation and protection of suitable land for:
 - urban and peri-urban agriculture
 - local-level food markets
 - food-processing industries
 - composting of organic wastes.
3. Legislation to improve the type, quality and nutrient content of food sold.
4. Education in schools and communities about basic nutrition, low-cost organic farming, and food preservation methods.
5. Partnerships with educational institutions to build knowledge of low-cost, safe farming methods appropriate for small-scale urban farmers in each locality.
6. Partnerships with the private sector to minimise food waste and facilitate the feeding of the poor.
7. Revised social welfare systems that focus on facilitating a healthier diet for the urban poor.



Cities as life-supporting systems continued

Renewable energy technologies rely on free and abundant on-site resources like the sun and wind, and their operating costs are not nearly as tied to resource prices as coal or nuclear power plants. As such, they represent a significant opportunity for cities to improve their resilience and reduce their role in environmental damage. Renewable energy technologies also provide opportunities for job creation. For example, a concentrated solar power (CSP) plant would generate between 2.4 and 5.5 times the number of permanent jobs provided per MW generated by a coal power station.³⁴

National government has expressed support for renewable energy technologies, and in 2003 it released the White Paper on Renewable Energy that set a target of at least 10 000 GWh of renewable electricity by 2013. The Integrated Resource Plan (IRP2) recently passed by Cabinet will see nuclear and renewable energy playing a bigger role in the country's energy mix in future, with contributions in the region of 14% and 16% respectively by 2030.³⁵



In March 2009 the country's first Renewable Energy Feed-in Tariff (REFIT) for large-scale generation of renewable energy was announced, and there are currently a number of applications from independent power producers under consideration for power purchase agreements. Renewables are becoming an increasingly affordable alternative with long-term financial benefits, particularly when combined with energy efficiency measures. As Figure 4.11 shows, some of the cities are already incorporating local energy sources into their energy plans.

Figure 4.11 Percentage of city electricity purchases from renewable energy sources in 2010

Source: SACN, 2010³⁶

There have been some noteworthy efforts to incorporate renewables into the energy mix of South Africa's cities.

- eThekweni municipality has made significant progress in harnessing biogas from three of its landfill sites for use in electricity generation (see the waste-to-energy section below). It is also investigating the feasibility of a 6 MW hydroelectric scheme to harness the energy of piped water flowing between Pietermaritzburg and Durban, and sites are being evaluated for a solar photovoltaic (PV) generation project.
- In 2008 the City of Cape Town entered into a 20-year Power Purchase Agreement with the developers of South Africa's first independent wind farm in Darling, which currently sells around 13 200 MWh of wind power via the grid to discerning Capetonians for a small premium. The farm consists of four out of a planned ten 1.3 MW turbines, and over its lifetime the project will prevent 298 125 tons of CO₂ emissions, avoid the burning of 100 000 tons of coal, and save 60 million litres of water when compared to conventional electricity production.³⁷
- In the first half of 2010, Belgian renewable energy company, Electrawinds, erected the first of twenty five 1.8 MW wind turbines at the Coega Wind Farm to supply electricity to the Nelson Mandela Stadium for the 2010 FIFA World Cup™. When completed, each turbine will supply enough electricity for the equivalent of 1700 families per year, and the R1,2 billion project will meet 10% of Nelson Mandela Bay's electricity demand.³⁸
- Nelson Mandela Bay is also investigating a 100 MW wind energy project near the Arlington landfill, conducting scoping studies for 22 MW of small-scale hydroelectricity, and looking into the feasibility of small-scale, decentralised, grid-connected renewable energy technologies like solar photovoltaic panels and domestic wind turbines.
- Ekurhuleni municipality is currently negotiating a public-private partnership (PPP) for the establishment of a 1 MW solar PV farm, and has made significant investments in the harnessing of landfill gas for conversion to electricity.

Ecosystem goods and services (EGS)

The beneficial goods and services provided by natural systems are valuable contributors to the quality of urban life, and green spaces in and around the city can be viewed collectively as its 'green infrastructure'. These assets are often undervalued in city planning processes as their benefits are difficult to convert into financial measures. The Millennium Ecosystem Assessment (MEA) published in 2005 provided the first detailed analysis of the relationship between human quality of life and ecosystem health. It categorised the 'ecosystem services' on which socio-economic systems depend.

- Provisioning services: food, water, fibres, natural medicines, pharmaceuticals, genetic resources and biochemicals.
- Regulating services: air quality, water regulation, water purification and waste treatment, pollination, erosion regulation, climate regulation, disease regulation, pest regulation and natural hazard regulation.
- Cultural services: spiritual and religious values, aesthetic values, ecotourism and recreation.
- Supporting services: soil formation, nutrient cycling and primary production.

To value ecosystems only in terms of the current market value of commodities extracted from them is to overlook the crucial role they play in supporting human life and in making city environments liveable. For a fuller picture, one needs to take into account how much people value ecosystem goods and services along with the costs of the potential damages that are avoided by their regulating effects, and the costs of replacing them. In many cases, it is not possible to replace them.

In 2009 Cape Town researchers attempted to convert the benefits of environmental goods and services provided by the city's ecosystems into a financial figure, and arrived at a value of R2–R6 billion per year. Their study found that for every rand invested in the natural environment of the city, between R8.30 and R13.50 worth of ecosystem goods and services is generated. Municipal spending on the economy generates R7.30 in added value, indicating that expenditure on the environment is 1.2 to 1.5 times more worthwhile.³⁹

A similar study by the eThekweni municipality in 2003 valued its open spaces at R3.1 billion per year. If the tourism sector is included (with its estimated turnover of R3.3 billion for 2001) this is roughly equivalent to the R6.5 billion operating budget of the eThekweni municipality for the 2001/02 financial year. In the years since this valuation, the following has been observed:

- EGS and environmental sustainability feature prominently in the Municipality's Integrated Development Plan and high level spatial development plans.
- Municipal leadership and local politicians have taken a number of tough decisions to protect the environment.
- While many municipal departments have remained static in terms of staff and budget, the Environmental Planning and Climate Protection Department has grown from two staff members in the mid 1990s to 28 in 2010.
- The Municipality is investigating how to value municipal-owned open spaces and include them on its asset register, making better provision for ongoing management.
- The Municipality is developing a methodology and implementation framework for preparing a Strategic Environmental Assessment of its high level spatial plans. The intention is to develop a methodology and framework which integrates an ecosystems goods and services approach to environmental assessment into the planning process in order to strengthen sustainability considerations.

To understand the extent to which EGS are being protected and developed, quantifiable measurements need to be gathered and analysed. An example of this is the percentage of city land area dedicated to green spaces, but comparable measures across the South African Cities Network's member cities are elusive. Efforts to collate this data revealed differences in conceptions of urban green space⁴⁰ and the measures used to quantify it, and some cities did not have such data available. In the interests of incorporating EGS into urban sustainability plans, cities will need to work together to arrive at common definitions and measurements to facilitate comparisons and to monitor progress over time.

Despite differences in approach to measurements, it is encouraging to note that a number of cities are starting to recognise the importance of ecosystem health in unique ways.

- With the help of experts, the City of Johannesburg has identified and verified priority biodiversity sites in the interests of strengthening the case for protecting city land from development. The study allows for the identification of areas in need of upgrade or conservation status, and the resulting maps can be used as inputs into the city's Spatial Development Framework and other decision-making processes.

Cities as life-supporting systems continued

- Ekurhuleni municipality has embarked on a number of wetland rehabilitation projects under the guidance of Working for Wetlands to restore their ability to purify the city's water and protect it from floods. The two-year project cost just over R2.3 million, and employed 45 previously unskilled workers in the construction of gabions and concrete structures to stabilise banks, block erosion channels and retain sediment.
- The City of Cape Town manages over 30 nature reserves and conservation areas, and has two national parks within its borders. It has a fine-scale conservation plan aimed at conserving a representative sample of the city's rich and unique biodiversity and meeting national targets. It is part of the Cape Action for People and the Environment (CAPE) programme that works with government and civil society to employ innovative measures to conserve biodiversity while benefitting local communities. CAPE is funded by the Global Environmental Facility – a global fund managed by the World Bank.

While conservation is not a new field, there is growing recognition of the extent to which cities are dependent on EGS. South Africa's cities can benefit from efforts to empower the poor through the protection and re-establishment of healthy ecosystems, as demonstrated in the Buffelsdraai reforestation case study (see page 27).

CLOSING WASTE LOOPS

As high-density human habitats, cities generate substantial volumes of waste relative to the amount of land they occupy. Nature is able to deal with many human waste streams up to a point, but the concentration of organic and inorganic wastes generated by cities renders them toxic to natural systems and threatens their ability to be of service. Natural systems generate no waste products as everything emitted from one system is used as an input for another, and they can provide inspiration for city managers overwhelmed by the increasing cost of waste management.

The flow of resources through a city is typically linear, with a constant stream of new resources entering the city from the environment on one side, and a constant stream of solid, waterborne and airborne wastes exiting the city into the environment on the other side (illustrated in Figure 4.12). As shown in Figure 4.13, closing waste loops describes adjusting these flows so that 'wastes' are harnessed and used as productive inputs within the city.



Figure 4.12 Linear flow of resources to wastes through conventional cities

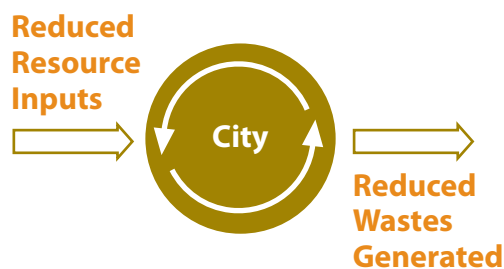


Figure 4.13 Circular flow of re-beneficiated waste streams within resilient cities

“The harnessing and re-use of wastes presents an opportunity for cities to reduce dependence on imports, better manage rising resource and waste disposal costs, and stimulate the local economy while significantly reducing ecosystem destruction.”

The closed-loop approach can be used to address the twin challenges of mounting waste and limited landfill capacity, and will become increasingly important as non-renewable resources become more difficult to source. The harnessing and re-use of wastes presents an opportunity for cities to reduce dependence on imports, better manage rising resource and waste disposal costs, and stimulate the local economy while significantly reducing ecosystem destruction.

Solid waste recycling

When one thinks of re-using waste, solid waste recycling is often the first thing that comes to mind. The National Waste Act of 2009 requires municipalities to compile Integrated Waste Management Plans containing targets for the collection, minimisation, re-use and recycling of waste, and provide details of how they intend to achieve this. A number of cities have already embarked on ambitious programmes aimed at extending the lifespan of their landfills, including the separation of garden and building waste from mixed landfill waste, and instituting solid waste recycling programmes. Figure 4.14 provides an insight into current recycling rates across the cities.

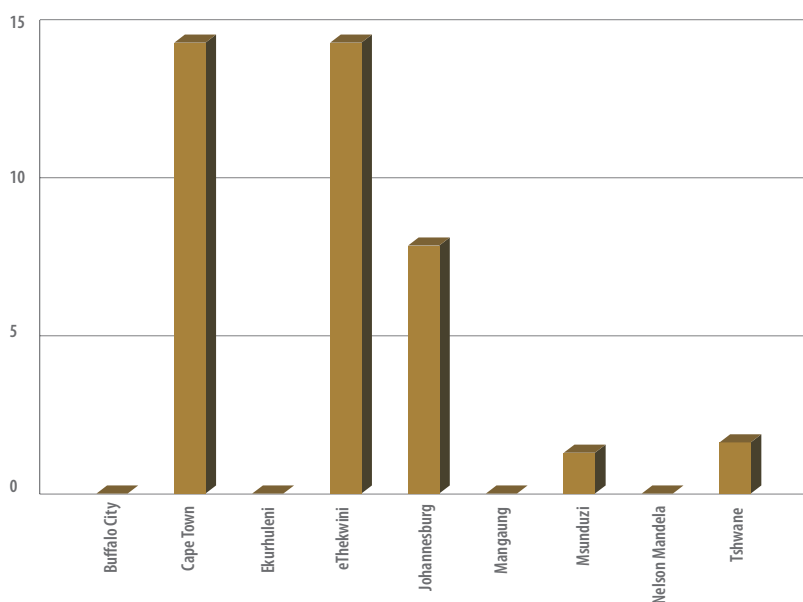


Figure 4.14 Percentage of solid waste recycled in 2010⁴¹

Source: SACN, 2010⁴²

Cape Town's ThinkTwice dual-bag refuse collection system provides clear bags to high waste-producing suburbs for the collection of mixed dry recyclables. Each year, the service diverts 13 000 tons of recyclables from landfills, equating to approximately 1% of landfill waste by weight. The city is currently investigating alternative service delivery models under Section 78(3) of the Municipal Systems Act that would make it possible to extend a similar recycling service to more areas. Cape Town also offers the public free drop off sites where recyclables can be deposited, and keeps garden and building wastes separate from landfill wastes so that they can be re-used for compost and building materials respectively.

eThekweni has managed to achieve high recycling rates by providing a recycling collection service to certain suburbs in partnership with Mondi. Households are given orange bags for paper and plastic, which are placed alongside rubbish bins on collection days and are retrieved by SMMs and entrepreneurs appointed by the municipality. They deliver the recyclables to Mondi, who buy and re-use the materials in the manufacturing of their products, and provide funding for 30% of the project. Since August 2007 the service has been extended to over 800 000 households and diverts approximately 1200 tons of waste from landfill per month for re-use by local industry.

A number of other municipalities have also adopted novel approaches to the issue of solid waste management:

- Johannesburg separates garden and building waste from its landfills, and has rolled out a pilot waste separation at source scheme to 56 000 households in the catchment area of Waterval Depot. There are plans to extend this programme to other areas of the city in the near future.
- Abaqulusi Municipality has formalised landfill salvaging by requiring that pickers register for a permit. This allows the municipality to control the number of people on the site, the times they access the site and what they are allowed to recover, as well as institute health and hygiene standards for the workers.
- Nelson Mandela Bay has an online waste exchange programme to assist the exchange of unwanted items so that they do not go to waste.
- Ekurhuleni Municipality sets aside R7 for every ton of waste disposed in order to rehabilitate its landfill site upon closure.

Cities as life-supporting systems *continued*

Although increasing the volume of solid wastes collected for recycling is an important measure of a city's progress toward closing its solid waste loops, it is crucial that these efforts are supported by growth in demand for salvaged materials. Cities wishing to implement successful recycling schemes need to ensure that recycling efforts are matched with the development of local markets for recyclables.

Waste-to-energy

Waste streams often contain vast amounts of unused energy. Waste-to-energy technologies are gaining popularity worldwide as a means of harnessing these local sources of power while reducing dependence on external sources of energy. In particular, landfill gas is attracting attention as a result of its harmful effects on the environment when released into the atmosphere. South Africa has been classified as an Annex B country under the Kyoto Protocol since 2004 and, although this does not require a commitment to reduce emissions, President Zuma has set an ambitious target of reducing South Africa's greenhouse gas emissions by 34% below 'business as usual' by 2020, and 42% by 2025.

The rotting compressed organic waste in landfills releases biogas containing 40–60% methane, a foul-smelling gas 21 times more powerful than carbon dioxide as a greenhouse gas. Burning or 'flaring' methane is considered a means of reducing emissions by turning it into less harmful carbon dioxide, energy and water. The gas can be burned to generate electricity or sold for use as a fuel in neighbouring homes or industries, providing significant benefits to the environment and electricity savings for the city. Figure 4.15 gives an indication of the potential for energy to be generated by landfill sites in some South African cities.

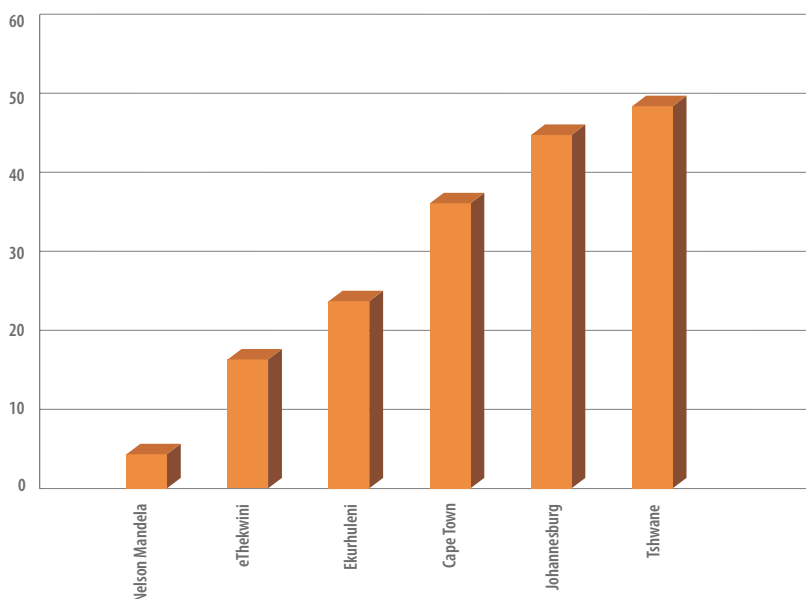


Figure 4.15 Estimated energy capacity of landfill waste in 2010

Source: Agama Biogas, 2009⁴³

eThekweni Municipality is leading the country in its implementation of waste-to-energy facilities. In 2002 the World Bank approached them with an offer to assist in the implementation of three waste-to-energy facilities with funding from the Prototype Carbon Fund. Subsequently, gas collection wells have been installed at the closed La Mercy landfill site, and additional wells have been added to the Mariannhill and Bisasar Road sites to improve their gas harvesting from 7% to 70%. There are a number of variables that make it difficult to calculate electricity yields, but it is estimated that at least 6 MW can be generated at Bisasar Road, 1.5 MW at Mariannhill and 0.5 MW at La Mercy.

By capturing methane and replacing coal with biogas in the generation of electricity these projects enable the city's greenhouse gas emissions to be reduced (6 896 836 and 937 559 tons CO₂ equivalent respectively from 2003 to 2024). Revenues earned from the sale of emission reductions (ERs) under the Clean Development Mechanism (CDM) are key to the financing model. The project cost R64 million to implement and a further R86 million will be required to cover operating costs over 21 years. During this time, the city will sell the equivalent of 3.8 million tons of CO₂ at a rate of \$3.95 per ton, generating R205 million that will cover the costs of the project and earn additional revenue for the city in the longer term.⁴⁴ This example shows how, with perseverance and long-term thinking, carbon financing can help cities achieve emission reductions while pursuing development goals and improving resilience.

Mariannhill is also the site of South Africa's first landfill site conservancy and a model of closed-loop design. In addition to harnessing methane for electricity, leachate (liquid run-off from waste) is collected and treated using natural methods before being re-used on the site. Conservation principles have been applied throughout the project to ensure that local ecosystems are protected and can be re-established once the site is closed.

Urban Environmental Management Programme (UEMP)

The UEMP is a collaboration between different spheres of government to improve service delivery, alleviate poverty and build institutional capacity for local environmentally sustainable services in South Africa. Of the R250 million budget provided by the Danish government, approximately R87 million was allocated to supporting local government between 2006 and 2011. The UEMP projects undertaken by the four South African Cities Network members include those outlined below.⁴⁵

	Johannesburg	Cape Town	eThekweni	Ekurhuleni
Air Quality	Online interface for collecting greenhouse gas data as part of an Environmental Information System Smokeless imbawula pilot project to diminish indoor air pollution in townships	Air Quality Management Plan Monitoring and evaluation of carbon savings	Air Quality Management Plan Air monitoring instrumentation repair training Protocol for internal air quality at health institutions	Air Quality Management Plan Tree planting to offset CO2 emissions
Environmental Health	Training and capacity development of Environmental Health Officers Training of city hawkers and ward committees Biodiversity audit and strategy Ecological footprint study Johannesburg–Tshwane Environmental Management Framework (EMF) Environmental profile for the different regions State of the Environment Report Training of Environmental Health Officers	Health and hygiene education Integrated Pollution Control Policy Sustainable livelihoods planning and implementation Women and Environment Sustainable Livelihoods Sustainability Indicators for City of Cape Town State of the Environment Report	Training of environmental health practitioners Environmental health interventions in informal settlements Food safety of informal traders Vector control training Empowering local communities to improve their environmental health status e.g. Buffelsdraai reforestation project	Environmentally friendly rat elimination Climate change handbook Community based clean-up processes
Energy	City Energy Strategy State of Energy Report	Energy Efficiency Campaign	City Energy Strategy Climate change modelling and tools	Sustainable construction and service delivery for hostel upgrading Integrated Transport Plan Domestic fuel efficiency interventions
Planning	Human Development Agenda project to facilitate a better quality of life, focusing on poor woman Verification of priority conservation areas Update of Capital Investment Management System Inclusion of strategic, responsive and accountable Urban Environmental Management in City Development Strategy Capacity building to bridge the gap between environmental planning and development	City Development Strategy Residential growth monitoring system Coastal Climate Change Vulnerability Assessment Green Building Design Guidelines Adaptation strategies for communities at risk Urban Growth Model Environmental Management Framework for Urban Growth Management Medium to long term spatial growth options Biodiversity layer for Spatial Development Framework	Spatial Development Plans on multiple levels Methodologies for Strategic Environmental Assessment of Development Plans	Training councillors and officials in environmental management issues Piloting planning processes for land-use rehabilitation and re-use

Source: UEMP ⁴⁹

Cities as life-supporting systems *continued*

Although eThekweni has made the most visible progress towards the generation of electricity from landfill gas, other cities are following close behind.

- Ekurhuleni is currently recovering methane gas from four of its municipal landfill sites. The second phase of the project will convert it to electricity, with a generation potential of 10 MW. Endesa Generacion of Spain has agreed to purchase a minimum of 800 000 Certified Emission Reductions at a fixed price from 2008 to 2012.
- Nelson Mandela Bay Municipality plans to generate 3 MW of electricity from two landfill sites. Construction is due to start in 2011 and a power purchasing agreement to feed electricity into the local grid over a 25-year period has been signed. The city is also investigating the use of sludge from its Fish Water Flats wastewater treatment plant to drive electricity turbines and manufacture bricks to cap landfill sites. The electricity will be fed into the grid, and waste heat will be used to drive a water purification plant.
- Tshwane has undertaken a feasibility study on the recovery of methane from nine landfill sites to be used for electricity generation. The project would be funded by the World Bank and has the potential to reduce CO₂ emissions by 803 tons per year.
- Johannesburg has identified 10 landfill sites as having good potential for methane gas extraction, and a report evaluating eight proposal bids has been completed.
- The City of Cape Town has a Memorandum of Understanding with the Central Energy Fund to undertake a feasibility study of turning landfill gas into electricity, and is investigating the use of methane from sewage sludge and the generation of gas and oil from refuse as potential energy sources.

The success of these projects is likely to see waste-to-energy adopted more widely as a means of generating energy and revenues for cities while reducing greenhouse gas emissions in line with targets.

City State of the Environment Reports

City-level information on the environment is a crucial first step toward helping cities to understand the causes and effects of environmental changes. The National Environmental Management Act (NEMA) encourages cities to provide and develop environmental monitoring, assessment and reporting mechanisms to produce regular reports on the State of the Environment. These documents provide data for establishing, monitoring and evaluating environmental management programmes and projects, allowing cities to improve their decision-making by including environmental concerns into their strategies. A number of reports have been published by South Africa's cities since 1998.

Title	Year(s) of publication
State of the Environment report for the Cape Metropolitan Area	1998, 1999, 2000, 2001, 2002
City of Cape Town Sustainability Report	2005, 2006
City of Cape Town State of the Environment Report	2008, 2009
Ekurhuleni Metropolitan Municipality State of the Environment Report	2003
Ekurhuleni State of the Environment Report	2004
Durban's Tomorrow Today (First SOE)	1996
Durban Metro State of the Environment and Development	1999
eThekweni Municipality State of the Environment Report	2005
eThekweni Municipality State of the Environment Headline Indicators Report	2006, 2007, 2008, 2009
eThekweni Municipality State of Biodiversity Report (2008/09 & 2009/10)	2010
City of Johannesburg State of Environment Report	2001, 2003, 2008
Mangaung State of Environment Report	2003

Source: Collated data from municipalities

Building livelihoods and ecosystem services – the Buffelsdraai Landfill Site Community Reforestation Project

The reforestation of the Buffelsdraai Landfill Site buffer area was established with the primary aim of sinking carbon emissions associated with various events hosted by the eThekweni municipality in Durban, including the 2010 FIFA World Cup™ and the United Nations Framework Convention on Climate Change (UNFCCC COP17-CMP7). Of the 787 hectare (ha) municipal-owned buffer area around the new regional landfill site, 650 ha of marginal sugar cane farmland will be reforested, and the balance of 137 ha restored through natural habitat management processes and alien plant control. This investment will enhance the ecosystem functioning of the landfill buffer, increasing its capacity in mitigating potential air quality and water-based health and environmental impacts of the landfill site on surrounding and downstream communities, as well as acting as a carbon sink and biodiversity refuge. The project aims to mitigate climate impacts, and is also an investment in climate adaptation and resilience through enhancing the supply of critical risk-mitigating ecosystem goods and services. The project also contributes significantly to the objectives of eThekweni Solid Waste in obtaining formal Nature Conservancy status for the landfill site and its buffer area.

Approximately 650 000 trees will be planted in the project area over a five-year period, and natural recruitment of additional trees is promoted through introducing locally collected forest tree seeds. The project is currently in its second phase of implementation, and 244 000 trees will be planted on 222 ha of land in the landfill buffer by June 2011.

The project is lead by the eThekweni Municipality's Environmental Planning and Climate Protection Department, with project implementation undertaken by the Wildlands Conservation Trust. Project funding has been provided by the eThekweni Municipality and the Danish International Development Agency (DANIDA). About 618 community 'Trepreneurs' have been established in neighbouring communities to grow trees for the project in exchange for food, school fees and other basic goods. The project has created 13 permanent 'green' jobs in the running of the tree nursery, the planting of trees and in maintenance. A large number of temporary jobs are also created when additional capacity is needed for digging holes, planting trees and burning firebreaks.



Buffelsdraai's 'Trepreneurs'

By investing in the restoration of natural capital through reforestation, the project helps to conserve biodiversity, mitigate climate change, enhance climate resilience and adaptability, promote rural development, improve socio-economic conditions for local people, and build local green governance capacity and skills. Based on the lessons learnt at Buffelsdraai, the eThekweni municipality is developing a municipal reforestation strategy to roll similar projects out in other parts of the municipal area as part of its Working for Ecosystems Programme.

Cities as life-supporting systems *continued*

Water re-use

Wastewater treatment works are a means of recycling water to ensure that harmful waterborne wastes are removed and dealt with before it is returned to the ecosystem. Many of South Africa's wastewater treatment works currently fail to achieve acceptable water quality standards, resulting in pollution of water bodies and ecosystems in the immediate vicinity. According to the Department of Water Affairs Green Drop Report, the major cities are achieving high standards of water treatment, but cities like Msunduzi, Buffalo City and Mangaung have significant room for improvement (see Figure 4.16).

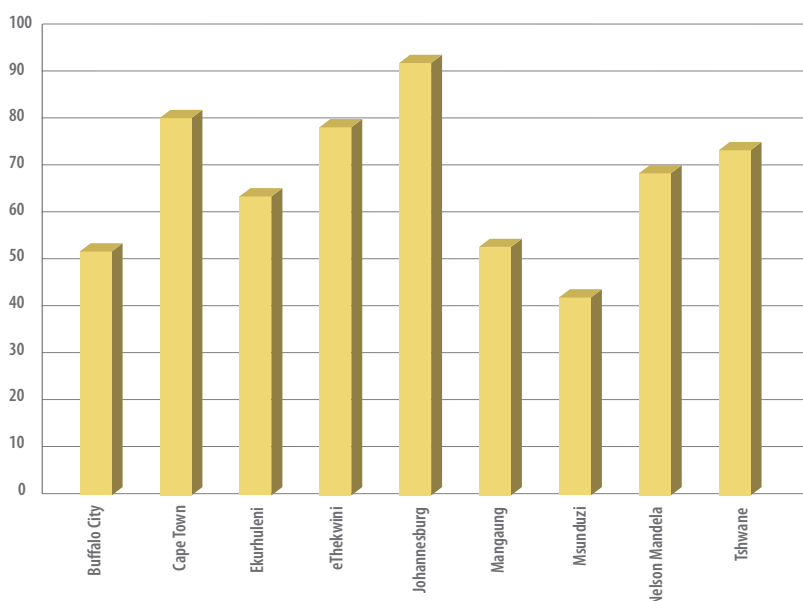


Figure 4.16 Average Green Drop Report score in 2009

Source: DWAF, 2009⁴⁶

The re-use of water is a relatively new addition to South Africa's strategies for a water-scarce future. In the last decade, significant advances have been made in the re-use of 'reclaimed' waste water, i.e. wastewater that has been partially treated to be suitable for non-potable purposes. In 1999 eThekweni Water Services entered into a PPP with Durban Water Recycling (Pty) Ltd to produce high quality non-potable water in the grounds of one of their water treatment plants. The Durban Wastewater Recycling (DWR) facility treats approximately 10% of the city's wastewater, which is sold to a paper mill and refinery for industrial purposes, at a significantly lower rate than potable water. The plant is estimated to free up enough drinking water for around 300 000 people.⁴⁷

ICLEI's Local Action for Biodiversity

In 2006 ICLEI⁴⁸ began a biodiversity chapter called Local Action for Biodiversity (LAB) to contribute to the improvement of biodiversity management at local government level worldwide. It achieves this through providing technical support, creating networking opportunities, profiling local government biodiversity initiatives and providing a platform for local governments to participate in global advocacy. The project has since developed into a programme conducted in partnership with the International Union for Conservation of Nature (IUCN) that has promoted biodiversity among sub-national governments worldwide. Thirty local and regional governments participate in the programme, representing 17 countries across six continents. South African participants include Buffalo City, Cape Town, Ekurhuleni, eThekweni, Johannesburg, Berg River and Cape Winelands. Cape Town and eThekweni focus specifically on the links between biodiversity and climate change, with a strong communication element built into their participation. Cape Town is also working with four sub-Saharan cities on an ICLEI project to research and develop strategies to build capacity for climate change adaptation within local government and poor communities.

SANBI's Urban Nature Programme

The South African Biodiversity Institute's (SANBI) Urban Nature Programme aims to co-ordinate urban environmental management initiatives and identify ways to develop and promote good practices in conserving indigenous biodiversity. This is achieved by providing institutional knowledge, expertise and skills to the local authorities responsible for managing and protecting urban ecosystems, especially in areas of high ecological and heritage value. The programme also works with civil society to build public understanding of the value of biodiversity in urban areas where it is under threat, and facilitates community involvement in appropriate actions.

The programme has thus far focused on three key areas.

- Cape Flats Nature: working with the City of Cape Town to engage communities in the care, use and management of biodiversity assets in their neighbourhoods
- Working for Wetlands: a poverty alleviation and skills development project within the Expanded Public Works Programme (EPWP)
- Green Futures: a skills development project designed to create nature-based sustainable livelihoods for the unemployed youth.

The programme has focused largely on the Cape region, but the next phase will see the acquired knowledge and skills becoming standards within the National Municipal Biodiversity Programme. SANBI is currently working with the Department of Environmental Affairs on a Municipal Biodiversity Summary Project to make biodiversity information available to municipalities to support them in their environmental reporting responsibilities.

The City of Cape Town has also invested substantially in the treatment of effluent as an alternative source of water for non-potable uses. By 2007 eight of the city's wastewater treatment works were providing 21 113 ML of treated effluent per year for re-use, primarily by private buyers like golf courses and factories. Potential exists for a total of 31 428 ML of treated effluent to be re-used per year, and work is underway to incorporate the water from an additional eight treatment works into the scheme as part of the city's WC/WDM strategy.

Taking the concept one step further, the recycling of wastewater as an alternative source of drinking water has become an integral part of water supply augmentation strategies for cities like Singapore and Windhoek. In response to severe droughts in the southern Cape, South Africa's first sewage-to-drinking water plant went live in Beaufort West in early 2011; the approach is likely to gain relevance for larger settlements as water stresses become more severe.

CONCLUSION

In the face of significant social and economic challenges, South Africa's cities are starting to embrace more ecologically sustainable approaches that will help to enhance their long-term resilience. The numerous examples in this chapter illustrate efforts to improve the relationship between cities and the flows of energy, water and other resources that pass through them. Progress has been made across a number of cities in areas such as public transport, recycling and energy efficiency interventions. Certain cities have built expertise that will be of use to other cities, for example eThekweni's waste-to-energy projects and the City of Cape Town's work in conserving urban biodiversity.

The most basic function of cities is to provide spaces for human habitation, but this is not possible without sufficient water and food. In this chapter, water and food security have been identified as issues requiring the urgent attention of the South African Cities Network. In a country that is becoming increasingly water-scarce, there are high levels of water wastage and few examples of re-use. Urban food systems are not meeting the needs of the most vulnerable as cities source their sustenance from further afield and the cost of basic nutrition continues to rise.

Cities as life-supporting systems *continued*

The first step towards more resilient cities involves being accountable for their resource usage, and this requires high quality city-level data on resource stocks and flows. Although the analyses in other chapters of this report benefit from years of data collection and analysis of a wide variety of indicators, the incorporation of sustainability issues into city debates requires a concerted effort to develop, collate and process comparable, annual data for each city that addresses the following areas:

- consumption of water, electricity and fossil fuels across sectors within each city
- efficiency interventions to improve the productivity of water, electricity and fossil fuel use
- 'unaccounted for' and 'lost' water per city
- renewable energy generated per energy source
- volumes of waste generated and recycled per waste type
- greenhouse gas emissions per sector
- urban food flows and food security and
- conservation and cultivation of ecosystem goods and services.

Much of this work will require setting guidelines to improve current data measurement processes and ensure comparability across all nine cities. The greatest data challenge will be developing new indicators for urban food security and EGS, whose quantification to date has been limited. In the years preceding the next report, a co-ordinated effort by all cities in the South African Cities Network to assemble data on urban resource use and promote the sustainable approaches discussed in this chapter will make a significant contribution to building more resilient South African cities.





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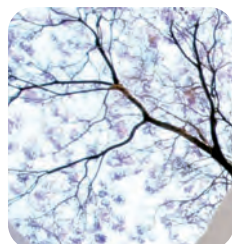
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“Good governance refers to the capacity of city councils and their partners to formulate and implement sound policies and systems that reflect the interests of local citizens, and to do so in a way that is transparent and inclusive of those with least power and resources.”



City Governance



City Governance



The quality of city government has been the focus of growing public concern. Escalating service delivery protests and campaigns about rates bills have fuelled perceptions of dysfunctional municipalities with incompetent leaders. High-profile interventions by national government have reinforced doubts about the technical and managerial capacities of councils, the integrity and accountability of city officials and politicians, and their apparent lack of responsiveness to local communities. Yet there has been little systematic analysis of the impact and effectiveness of city councils, partly because they are consistently overshadowed by research and political interest in national and provincial government, where power is (wrongly) perceived to be concentrated.

Governance is the activity of governing, whereas government is usually the instrument that undertakes it, often in conjunction with civil society or the business sector. Hence governance is what the government and its partners do; it is the exercise of leadership, management power and policy. Governance includes the formal institutions and procedures, as well as the informal arrangements and practices. It involves political authority and the allocation of institutional resources to plan and manage the common affairs of the city and to tackle its problems. Good governance refers to the capacity of city councils and their partners to formulate and implement sound policies and systems that reflect the interests of local citizens, and to do so in a way that is transparent and inclusive of those with least power and resources.

The main functions of city councils are:

- to reflect and represent local interests and attitudes
- to deliver essential household services
- to regulate the natural and built environment and
- to support the economy to boost jobs, incomes and tax revenues.

The UN-Habitat definition of good urban governance promotes equal access of all citizens to the benefits of urban living, which include adequate shelter, safe water, a clean environment, sanitation, health, education, nutrition, employment, public safety and mobility. Cities also have a wider responsibility to society as the main generators of jobs, tax revenues, carbon emissions and other externalities. Effective governance covers issues of political leadership and stability, accountability and relevance, efficient organisation and delivery, and the quality of laws and regulations. It also covers the probity of systems and procedures covering the award of contracts, staff appointments and related matters.

The concept of resilience implies that city-level institutions have the responsibilities, resources and strategic capabilities to anticipate and adapt to shifting conditions. Learning, innovation and appropriate investment help to achieve resilience. It is important for institutions to develop and sustain policies and practices that equip the city and its communities to address existing sources of vulnerability and future problems. Public confidence and trust can make it easier to address trade-offs and to make difficult, long-term decisions. Resilience also implies adopting a different approach to strategy and planning, with an onus on flexibility and the capacity to recognise and act upon emerging trends and altered circumstances.

The performance of local government is crucial to the long-term prosperity of cities and the cohesion of communities. Some of the qualities of good governance are difficult to define and measure, while judgements are often conditioned



“The UN-Habitat definition of good urban governance promotes equal access of all citizens to the benefits of urban living, which include adequate shelter, safe water, a clean environment, sanitation, health, education, nutrition, employment, public safety and mobility.”

by the perspective of the observer. For example, there is a big difference between external review and self-assessment. Ideally, the diagnosis of city governance achievements and shortcomings should include evidence from resident communities, business and labour representatives, local public officials and other local and national stakeholders. However, in the absence of comprehensive data of this kind, the focus here is on the attitudes, beliefs and behaviour patterns of local citizens, as expressed in the yearly South African Social Attitudes Survey (SASAS), supplemented by information on service delivery protests that vividly illustrate governance deficiencies.

The chapter assesses the progress made since the restructuring of city government in 2000/01. The 1996 Constitution established local government as an autonomous and equal sphere in its own right, rather than a third tier of government, in recognition of its crucial role in improving people's everyday lives and promoting inclusive growth and development. In the major cities, sizeable, relatively powerful, single-tier metropolitan authorities were created with boundaries that are probably among the largest in the world. The restructuring facilitated the integration of communities divided by apartheid laws and planning, a more equitable distribution of municipal resources, and economies of scale for financial viability and sustained service delivery. By creating large municipalities, the risk was that local responsiveness and accountability might suffer. Drawing heavily on popular perceptions, the chapter assesses whether the quality of city governance has improved.

RESTRUCTURING LOCAL GOVERNMENT

The 1980s were characterised by widespread conflict and mass action, during which local civic and community structures were key drivers of wider societal changes. The re-organisation of local government that followed during the 1990s was a long drawn-out process of transition to fully democratic, non-racial institutions. The transition reflected the compromises made during the political negotiations of the early 1990s and the search for a safe landing for local government.

The transition was characterised by a series of incremental phases of local government restructuring, from a highly fragmented and unequal system towards one that was integrated and provided wall-to-wall coverage across the country.

Amalgamating and consolidating many different administrative structures and procedures proved to be a complex task, particularly as institutional capacity, services and infrastructure were so uneven across each city and district. The number of municipalities across the country as a whole reduced from 1100 in 1993, to 283 in 2001. Serious housing and service backlogs in many areas, and financial constraints resulting from extensive poverty and an emerging culture of non-payment of local taxes, meant that the intergovernmental fiscal system had to be overhauled to bring far more financial resources down to municipal level. The unrepresentative character of local officials and inexperience of new political leaders were added complications. Given the magnitude of these problems, the sheer physical establishment of new structures and systems with enhanced powers and resources was a notable achievement during the early 2000s.

The Constitution states that the objectives of local government are:

- to provide a democratic and accountable government for local communities
- to ensure the provision of services to communities in a sustainable manner
- to promote social and economic development
- to promote a safe and healthy environment and
- to encourage the involvement of communities in local government matters.

The Constitution also states that municipalities should 'give priority to the basic needs of the community, and promote the social and economic development of the community'.¹ There was considerable enthusiasm and optimism at the time about the potential for large, capacitated municipalities to improve living conditions by fostering development, and to engage communities in creating a vibrant grassroots democracy.

Developmental local government was the fundamental idea behind the proposal to create large metropolitan authorities in the landmark White Paper on Local Government (1998), and subsequent legislation. This important principle was defined as 'local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives'.² Three compelling reasons for the creation of a metropolitan government were given in the 1998 White Paper:

- to promote a more equitable distribution of resources across the major cities (the principle of one city, one tax base)
- to promote spatial integration through strategic planning and co-ordinated investment in physical and social infrastructure across functional economic areas
- to develop coherent policies to improve the economic performance of the cities, in view of their national economic significance and the dangers of divisive competition between separate administrations.

The 1998 White Paper required municipalities to establish their own systems of participatory governance to complement the existing system of representative democracy. These systems included ward committees and forums to participate in preparing the integrated development plan and municipal budget. Executive mayors would ensure visionary leadership, and powerful city-wide administrations would have the capability to equalise the provision of services, boost political representation of the poor, and eliminate the separate tax bases and spatial divisions inherited from apartheid.

POPULAR TRUST IN GOVERNMENT

Institutional trust is an important barometer of well-being or malaise in a country or city. People who judge a government as trustworthy are more likely to vote, to support policy reforms and to comply with government regulations and other social norms. Public confidence or trust in municipal government is conducive to the collection of household rates and service charges, to participation in consultative exercises and decision-making, and to organisational stability. Dwindling trust can create uncertainty and friction, and undermine popular support and legitimacy for government action. Distrust may reflect all kinds of institutional difficulties, from poor communication and staff shortages to political infighting, maladministration, tender irregularities, fraud and corruption.

Table 5.1 compares the level of trust in local government with national government and other institutions of society over the last decade, based on data from the SASAS and its predecessor, the national opinion survey.

Table 5.1 Trust in institutions, 1998–2008 (percentages ranked in descending order by trust in 2008)

	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008
Churches	82	81	74	81	84	81	81	82	83	82
SABC	–	–	–	–	75	73	71	72	–	71
National government	47	60	43	52	57	69	64	59	52	51
Courts	42	45	37	45	50	58	56	52	49	49
Parliament	–	–	–	–	57	65	59	55	46	47
Police	42	47	39	40	42	46	45	39	38	40
Local government	37	48	32	38	45	55	48	44	34	38
Political parties	30	39	29	27	–	–	42	37	27	29

Note: Percentages saying they strongly trust or trust in each institution in South Africa at present. The data for 1998–2001 is from an earlier HSRC national opinion survey, which explains the gap in 2002.

Sources: HSRC, 1998–2008; Roberts B, 2008³

Public confidence in most state institutions clearly improved from 1998–2004, followed by a decline from 2004–2007. Trust then seemed to stabilise in 2007 and 2008, with only a bare majority of people seeming to retain confidence in national government. This appears consistent with national political developments from 2006–2008, including a groundswell of discontent resulting in events at Polokwane and the subsequent change in government leadership.

HOUSEHOLD LIVING STANDARDS

A different approach to the issue of service provision is to consider the living standards of households, focusing on those whose basic needs are not being met. The SASAS 2008 asked people whether their housing, access to transport, health care and schooling were inadequate, just adequate or more than adequate for their household needs. Of course people's living standards may be inadequate for many reasons, some of which have nothing to do with local government. Further, the rating is subjective and expectations of what is adequate may differ between metros and other areas. Nevertheless, the scale of unmet needs is clearly relevant in whether government policy is proving to be effective.

To compare individual metros and the rest of the country, Figure 5.1 looks at the proportion of respondents who state that their needs for housing, transport, health care and schooling are inadequate.

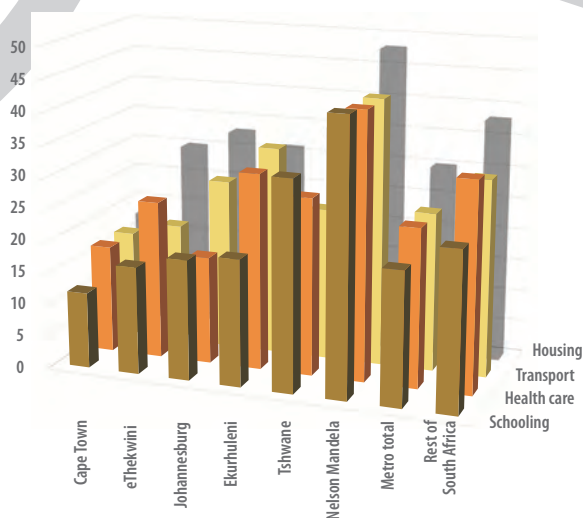


Figure 5.1 People with unmet basic needs, 2008

Source: HSRC, 2008⁴

Housing is almost always identified as the biggest unmet need, followed by access to transport, health care and schooling. Interestingly, these services are mainly the responsibility of provinces rather than municipalities. The level of unmet needs is 5–10% lower in the metros than elsewhere in South Africa, but the variation among individual metros is large. Cape Town is consistently rated as having lower unmet needs than the other cities, followed by eThekweni and Johannesburg, while Nelson Mandela Bay is consistently rated as having the highest unmet needs, followed by Tshwane.

Over the full period, trust in local government was much lower than in most other state institutions. Political parties were the only other institutions that consistently received lower public ratings. Local government received majority support from the public only once in the last decade (in 2004), and from 2004–2007 local government suffered the biggest decline of any institution. There appears to have been growing unease and scepticism about municipal performance, perhaps with a slight recovery in 2007 and 2008. Considering the far-reaching democratic and structural reforms to the municipal system in the early 2000s, the lack of improvement in public trust in local government is striking when comparing the late 1990s and the late 2000s. In contrast, trust in national government and the courts of law appear to have increased over the decade.

Table 5.2 compares the level of trust in each of the metros with trust in other local authorities.⁵

Table 5.2 Trust in local government, 2003/04 compared to 2007/08

	2003/04 average	2007/08 average	Difference
Cape Town	45	47	2
eThekweni	35	47	12
Nelson Mandela Bay	46	42	(4)
Johannesburg	36	27	(9)
Ekurhuleni	52	25	(27)
Tshwane	47	24	(23)
Metro average	42	36	(6)
Rest of South Africa	54	37	(17)

Note: Percentages of people who say they strongly trust or trust in local government. The percentages are ranked in descending order by trust in 2007/08.

Source: HSRC, 2003–2008⁶

There was little difference between average levels of trust in the metros and elsewhere, with, in both areas, just over one-third of citizens appearing to trust their local authorities. In 2003/04 there was a higher level of public confidence in non-metro councils, but subsequently, this fell sharply. Confidence in the metros also declined from 2003/04 to 2007/08, although not by as much as elsewhere. The limited trust in the metros is a cause for concern if the government is to devolve additional policy responsibilities onto them and/or amalgamate them with surrounding authorities.

Among the individual municipalities, trust in the three coastal metros appeared significantly higher than in the three Gauteng metros or the rest of the country, although this was not the case in 2003/04. Trust in the City of Cape Town was consistently higher than in most other metros. The City of eThekweni experienced the biggest increase in trust, against the national trend, and enjoyed the same level of public confidence as Cape Town in 2007/08. In contrast, Ekurhuleni and Tshwane saw the biggest falls in trust since 2003/04 – from about half of the citizens trusting these municipalities in 2003/04 to only one-quarter in 2007/08. Trust in Johannesburg was consistently low.

Municipal mismanagement and corruption are obvious sources of community mistrust. Under the authority of the president, the Special Investigation Unit subjected the two metros with the biggest declines in local trust, Ekurhuleni and Tshwane, to wide-ranging investigations into alleged corruption. Announced in November 2010, the official terms of reference for investigation include procurement processes, mismanagement, wasteful spending, irregular staff appointments, and misappropriation of the municipality's money and assets over a four-year period from 2007–2010. There were also allegations of tender rigging in Ekurhuleni's waste management department, involving contracts worth about R850 million.⁷ The problems, said to be linked to political factionalism and infighting in the region, resulted in the disbanding of the ANC's regional committee and the redeployment of the Ekurhuleni mayor to serve as health minister in the Gauteng province. Tshwane's municipal manager was suspended in October 2009 on charges of misconduct and maladministration, and 15 officials implicated in an internal corruption report were suspended pending a full investigation. Tshwane's mayor was redeployed to serve as deputy health minister in the national government.

There is a loose connection between dismissals or suspensions and popular perceptions in the eThekweni, Cape Town, Tshwane and Ekurhuleni metros. However, this is not the case for the Johannesburg and Nelson Mandela Bay metros. An indication of mismanagement is the number of senior (section 57) managers dismissed or suspended by a municipality. The total numbers involved vary widely across the major cities. Over the five-year period from 2006–2010, no one was dismissed or suspended in eThekweni or Johannesburg. Two people were dismissed or suspended in Cape Town, five in Msunduzi, eight in Nelson Mandela Bay, nine in Tshwane and Mangaung, 10 in Ekurhuleni and 13 in Buffalo City.⁸

The Msunduzi municipality is an extreme illustration of mismanagement and breakdown in external trust. In March 2010 the KwaZulu-Natal provincial cabinet decided to place the Msunduzi municipality under administration. The mayor and municipal manager were stripped of their executive powers after the financial position of the administration was described as being in turmoil and on the verge of collapse. The financial systems were weak, revenue collection was neglected and net available cash was very limited.

A different indicator of trust is an external audit report. The Auditor-General produces a yearly assessment of each municipality's overall state of financial management and performance information. The purpose is to build public confidence and trust by enabling oversight and accountability. The most positive (cleanest) audit rating is 'unqualified (with no other matters)' and the most critical is 'disclaimer'. To receive a clean audit, municipalities have to show close leadership involvement in financial and performance management, effective internal controls and risk management strategies, appropriately qualified staff and effective information systems.

“The limited trust in the metros is a cause for concern if the government is to devolve additional policy responsibilities onto them and/or amalgamate them with surrounding authorities.”

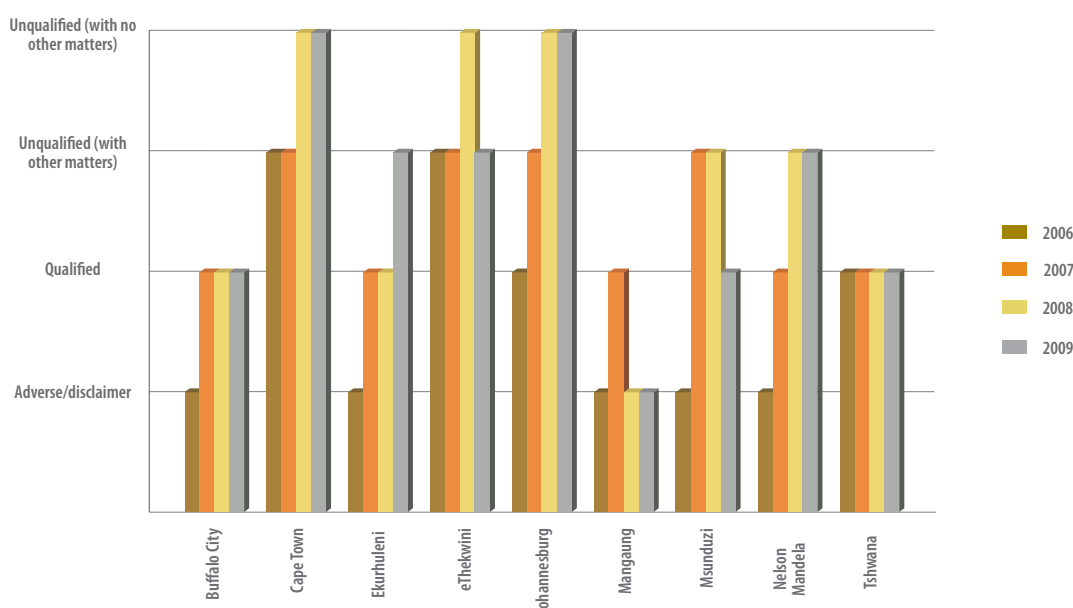


Figure 5.2 Auditor-General's audit opinion, 2005/06–2008/09

Source: Auditor-General, 2007–2010⁹

Figure 5.2 shows the audit opinion for the nine South African Cities Network (SACN) member cities from 2005/06 to 2008/09 (the latest available year).

Most cities improved their ratings over the five-year period, except Mangaung, Msunduzi and Tshwane. Cape Town, Johannesburg and eThekweni had the best track record of clean audits. In 2008/09 Cape Town and Johannesburg were two of only four municipalities throughout the country to receive clean audits. The main reasons for municipalities not getting clean audits are serious financial misstatements, non-compliance with laws and regulations, and lapses in governance arrangements (internal audit, audit committees and risk management). In his report for 2008/09 the Auditor-General noted that '[m]etros fared significantly better than high-, medium- and low-capacity municipalities in all three broad areas audited'.¹⁰

A credit rating provides a narrower indication of a municipality's financial situation and governance, particularly its ability to repay a major loan, which will depend upon its revenue base and financial management procedures and controls. The metros and other large cities are not all assessed by the same rating agency, which complicates any simple comparison of their position. Table 5.3 summarises the best available information.

Table 5.3 Municipal credit ratings

	Cape Town	Ekurhuleni	eThekweni	Johannesburg	Msunduzi	Nelson Mandela	Tshwane
2006	AA+	na	AA	na	short term A1 long term A	zaA	na
2007	AA-	na	AA	A and F1(Zaf)	short term A1 long term A	Aa3.za	na
2008	AA-	na	AA	A+ and F1 (Zaf)	short term A1- long term A	Aa3.za	na
2009	AA-	AA	AA-	AA- and F1+ (Zaf)	na	Aa3.za, A+	BBB+
2010	AA-	AA-	AA-	A	na	A+	BBB+

Source: SACN, 2010¹¹

The credit ratings of several cities deteriorated over the last two years, perhaps because of the recession and increased borrowing associated with the 2010 FIFA World Cup™. The City of eThekweni had the best track record, followed by Cape Town and Ekurhuleni. Johannesburg, Nelson Mandela Bay and Tshwane had patchier records.

PERCEIVED MUNICIPAL PERFORMANCE

The quality of public services is a foundation of trust and a vital indicator of effective city government. In 1997 the national government introduced a framework to establish a new, democratic, service delivery ethic in the public sector. This was in line with the Constitutional ideal of promoting the use of public resources in a manner that is efficient, development-oriented and responsive to people's needs, which was described as the Batho Pele, or people first principles and is especially relevant at the municipal level. The adoption of these principles was supposed to lead to a clear break from the over-centralised, hierarchical and rule-bound systems inherited from the previous regime.¹² The principles provide a useful framework for assessing the extent to which municipal services have been democratic and put people, especially poor people, first. They include issues of consultation, information, transparency, competence, effectiveness, equity, responsiveness and value for money.

Popular attitudes towards the performance of municipalities against these principles were included in the 2008 SASAS. Eight attitudinal statements were developed in order to assess the degree to which people felt municipalities were implementing the principles in their provision of household services (Table 5.4). Survey participants were asked to respond to positive statements about services relating to each of these principles. They could (strongly) agree or disagree, or neither agree nor disagree.

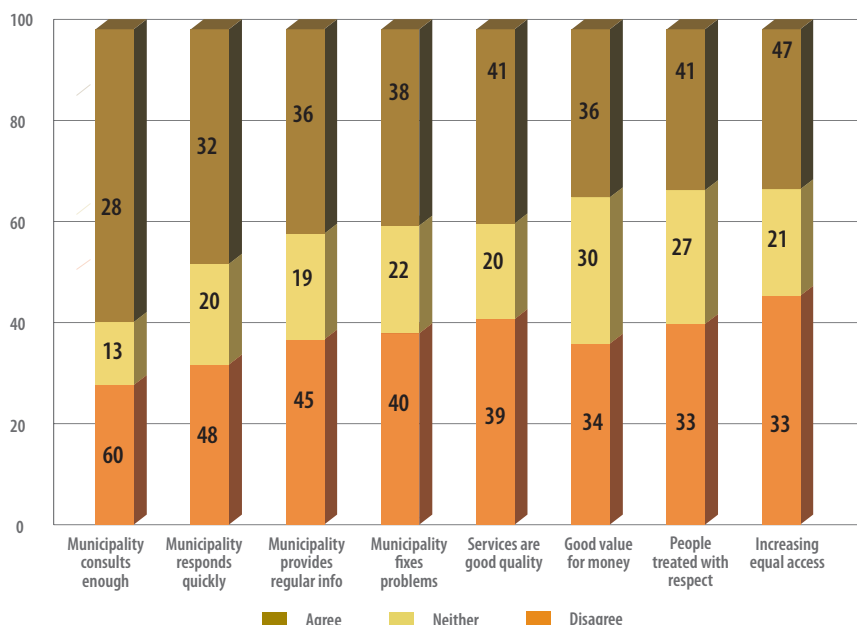
Table 5.4 SASAS statements about municipal performance

1	Municipality consults communities enough on basic services.
2	Municipality responds quickly to complaints about problems with services.
3	Municipality provides regular information on its performance in delivering services.
4	Municipality fixes problems and follows through.
5	Government provides basic services that are of good quality.
6	Municipality provides good value for money in charges for basic services.
7	Municipality treats people with respect.
8	Government is making progress in giving all South Africans equal access to services.

Source: HSRC, 2008¹³



Figure 5.3 shows the level of agreement with the various statements about municipal services. The responses are restricted to people living in the metros.



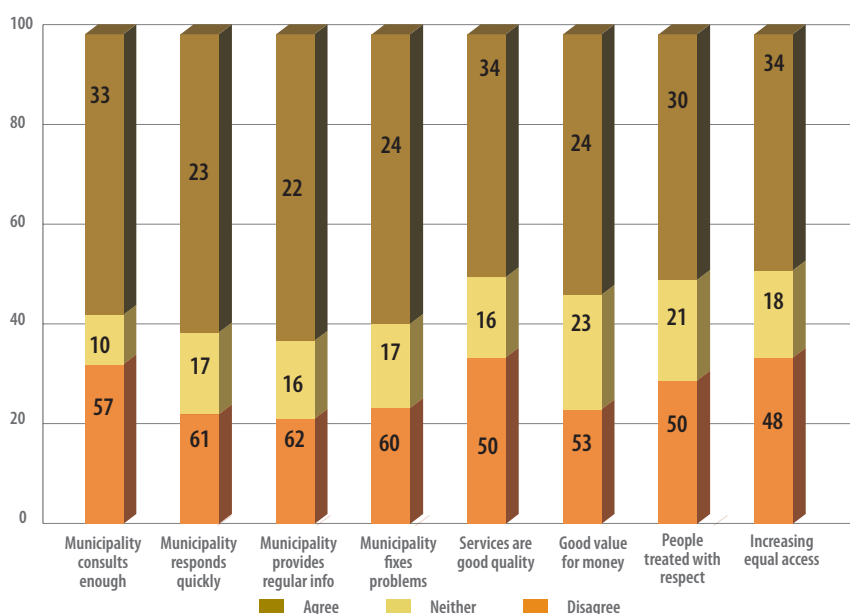
The results show that people are mostly in agreement that their municipality is making good progress to give all South Africans equal access to services, with nearly half of respondents agreeing and a third disagreeing with this statement. More respondents also agree that people are treated with respect. The responses are more finely balanced for statements about the quality and value for money of municipal services. The least agreement is found with statements about consultation, information and responsiveness.

Figure 5.3 Agreement with statements about municipal performance – metros, 2008¹⁴

Source: HSRC, 2008¹⁵

The overall message seems to be that the metros are improving service delivery, but are not communicating or responding quickly enough to people's problems. This is in marked contrast to the 1998 White Paper idea of developmental local government and the commitments made to build community participation. Another important finding is that the level of public agreement with these statements about municipal services is generally low. It is always a minority of people who give municipal performance a positive rating. A culture of public service and accountability seems to be some way off.

Figure 5.4 shows the equivalent responses from people living in the rest of the country (small cities, towns and rural areas).



The results show that people outside the metros are generally less positive about municipal services, with the exception of consultation. Up to one-third of respondents outside the metros give municipal performance a positive rating. At least half of all respondents disagree with all the positive statements about services. This supports the conclusions of the analysis undertaken for the Local Government Turnaround Strategy, which found that many of the municipalities outside the metros are struggling to meet the service needs of local communities. It is also consistent with General Household Survey (GHS) 2009 data on the availability of basic services shown in Chapter 3.

Figure 5.4 Agreement with statements about municipal performance – non-metros, 2008¹⁶

Source: HSRC, 2008¹⁷

The biggest discrepancy between people living in the metros and those living elsewhere relates to the municipality doing a good job of fixing problems. The metros appear to perform far better in this respect. The metros also seem to be better than other municipalities at providing information, offering good value for money and treating people with respect.

One way of comparing the metros is to create a composite service quality index of all the responses. The index is the sum of the responses to each of the nine statements converted into a range of values from 0 to 100. The lowest possible overall score of municipal performance is 0 and the highest is 100. The highest score would require all respondents to agree strongly with each of the nine statements and the lowest score would require all respondents to disagree strongly with each of the nine statements.

Figure 5.5 compares the ratings for each of the metros together with the metro total and the rest of the country.

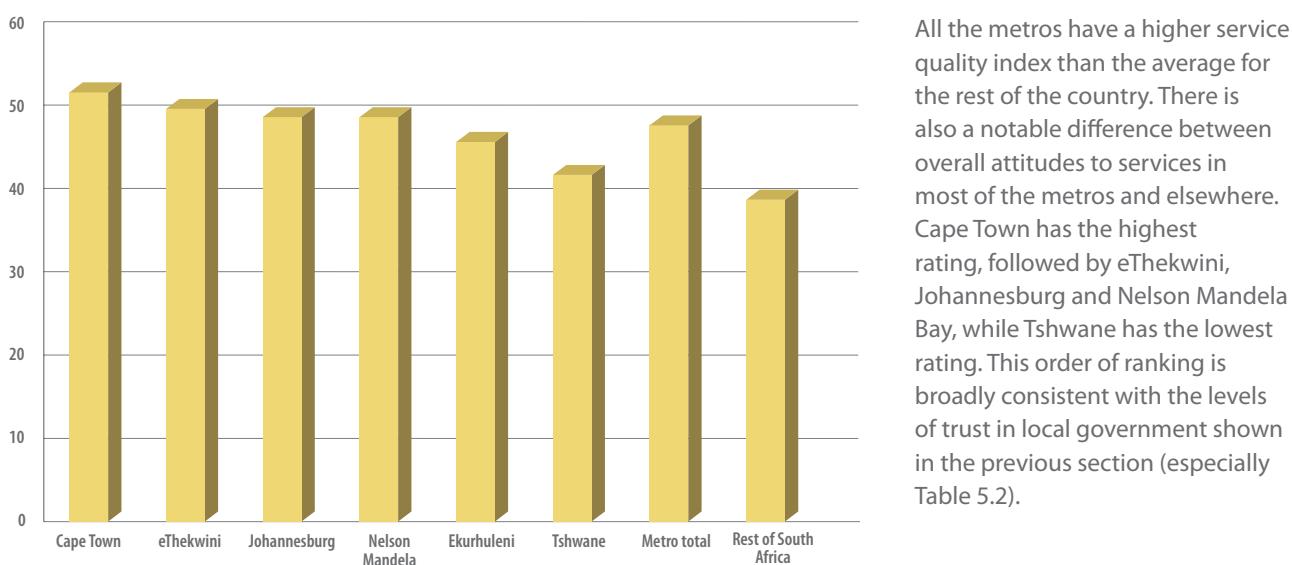


Figure 5.5 Municipal service quality index for the metros, 2008 (%)

Source: HSRC, 2008¹⁸

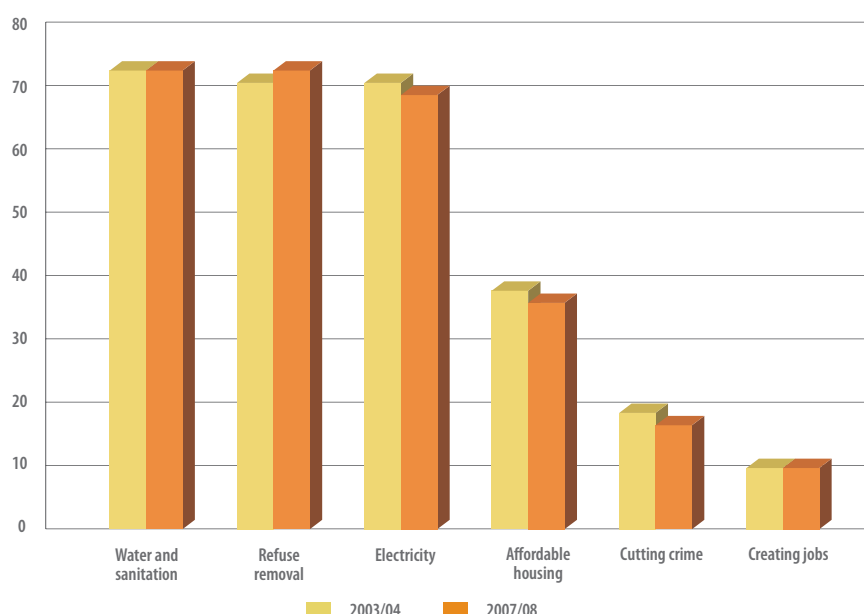
What is also worth noting is that there is no room for complacency anywhere, since even the best performing metros are achieving about only half of their potential. Furthermore, people with low incomes (who have the most acute need for basic services) are generally more dissatisfied with municipal performance than people with medium and higher incomes, suggesting they receive poorer service.¹⁹

SATISFACTION WITH SPECIFIC SERVICES

The above assessment of municipal performance discusses the quality of municipal services in general and is limited to a single year. People's perceptions of particular services are available for all the surveys from 2003–2008, which enables some analysis of whether people believed that specific services had improved over time. The survey covers services that are not all strictly municipal services, but municipalities have important roles and responsibilities in relation to most of them. The relevant question asked was people's degree of satisfaction or dissatisfaction with government handling of:

- water and sanitation
- electricity
- refuse removal
- affordable housing
- cutting crime
- creating jobs

Figure 5.6, which shows the proportion of respondents in the metros who were either satisfied or very satisfied with the handling of each issue for 2003/04 and 2007/08, reveals that there are big differences in the rates of satisfaction.

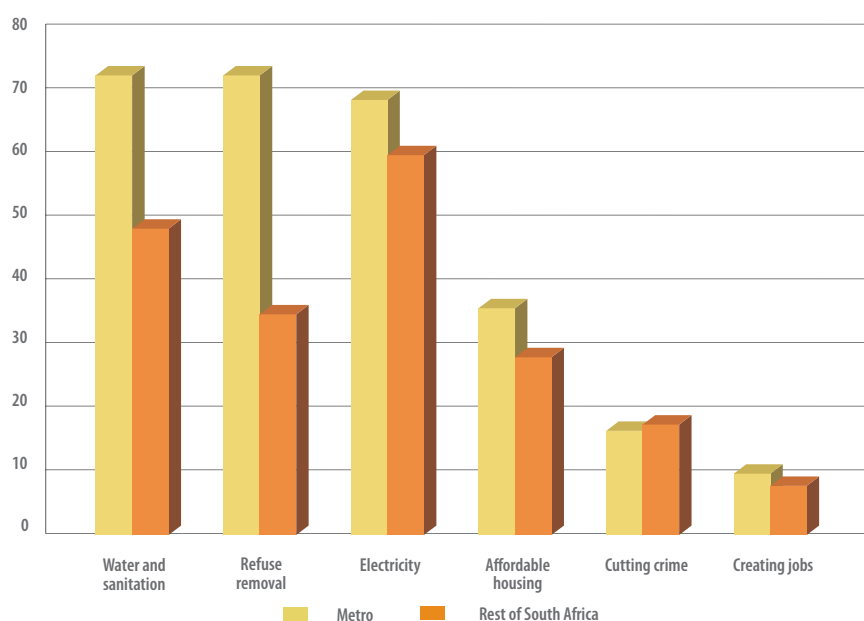


Satisfaction levels with water and sanitation, refuse removal and electricity were all relatively high and changed little over the six-year period. However, people were far less satisfied with the provision of affordable housing, efforts to cut crime and job creation policies. The high levels of dissatisfaction with crime reduction and job creation were striking, with no sign of improvement over the period. It is notable that the functions over which municipalities have most control were the ones on which they were most highly rated.

Figure 5.6 Satisfaction with specific services in the metros, 2003/04 compared to 2007/08

Source: HSRC, 2003–2008²⁰

Figure 5.7 compares the levels of satisfaction with specific services between the metros and the rest of the country.



Satisfaction levels with the municipal functions of water and sanitation, refuse removal and electricity are all noticeably higher in the metros than elsewhere, especially water and sanitation and refuse removal. Cutting crime is the only issue that non-metro residents were more satisfied about, which may be because crime is less of a problem outside the major cities, where there is less wealth and lower inequalities. Overall, the evidence strongly suggests that service delivery is superior in the metros.

Figure 5.7 Satisfaction with specific services in the metros and elsewhere, 2007/08

Source: HSRC, 2007/08²¹

To analyse and compare individual metros, a composite index of all the responses was created. The overall index is the sum of the responses on each of the six issues converted into a range of values from 0 to 100. The lowest possible overall score of satisfaction is 0 and the highest is 100. The highest score would require all respondents to express strong satisfaction with the handling of each issue, whereas the lowest score would require all respondents to express strong dissatisfaction. The data for individual years was added together and averaged to increase the number of responses and to reduce sampling errors, using the same procedure followed in the section above on trust.

Table 5.5 compares the ratings for each of the metros together with the metro total and the rest of the country for the periods 2003/04 and 2007/08.

Table 5.5 Satisfaction with services, 2003/04 compared to 2007/08

	2003/04 average	2007/08 average	Difference
Cape Town	55	50	(5)
Johannesburg	43	49	6
eThekweni	47	48	1
Ekurhuleni	44	48	4
Nelson Mandela Bay	54	46	(8)
Tshwane	54	43	(11)
Metro average	49	48	(1)
Rest of South Africa	41	37	(4)

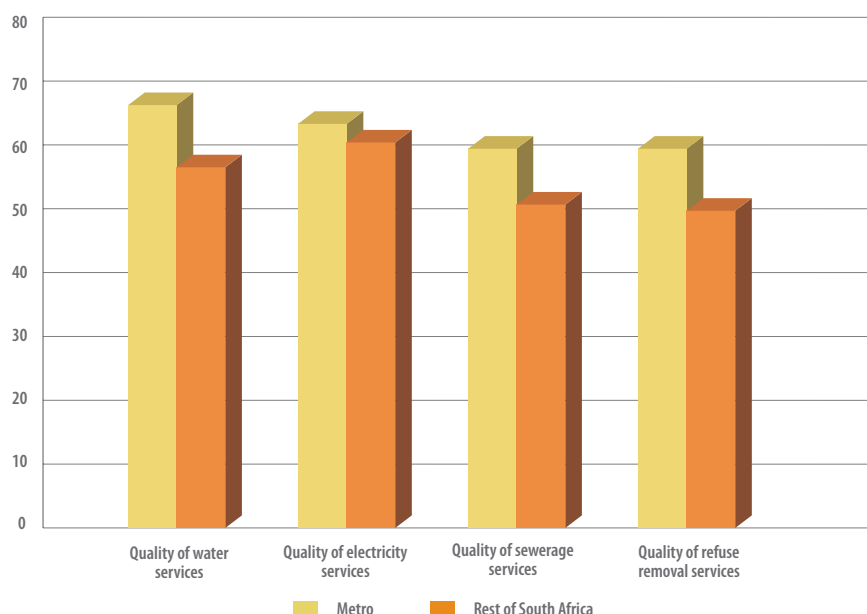
Note: Percentages are ranked in descending order by satisfaction in 2007/08.

Source: HSRC, 2003–2008²²

The levels of satisfaction with these services were higher in the metros than elsewhere, which is consistent with all other evidence provided in this report. Satisfaction with services in the metros and elsewhere showed a notable difference, which grew over time. Service satisfaction was highest in Cape Town, although it had declined. Johannesburg, eThekweni and Ekurhuleni were close behind, with satisfaction levels improved over time. Conditions in Nelson Mandela Bay and Tshwane appeared to have deteriorated.

The SASAS 2008 also asked respondents a related but slightly different question about the quality of water, electricity, water-borne sewerage and refuse removal services in their area. To compare the metros and the rest of the country, an index was created of each response with a range of values from 0 to 100. The highest score would require all respondents to rate a particular service of a very high quality, whereas the lowest score would require all respondents to rate it of a very poor quality. Figure 5.8 shows the results of the survey.

“Low electoral turnouts may reflect dissatisfaction with national or local government performance, lack of conviction in any of the existing political parties, apathy and belief that voting cannot change anything, or a broader sense of alienation from the political process, which could have many wider social consequences.”



The quality of these basic services is consistently rated more highly in the metros than elsewhere, in line with all other evidence available. The disparity is clear, although not wide. The variation is less across the rating of these essential services in the metros than elsewhere, which probably reflects the reduced availability of refuse removal, water-borne sewerage and water services in rural areas, resulting in lower subjective assessments.

Figure 5.8 Index of service quality, 2008 (%)

Source: HSRC, 2008²³

PUBLIC PARTICIPATION

Public participation can take many different forms, with different implications for city governance. Conventional forms of participation include voting and related activities, such as supporting the electoral campaigns of politicians and their parties. They also include participation in ward committees, stakeholder consultative forums, wider political discussions, writing letters to newspapers, signing petitions, and involvement in electronic forums that cover matters of public interest and debate. High levels of voting and related activities are important for democratic accountability and for the legitimacy of political leaders and governing institutions. Low electoral turnouts may reflect dissatisfaction with national or local government performance, lack of conviction in any of the existing political parties, apathy and belief that voting cannot change anything, or a broader sense of alienation from the political process, which could have many wider social consequences.

Unconventional political behaviour tends to refer to more direct forms of action, including involvement in mass protests, street demonstrations, civil disobedience campaigns and rates boycotts. High levels of engagement in such activities are likely to reflect people's disillusionment with government performance and possibly a desire for radical change. They may also reflect scepticism about the efficacy of the electoral system, perhaps caused by a context in which people typically vote along racial, cultural or religious lines, or in which powerful social and economic forces undermine democratic processes. The role of direct action and protest politics in democratic societies, and the extent to which they complement or contradict conventional electoral politics, may depend on the character and responsiveness of the existing political system and the kind of change being advocated. This includes whether the focus of concern is a particular policy or leader, a broader shift in policy direction or approach, or a change in the governing system or political regime.

Figure 5.9 compares popular attitudes with conventional political participation in the metros and the rest of the country.

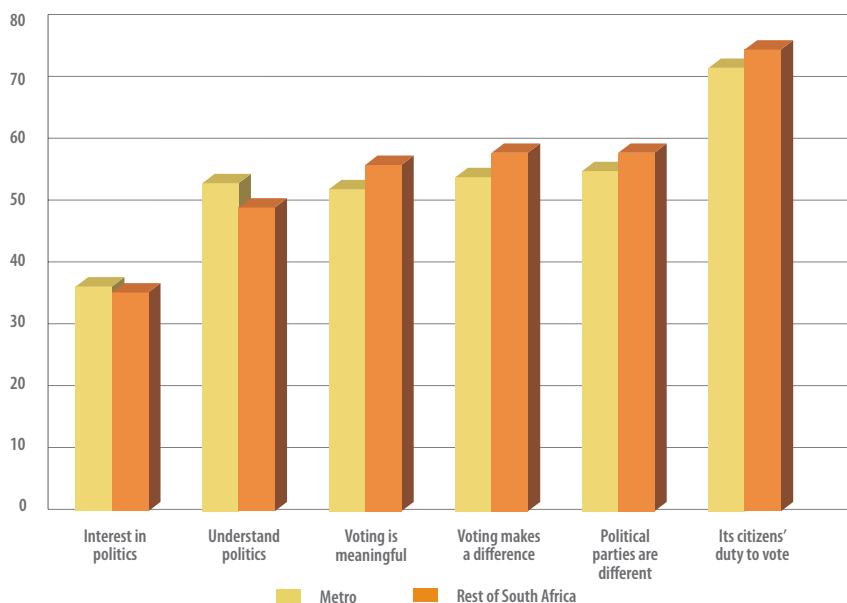


Figure 5.9 Belief in utility of conventional political participation, 2008 (%)

Source: HSRC, 2008 ²⁴

The 2008 SASAS identifies six measures of conventional political behaviour, including people's level of interest in politics and their views on whether voting is important or pointless. The results show a strong sense of duty to vote, but little interest in politics. People are also inclined to believe that voting makes a difference. People in the metros seem slightly more sceptical about conventional political participation than those in the rest of the country.

The actual levels of voting are much higher for national elections than for local, which is a common pattern internationally. Figure 5.10 shows the turnout of registered voters in the 2006 local government elections.

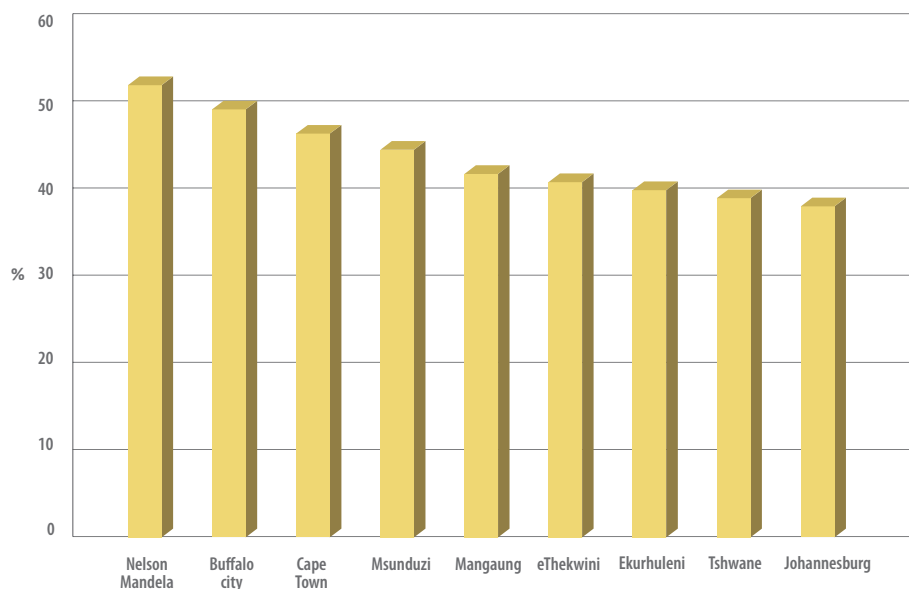


Figure 5.10 Registered voter turnout in 2006 local elections

Source: PDG report, 2010 ²⁵

Nelson Mandela Bay has the highest level of turnout and Johannesburg and Tshwane the lowest, but these levels are not especially low when judged by international standards.

The 2008 SASAS also identifies six ways in which respondents may have tried to improve things more directly. Table 5.6 compares the different forms of direct participation in the metros and elsewhere.

Table 5.6 Extent of participation in direct action, 2008 (%)

During the last 12 months have you:	Metros	Rest of South Africa
Contacted a politician, government or local government official?	11	9
Contacted a traditional leader?	5	9
Contacted a radio or TV station, or a newspaper?	9	5
Signed a petition?	7	4
Taken part in a protest march or demonstration?	12	6
Worked in a political party or action group?	3	3

Source: HSRC, 2008²⁶

Residents of the metros are more likely to involve themselves in direct action than those living elsewhere. The biggest difference is the proportion of people who have participated in a protest march or demonstration, which is twice as high in the metros as elsewhere. Nevertheless, the proportion is still quite small, at less than one-eighth of respondents.

To compare individual metros, a composite participation index was created as the sum of the responses to each of the six statements about conventional political behaviour. Its values range from 0 to 100. The highest score would require all respondents to say they were very interested in politics, and to agree strongly that voting makes a difference, that political parties are not all the same, and that citizens have a duty to vote. The lowest score would require all respondents to say the opposite. Figure 5.11 displays the index of political participation by metro for 2008.

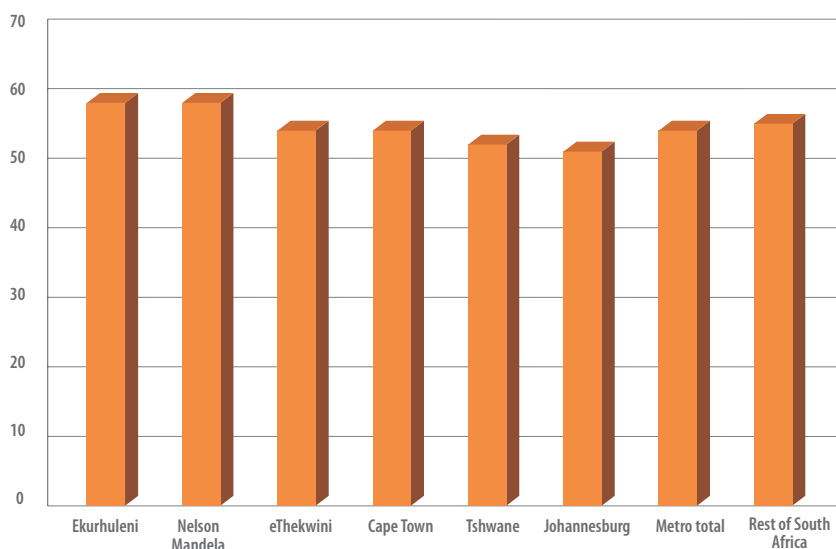


Figure 5.11 Index of political participation by metro, 2008 (%)

Source: HSRC, 2008²⁷

The results show little variation in attitudes to participation among the metros. People in Ekurhuleni and Nelson Mandela Bay appear to be slightly more positive about politics and voting than those in Johannesburg and Tshwane. People in eThekweni and Cape Town are somewhere in-between.

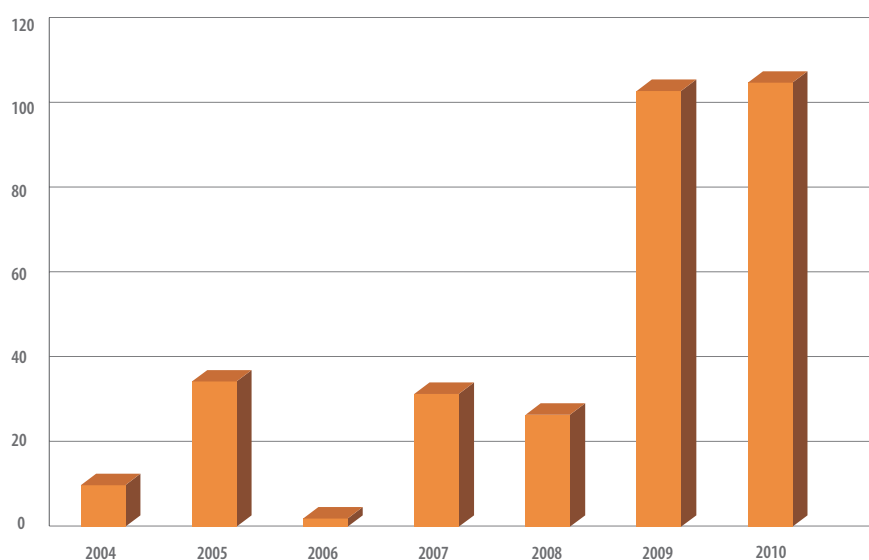
An obvious question that arises is whether political participation, trust in local government and experience of service delivery are linked. One might expect people who are more satisfied with public services to show greater trust in their municipality and more positive attitudes to participation.

The evidence available provides some support for this virtuous circle. For example, Cape Town and eThekweni are rated relatively high in terms of trust, service quality and satisfaction, and moderately in participation. Conversely, Tshwane is rated low in all these respects. Johannesburg is an anomaly – rated high in service quality and satisfaction, but low in trust and participation. The position of the non-metro areas is also contradictory – services are rated low but trust is about average and political participation is relatively high. Summing up, the quality of services, trust in local government and political participation may be linked, but other factors also appear to complicate this linkage.

SERVICE DELIVERY PROTESTS

Service delivery protests are an extreme form of direct political action seemingly born out of frustration with the pace and quality of state provision of housing, water, sanitation, roads, schools and other essential services. Most protests have been targeted at local government and linked with accusations of incompetence, misconduct and corruption.²⁸ Some marches and demonstrations have ended up in violent confrontations and caused considerable damage to public facilities and disruption to everyday life.²⁹ They have succeeded in drawing attention to serious impoverishment, injustice and maladministration. They have also reinforced popular perceptions that municipalities are in crisis and that failure is widespread. Some commentators have suggested that the grievances with housing should be directed at national and provincial government because housing is their mandate. However, local government is also implicated through its responsibility for essential infrastructure and services, the lack of which has often delayed the building of new housing. With the imminent devolution of housing and public transport functions to the metros, metros might become even more of a focus of popular protest if they do not carry out their new functions effectively.

Municipal IQ has compiled systematic information on service delivery protests through scanning media reports and creating a database that is regularly updated, and the results for 2010 are shown in Figure 5.12.



The number of protests appear to rise sharply in 2009 after the national and provincial elections, and to continue throughout 2010. Protests in 2009 and 2010 are three to four times higher than in previous years, a significant escalation in mass protest that gives considerable cause for government concern. Social unrest can destabilise communities and vandalised infrastructure and property can be costly for municipalities to repair. Overt oppositional action of this kind also threatens the legitimacy of the democratic system and can cause serious reputational damage to the government and nation.

Figure 5.12 Major service delivery protests, 2004–2010

Source: *Municipal IQ, 2010*³⁰

The location of service delivery protests has been very uneven across the country, with a strong concentration in the larger metros. Figure 5.13 shows the total number of protests in each of the nine SACN member cities from 2004–2010, which is about half of the national total. Considering their population size, Johannesburg and Cape Town experienced disproportionate numbers of protests, whereas eThekweni and Tshwane had less than their proportionate share. Most protests occurred in informal settlements and were associated with demands for better living conditions. The relatively few protests in the worst performing (non-metro) municipalities with the largest service backlogs, and in towns or rural areas with the poorest economic conditions, means that the actions were not simply a function of objective economic and institutional circumstances.

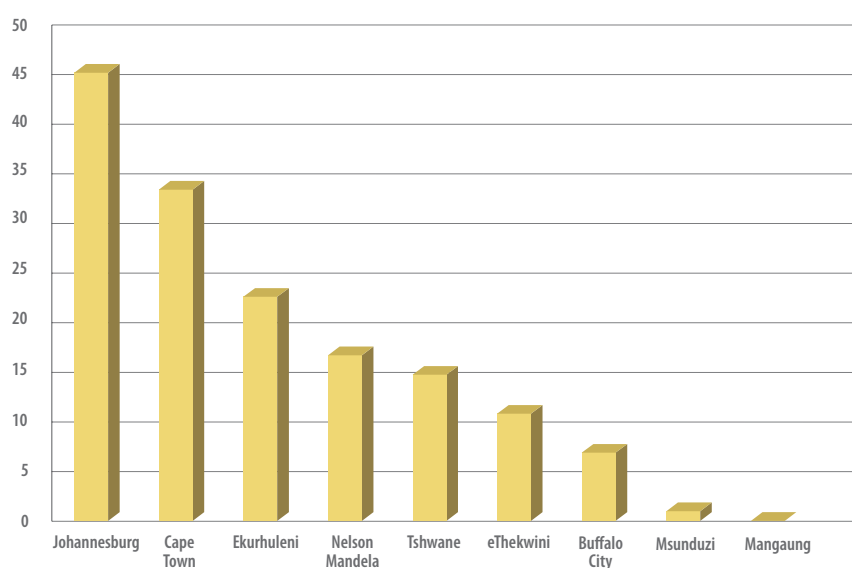


Figure 5.13 Major service delivery protests by municipality, 2004–2010

Source: *Municipal IQ, 2010*³¹

A special parliamentary report identified some of the general reasons for the protests that might help to explain their spatial distribution:³²

While dissatisfaction with poor service delivery has certainly been a factor in triggering some of the service delivery protests, the causes of the protests are far more varied and complex than this. It must therefore be acknowledged that there are a multiplicity of factors at the root of the current protests and that these can best be placed into three broad categories: systemic (such as maladministration, fraud, nepotism and corruption in housing lists); structural (such as healthcare, unemployment and land issues); and governance (such as weak leadership and the erosion of public confidence in leadership).

Additional underlying factors appear to be the pressures of urbanisation and consequent congestion in informal areas, coupled with frustrated expectations of achieving a better life by moving to the cities in pursuit of improved economic opportunities.³³ Population growth contained within the boundaries of existing shack settlements intensifies the competition for scarce resources (especially land and access to services) within and among communities. A related factor may be the constrained household aspirations from being trapped on the outskirts of cities, aggravated by hollow promises of improved delivery and job creation in the face of councillor indifference or municipal incapacity. Communities believe that the formal channels of political influence – such as ward committees – are too slow, ineffectual or dysfunctional. During 2009 the protests peaked in winter, when living conditions were harsher, utility costs had risen and industrial action was also widespread.³⁴ The recession may have been another factor, pushing more households into poverty and debt, increasing the demands on free municipal services, and reducing council revenues from rates and service charges.³⁵

The implication is that the appropriate response to the protests is multifaceted. Improved communication, transparency and realistic timeframes are vital to explain to existing and potential protestors how and by when the underlying problems will be addressed. This supports earlier findings in this chapter, that many people distrust municipalities and are dissatisfied with the extent of information and consultation that takes place. Beyond this, the protests clearly require a step change in institutional support, capacity building and public investment in housing, infrastructure and community services to upgrade informal settlements, create more employment and improve livelihoods. In a context of constrained resources, and given the enormous challenges faced, efforts to involve and mobilise communities more directly in the development process are fundamental. A more active citizenry would help to hold municipal leaders and officials to account and thereby strengthen local democracy. For example, systems of participatory budgeting at community level would help to expose and reduce corruption and ensure that available funds are used for those who need them most. The role of municipalities remains critical, but their effectiveness as the hands and feet of the developmental state in turn depends on greater backing from provincial and national authorities. Increased material support from national and provincial government is essential, as well as direct intervention in instances of municipal indifference, political infighting, nepotism, fraud and outright failure.

OUTSTANDING PROBLEMS

The SASAS provides information on the major problems identified by the general public and how these vary between places. Table 5.7 summarises the evidence by identifying the five concerns mentioned most often by people in priority order in each of the metros and the rest of the country, in 2003 and 2008.

Table 5.7 Top five national priority issues, 2003 and 2008

		1	2	3	4	5
Cape Town	2003	Unemployment (74%)	Crime/safety (67%)	HIV/Aids (46%)	Poverty (23%)	Corruption (17%)
	2008	Crime/safety (74%)	Unemployment (69%)	HIV/Aids (50%)	Poverty (32%)	Education (14%)
eThekweni	2003	Unemployment (80%)	HIV/Aids (70%)	Crime/safety (49%)	Poverty (39%)	Housing (16%)
	2008	Unemployment (77%)	HIV/Aids (69%)	Crime/safety (56%)	Poverty (33%)	Xenophobia (10%)
Ekurhuleni	2003	Unemployment (81%)	HIV/Aids (68%)	Crime/safety (60%)	Poverty (47%)	Corruption (11%)
	2008	HIV/Aids (72%)	Unemployment (71%)	Crime/safety (56%)	Poverty (52%)	Human rights (7%)
Johannesburg	2003	Unemployment (80%)	HIV/Aids (47%)	Crime/safety (46%)	Housing (30%)	Poverty (25%)
	2008	Unemployment (66%)	HIV/Aids (63%)	Crime/safety (53%)	Poverty (39%)	Education (15%)
Nelson Mandela Bay	2003	Unemployment (75%)	Crime/safety (63%)	HIV/Aids (49%)	Poverty (25%)	Housing (24%)
	2008	Unemployment (62%)	Crime/safety (48%)	HIV/Aids (44%)	Poverty (30%)	Corruption (16%)
Tshwane	2003	Unemployment (71%)	Crime/safety (66%)	HIV/Aids (60%)	Poverty (28%)	Corruption (18%)
	2008	Unemployment (65%)	HIV/Aids (63%)	Crime/safety (54%)	Poverty (41%)	Service delivery (15%)
Metro total	2003	Unemployment (77%)	Crime/safety (58%)	HIV/Aids (57%)	Poverty (32%)	Housing (15%)
	2008	Unemployment (69%)	HIV/Aids (62%)	Crime/safety (58%)	Poverty (38%)	Education (10%)
Rest of SA	2003	Unemployment (83%)	HIV/Aids (48%)	Poverty (45%)	Crime/safety (42%)	Service delivery (16%)
	2008	Unemployment (75%)	HIV/Aids (48%)	Poverty (47%)	Crime/safety (43%)	Service delivery (18%)

Source: HSRC, 2003 and 2008³⁶

Unemployment emerged consistently as the most commonly cited problem, identified by about three-quarters of the population. This was followed by three issues that roughly half of the respondents mentioned: HIV/Aids, crime/safety and poverty. Lastly, the four issues mentioned by less than one-fifth of the respondents were corruption, education, affordable housing and service delivery.

Looking at trends over time, unemployment remained the most commonly identified problem from 2003 to 2008, although its importance diminished slightly, which is not surprising, as this was a period of employment growth and falling unemployment. HIV/Aids remained the second major concern across the country as a whole, and rose slightly in importance, moving from third to second most important concern in the metros. The importance of crime and safety remained unchanged from 2003 to 2008. Poverty grew in importance, especially in the metros.

Comparing different parts of the country, unemployment, poverty and service delivery seemed slightly less important in the metros than elsewhere, perhaps reflecting the better availability of jobs and livelihoods. In contrast, HIV/Aids and crime/safety were perceived to be far bigger problems in the metros than elsewhere.

Comparing individual cities, Cape Town was the only place where crime/safety was considered the main problem facing society and a bigger issue than unemployment. Ekurhuleni was the only city where HIV/Aids was considered a (slightly) greater problem than unemployment. Otherwise, the responses to the four biggest challenges were fairly consistent across the cities, apart from a switch in priority between HIV/Aids and crime/safety. In most cities, especially Cape Town and Johannesburg, education rose in importance. Housing appeared to have diminished slightly in importance. This evidence may provide some foundation for thinking that the service delivery protests relate to structural concerns about unemployment and poverty as well as the quality of municipal services. It would be worthwhile for each of the metros to question whether they are responding adequately to popular priorities.

A NATIONAL TURNAROUND STRATEGY

Despite many documented examples of good practice and successful progress in extending essential services and infrastructure to marginalised communities, at the end of the first decade of democratic local government it has become increasingly apparent that many municipalities are not meeting the objectives outlined in the Constitution. In 2009 the government acknowledged that 'on the whole local government is struggling to fulfil this developmental mandate, and many municipalities are failing altogether'.³⁸ The delivery agreement reached between the presidency and the Department of Cooperative Government and Traditional Affairs (COGTA) during 2010 stated that:³⁹

There are many municipalities that are in deep distress. This distress refers to their faltering ability to deliver services, to manage their institutions, and to engage with communities. [...] All these problems combined have shattered the confidence of the majority of our people in our local government system. Municipalities were envisioned as sites where our commitment to participatory governance would achieve meaning and content. Instead communities feel alienated and disconnected from decision-making processes and feel disempowered in influencing the affairs of the municipality.

This helps to explain why the government initiated a Local Government Turnaround Strategy during 2009/10.⁴⁰ The authors of the strategy produced a stark assessment of the state of municipal government that highlighted many serious shortcomings:⁴¹

[T]here is a risk that the overall positive progress and success of the new local government system is increasingly being overwhelmed by a range of factors and negative practices both internal and external to municipalities [...] much of local government is in distress and this state of affairs has become deeply rooted within our system of governance.

The authors acknowledged the need for widespread improvements in leadership, policy, regulation and oversight at local, provincial and national levels, stating that 'the current state of local government necessitates a fresh approach and a collective response from the state and its social partners'.⁴²

The metropolitan authorities were generally considered to be functioning better than the smaller municipalities: 'the economically stronger metros and large cities are generally the best performing municipalities in the country. Per capita expenditure in these municipalities is also amongst the highest in the country'.⁴³ However, the metros also had weaknesses. Instances of excellence and innovation too often depended on a few personalities and were not institutionalised or sustained. More generally:⁴⁴

[T]hey are struggling to manage the huge social and economic implications of urbanisation and apartheid spatial planning – growing populations, extremely high levels of poverty, unemployment and inequality; large informal settlements on the urban fringe; inadequate public transport and a shortage of land for development. This convergence of pressures has created dangerous conditions for social instability. Public protests are common, widespread and often violent.

The turnaround strategy highlighted a breakdown of trust between communities and elected councillors, and a poor relationship between municipal management and councillors, in many parts of the country. Internal political party factionalism and conflicts had resulted in instability and undermined decision-making in many places. Several municipalities had been placed under administration because of blatant governance failures. In addition, senior managers and councillors were often political appointments (cadre deployment) and lacked the skills required to do their jobs properly. A number of municipal managers had been suspended for a wide variety of reasons, and many municipalities lacked the organisational systems and procedures for effective service delivery. The financial state of many municipalities was poor, with a weak tax base and financial mismanagement leading to unsustainable and wasteful patterns of spending. Deficient professional capacity had resulted in under-investment in bulk infrastructure, poor project planning and management, and neglected operations and maintenance.

The report recognised that the reasons for this alarming state of affairs were not confined to municipalities and their political masters. Powerful social and economic forces were shaping local government and society as a whole, including shifts in values and norms of ethical behaviour. National and provincial authorities and parastatals were also criticised for fragmented policies and regulations, uncoordinated municipal supervision and support systems, and general insufficient co-operation. Other external problems included weak local economies, resulting in limited potential for revenue generation, large-scale poverty and widespread service backlogs in some parts of the country.

Table 5.8 shows the variable status of different authorities and the marked contrasts in the underlying conditions affecting their areas. The Gross Value Added (GVA) statistics reflect that the metros have a slightly lower incidence of poverty and a stronger potential tax base than other types of municipalities. COGTA considers the metro councils to have low levels of vulnerability in terms of municipal capacity and social, economic and environmental conditions. None of them is regarded as financially distressed and none has audit problems.

Table 5.8 Socio-economic conditions and municipal capacity across South Africa

Type of municipality	Total number of municipalities	Total number of households ('000)	Percentage in poverty	Percentage of national GVA	GVA per household (R'000)	Number of municipalities by level of vulnerability (1=high, 4=low)				Number of financially distressed municipalities	Households with access to basic services				Adverse audit opinions	Disclaimer audit opinions	Audit reports not submitted
						1	2	3	4		Over 90%	60–89%	30–59%	Under 30%			
A (metro)	6	4 714	36	59	154				6	–	1	5					
B1	21	2 207	42	18	103			7	14	14	1	13	5	2		6	2
B2	29	1 095	44	7	78		4	8	17	17	3	13	10	3	1	6	5
B3	111	1 606	52	9	70	7	34	43	27	27	4	53	34	20	4	39	19
B4	70	2 878	74	6	27	50	20			–				70	3	25	8
C1	25	3 838	44	0.3	–	1	2	10	12	4						3	1
C2	21	3 949	66	–	–	11	9	1		3						6	4
Total	283	12 500	56	100	99	69	69	69	76	58	9	84	49	95	8	85	39

Source: Department of COGTA, 2010b.⁴⁵

One of the turnaround strategy's conclusions was that there had been insufficient appreciation by government of the differences among municipalities:⁴⁶

[B]y and large governance and financial management frameworks, functional arrangements and policy targets apply uniformly irrespective of the vast capacity and economic differences between municipalities [...] National targets for service delivery that apply uniformly irrespective of the economic and institutional differences between municipalities simply set municipalities up to fail.

Some municipalities had found it far more difficult than others to establish themselves, consolidate their systems, recruit competent professional staff, improve their revenue collection, manage their cash flow and achieve viability:⁴⁷

Much of the reason for the limited success of past attempts to improve the performance of local government stemmed from the fact that we tended to treat all municipalities as uniform, undifferentiated entities. This was clearly a mistake and we now recognise that municipalities have different capacities and their social and economic contexts also vary.

Other conclusions were that government's whole approach to local government had to be different, and a collective response was required (local government is everyone's business): 'government has not addressed the root causes of these failures and has not to date coordinated a forceful agenda for change arising from these lessons'.⁴⁸ An independent observer stated that 'the intergovernmental system has largely failed to support local government adequately. [...] Municipal governments are bearing the brunt of state failure regarding policies that actually have nothing to do with them'.⁴⁹ The 2010 Delivery Agreement acknowledged that many departments and parastatals were unsupportive of, and unresponsive to, the needs of municipalities. The agreement stated that '[a] further explanation for limited success was the inability of national government departments that impact local government to develop a cohesive plan and fully co-operate to ensure a unified approach in their engagements with municipalities'.⁵⁰

One of the far-reaching proposals to emerge from COGTA's analysis has been for the creation of a national special purpose vehicle (SPV) to take over the infrastructure delivery role of weaker municipalities. This SPV could pool government infrastructure funds, draw in private sector skills and resources, and create a more streamlined (centralised) procurement process for service providers. Another proposal has been for the expansion of the metros into surrounding areas to replace ill-performing district councils. The metros, which have not experienced the same level of difficulties, could be delegated additional powers and responsibilities to alleviate some of the strain experienced by other municipalities. For example, Tshwane could absorb the under-performing Metsweding district and end up covering a much larger territory.

CONCLUSION

A bold vision of developmental local government underpinned the creation of metropolitan municipalities in 2000/01. They were expected to establish the strategic capabilities to overcome the damaging divisions of apartheid, to promote inclusive economic growth, and to accommodate the pressures of urbanisation. A new, more responsive mode of decision-making was also envisaged with greater community involvement in the development process in order to broaden and deepen democracy. Development was to be far more than the provision of basic services to a passive citizenry.

A decade later, these goals seem rather idealistic and remote in the face of massive basic challenges. Metropolitan government has struggled to cope with the competing demands placed upon it and to address the fundamental challenges of social and spatial inequality, unemployment and poverty. The many signs of systemic stress and vulnerability include political instability and factionalism; institutional capacity constraints and mismanagement; insecure revenue streams and under-investment in infrastructure and services. Local government has been criticised for its lack of openness, unresponsiveness and poor consultation. Its standing in society has deteriorated over the last decade and it has been one of the least trusted public institutions in the country for at least this period.

The actual delivery of basic services in the metros seems to have been better compared with the rest of the country, which was reflected in higher levels of public satisfaction. Yet there is no room for complacency, as a sizeable proportion of metro residents have also expressed dissatisfaction with the quality of service provision. Furthermore, satisfaction levels appear to have declined recently in some of the metros, suggesting deterioration in some aspects of delivery. According to many indicators examined, a distinction seems to have emerged between the slightly stronger performance of Cape Town, eThekweni and Johannesburg on the one hand, and Ekurhuleni, Tshwane and Nelson Mandela Bay on the other.

City Governance continued

People generally seem to have a high level of respect for conventional electoral politics and only a small minority of the population have engaged in protest action. Metro residents appear to be slightly more sceptical about conventional political participation than people elsewhere, and to have slightly more experience of direct action. The most visible form of mass action has been the escalating service delivery protests of recent years, which focused on informal settlements in the larger metros. Frustration at the pace and quality of state provision of housing and improved services seems to have been a key factor, especially for people who have migrated to the cities in search of better living standards.

In principle, the energy and determination of these communities needs to be channelled in more constructive directions through participatory forms of planning and development, and practical projects of lasting value. Empowered communities could provide valuable human capacity for useful work and at the same time constitute an important means to hold civic leaders and officials to account. The Township Development Strategies proposed at the end of Chapter 3 might be a good way of doing things differently and engaging in practical problem-solving. By listening to and working with poor communities, all sorts of schemes could be devised to enhance human and organisational capabilities, and produce jobs and facilities. Creating community-based organisations could build upon local knowledge and social networks, strengthen the capacity of people to organise themselves and represent their interests, and provide public services and infrastructure more cost-effectively than by using private contractors.

The governance difficulties experienced by the metros indicate vulnerability and instability rather than resilience. The root causes of these problems need more explicit attention from national government and political leaders. Looking ahead, there are dangers in overloading the metro authorities with additional functions and larger boundaries without commensurate support from national and provincial government and parastatals, and without reforms of various kinds to enable them to cope. Some metros are currently better placed than others to play a bigger role, and a differential approach may avoid pushing fragile and insecure institutions beyond the tipping point. The steady phasing-in of extra functions would also help to ensure that progressive improvements can occur in staffing, policies, systems and practices. There seems to be a particular need for procedural changes to ensure greater community participation, local accountability and responsiveness. Government proposals for SPVs could undermine local democracy by drawing responsibilities and resources back towards the centre, thereby reducing the scope for community engagement and empowerment. SPVs should, therefore, only be considered as a last resort and as a temporary measure until local capabilities can be restored.





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“The effective financing of city governments is, in turn, fundamental to the effective functioning of city governments. City finance has strategic, social, economic and political dimensions, despite appearing technical. ...City finance is also about accountability for the taxes and revenues raised from citizens and businesses, and the rigour and transparency with which financial resources are managed.”



The Financial State of the Cities



The Financial State of the Cities



South Africa needs well-functioning, sufficiently resourced city governments that provide effective built-environment services to households and businesses. The city governments are held accountable by local households and businesses for providing these services.

The effective financing of city governments is, in turn, fundamental to the effective functioning of city governments. City finance has strategic, social, economic and political dimensions, despite appearing technical. For example, city finance is about making budget allocation choices so that key goals are met, such as addressing backlogs and poverty; maintaining existing infrastructure; and expanding services to accommodate new economic activity and population growth.

City finance is also about accountability for the taxes and revenues raised from citizens and businesses, and the rigour and transparency with which financial resources are managed. Generally speaking, it is preferable for city expenditure requirements to be raised from local revenue sources, as this maximises local accountability for local services. In principle, given the correct allocation of revenue sources and expenditure responsibilities, city governments have the best potential to raise their expenditure needs from their own local revenue sources.

South Africa's nine city governments are responsible for ensuring that effective municipal infrastructure and services are sufficient to support nearly two-thirds of the economic activity of the country. Any deficiencies in these services will have obvious consequences for national economic development in the form of higher costs, lower turnover, and reduced gross value added (GVA).¹

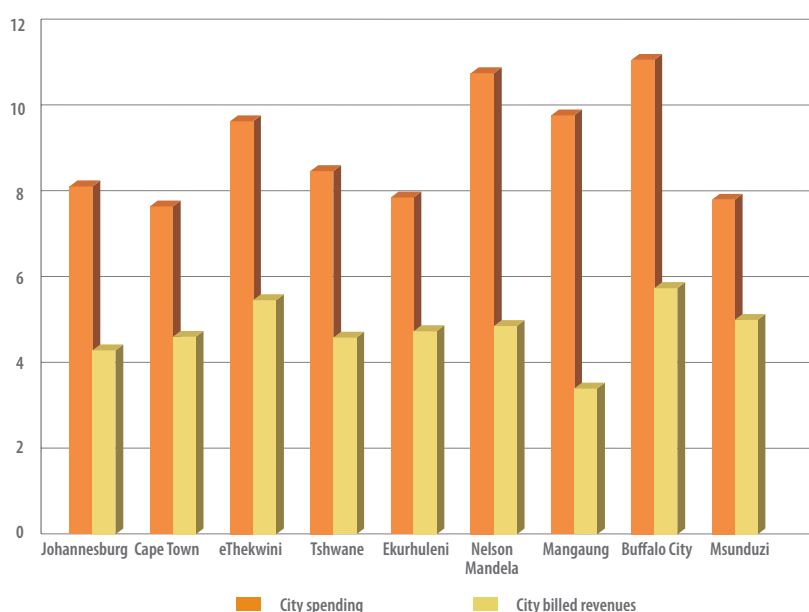
The nine cities house over one-third of the national population, including 40% of the registered unemployed. They also account for 65% of the national GVA per year and concomitant percentages of in particular the tertiary and secondary economic sectors: from finance and business services through transport and communications, to wholesale and retail trade, to construction and manufacturing. The efficient functioning of the major cities is as important as the effective operation of wider national logistical systems such as the national road, rail, power and telecommunications networks.





“City spending has been increasing rapidly in recent years, often as a result of high capital spending.”

The extent to which cities finance their own expenditure in practice is illustrated for 2008 as a fraction of local GVA in Figure 6.1.



City governments are necessarily big spenders, as they must provide built-environment services to 63% of the economy and 36% of society. In 2008/09, they accounted for 71% of the total budgeted operating expenditure of all local governments and 54% of the total budgeted capital expenditure. Furthermore, city spending has been increasing rapidly in recent years, often as a result of high capital spending (see Figure 6.2). City operations comprise a significant portion of local city economies: total city spending was as much as 8.5% of total city GVA in 2008, as illustrated in Table 6.1.

Figure 6.1 City total spending and billed revenues as share of local GVA, 2008

Source: Calculated by the authors from city annual financial statements

“South Africa’s nine city governments are responsible for ensuring that effective municipal infrastructure and services are sufficient to support nearly two-thirds of the economic activity of the country.”

The Financial State of the Cities *continued*

Table 6.1 GVA, population, spending and own revenue per city, 2008

	GVA (R billion)	Pop (m)	GVA/ capita (R)	City spending (R billion)	City spending as % of GVA	City billed revenues (R billion)	City billed revenues as % of GVA
Johannesburg	263.3	3 226	81 606	21.395	8.1%	11.316	4.3%
Cape Town	199.7	3 151	63 363	15.294	7.7%	9.208	4.6%
eThekweni	166.8	3 394	49 154	16.094	9.6%	9.125	5.5%
Tshwane	154.8	1 857	83 329	13.133	8.5%	7.110	4.6%
Ekurhuleni	149.4	2 543	58 722	11.749	7.9%	7.084	4.7%
Nelson Mandela	49.0	1 174	41 729	5.277	10.8%	2.384	4.9%
Mangaung ²	17.2	0 660	26 033	1.682	9.8%	0.585	3.4%
Buffalo City	20.9	0 840	24 891	2.318	11.1%	1.203	5.8%
Msunduzi	24.8	0 736	33 722	1.938	7.8%	1.242	5.9%
TOTAL 9 CITIES	1 045.8	17 582	59 480	88.881	8.5%	49.256	4.7%

Sources: GVA and population data from SALGA database, 2009, updated to 2008 with relevant growth factors; expenditure and revenue information calculated from city annual financial statements

The ratio was least for Cape Town, Ekurhuleni and Msunduzi (at 7.7 %, 7.9% and 7.8%), and as much as 11.1% in the case of Buffalo City. Although recent high capital spending may make these figures unrepresentative of long-term trends, it is not noticeably the 2010 FIFA World Cup™ host cities that are spending relatively high fractions of local GVA. Own revenue comprised on average around 4.7% of city GVA. Despite recent trends, city governments remain largely funded by local residents and businesses, a point of some significance for financial and general accountability. Buffalo City, Msunduzi and eThekweni bill notably higher fractions of GVA, while Johannesburg's own billed revenue is the lowest fraction at only 4.7% of local GVA.

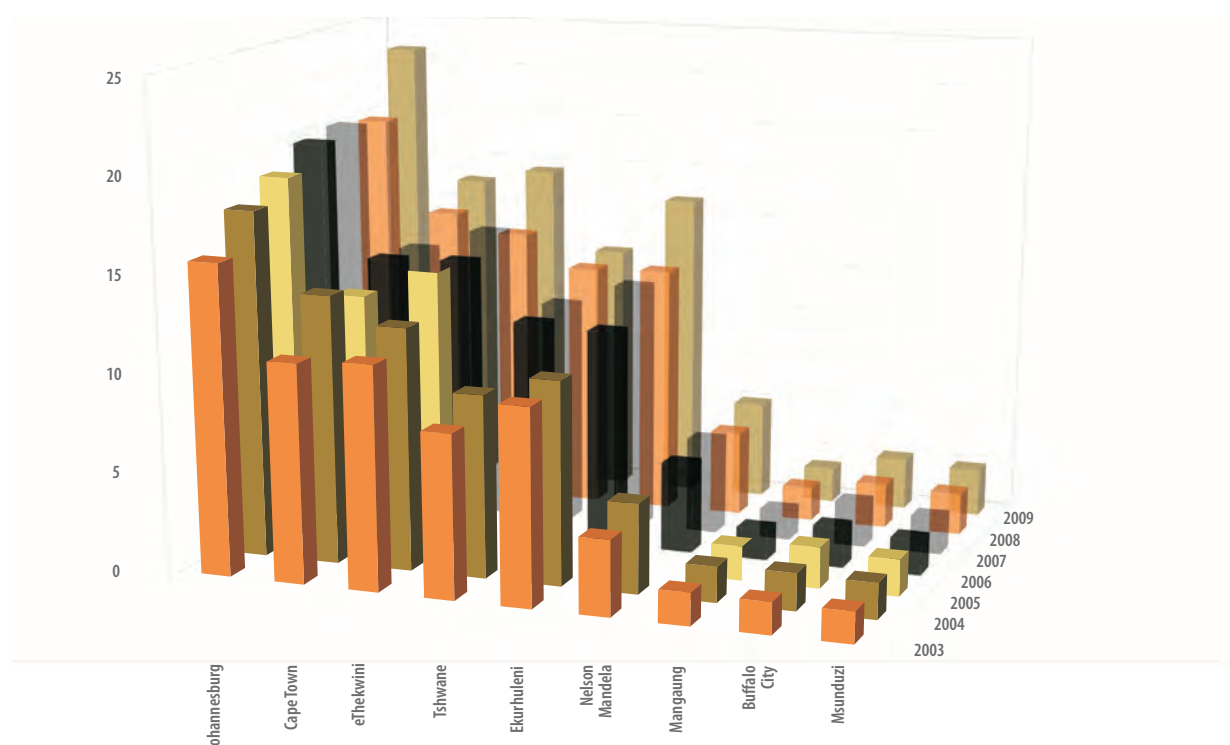


Figure 6.2 Total expenditure of city governments 2004–2009 (constant 2008 prices) (R billion)

Source: Calculated by the authors from city annual financial statements

FINANCIAL RESILIENCE IN CITY GOVERNMENT

The concept of 'resilience' provides a useful overarching framework for city treasurers to use to link their concerns to those of city role players, because the concept lies at the root of their greatest fears and ambitions. A city treasurer knows all too well the financial constraints facing the spending departments and seeks to provide as much finance as possible to spenders. However, the city treasurer has to weigh this against what is available, whether in the short-term cash balances of the city government, or in the medium-term budget estimates, or in the long-term city development strategy. A financially resilient city government is presumably one which manages its short, medium and long-term financial position so as to maximise the resources available.

Financially resilient cities are likely to be those which:

- raise a meaningful share of their operational revenues themselves, in the interests of accountability and good fiscal management (own revenues);
- consistently, accurately and completely bill, and fully collect, taxes and charges due from households, businesses, and other organisations (revenue effort);
- ensure that tariffs and charges meaningfully reflect actual costs incurred on a city wide basis, yet are set with due regard to the ability to pay of households and organisations (realistic tariffs);
- strike deliberate and careful budget balances between expenditures to support growth, to address backlogs and to maintain existing service infrastructure;
- explicitly consider returns from investment before committing resources on a large scale;
- show imagination and innovation in responding to emerging problems or challenges (creativity);
- effectively contain and manage major cost items such as staff and bulk services from rising significantly above inflation (cost control);
- choose a capital financing strategy with considered and appropriate combinations of own resources (current or retained operational surpluses), grant (capital), borrowed (debt) and private (PPPs) resources, while carefully managing the financial risks and operations involved in these strategies (capital financing);
- manage cash flows to minimise costs and risks (cash flow); and
- ensure that procurement and employment procedures deliver good contracting decisions i.e. obtain the correct goods and services at the best price while achieving policy objectives (support services).

Financial resilience is in some sense dependent upon the economic resilience of the city because the local economy is the origin of so much of the fiscal resources that the city spends to deliver services. However, financial resilience also depends on the governance, capacities and operational effectiveness and co-ordination of the agencies and departments that deliver built-environment services within the city.

Financial resilience is about the strategic and operational effectiveness of the city government as a whole. Responsibility for financial resilience, as for city resilience, extends far beyond the responsibility of the city finance head. However well the key financial indicators of the city government are managed in the medium-term, it is ultimately to no avail if the long-term strategic direction is unsound. Conversely, city governments who follow a financially unsound strategy could be saved by the intrinsic social and economic resilience of the city.

THE FINANCIAL HISTORY OF THE CITIES 2003–2009

The audited financial statements³ of the nine cities provide the basis of this financial history. The financial data considered falls into three groups:

1. Operating revenues, expenditures and surpluses relate to the financial implications of the ongoing operations of city governments: the recurrent costs of the services being provided, the charges and taxes levied and grants received to cover these recurrent expenses, and the final operating surplus or deficit achieved at the end of the year.
2. Capital expenditure and its financing are those dealing with the infrastructure and other capital spending undertaken by a city government. The characteristics and revenue sources for such spending differ considerably from operating expenditure.
3. Cash flow and working capital indicators are particularly important in respect both of overall financial health and capacity, and the effectiveness of city financial management.

The implications of the new accounting standards were extensively addressed in SACN (2007, chapter 3).⁴

The Financial State of the Cities *continued*

Operating revenues, expenditure and surpluses

Total revenue

A long-term overview of the total revenues of the nine cities over seven financial years to 2009 is set out in Table 6.2.

Table 6.2 Real annual increase in city total revenues 2003–2009 (constant 2008 R billion)

	2004	2005	2006	2007	2008	2009
Johannesburg	20%	16%	6%	(1%)	1%	8%
Cape Town		(1%)	1%	8%	13%	17%
eThekweni	9%	17%	3%	7%	16%	2%
Tshwane	5%	19%	8%	(2%)	9%	5%
Ekurhuleni	10%	7%	–	7%	(6%)	5%
Nelson Mandela	13%	3%	15%	(4%)	15%	7%
Mangaung	10%	10%	29%	(41%)	15%	8%
Buffalo City	18%	23%	(1%)	1%	4%	7%
Msunduzi	13%	3%	9%	(3%)	14%	6%
TOTAL 9 CITIES		11%	5%	1%	7%	8%

Source: Calculated by the authors from city annual financial statements

Total city revenues increased from R61.369 billion in 2004 to R83.586 billion in 2009, an increase of 91% in five years (2003 is disregarded because it does not include Cape Town revenue data). Mangaung's decline in 2007 is associated with the establishment of Centlec.⁵ If Mangaung is excluded from the calculation, total spending by the eight cities increased from R51.8 billion in 2004 to R81.9 billion in 2009, a real increase of 37% over five years, or an average annual rate of real revenue growth of 6.5%.

The explanation for this rapid real revenue increase can be found in the different revenue sources of the cities, which are shown in Figure 6.3.

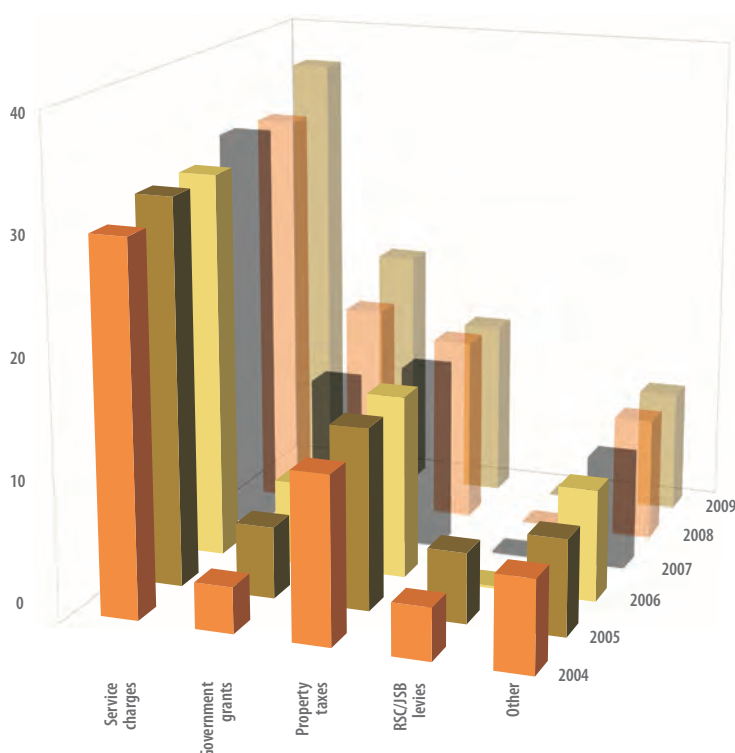


Figure 6.3 Aggregate eight-city revenues by type (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements.

As Figure 6.3 shows, aggregate property tax revenues have been relatively constant in real terms, and even declined in 2007 and 2009. Aggregate revenues from service charges grew slowly and intermittently until the sharp increases of 2009, which inaugurated what is expected to be a sustained period of rapidly rising charges for water and electricity. Other revenue sources⁶ remained constant at 12% of total aggregate revenues⁷, while RSC⁸ levies ceased to be relevant after 2006, as there was a grace period to pursue non-payers.

The only revenue source whose share increased over this period was government grants and subsidies (capital as well as operating), which went from around 6% to 25% between 2004 and 2009. This trend has been remarkably pronounced, as Figure 6.4 shows.

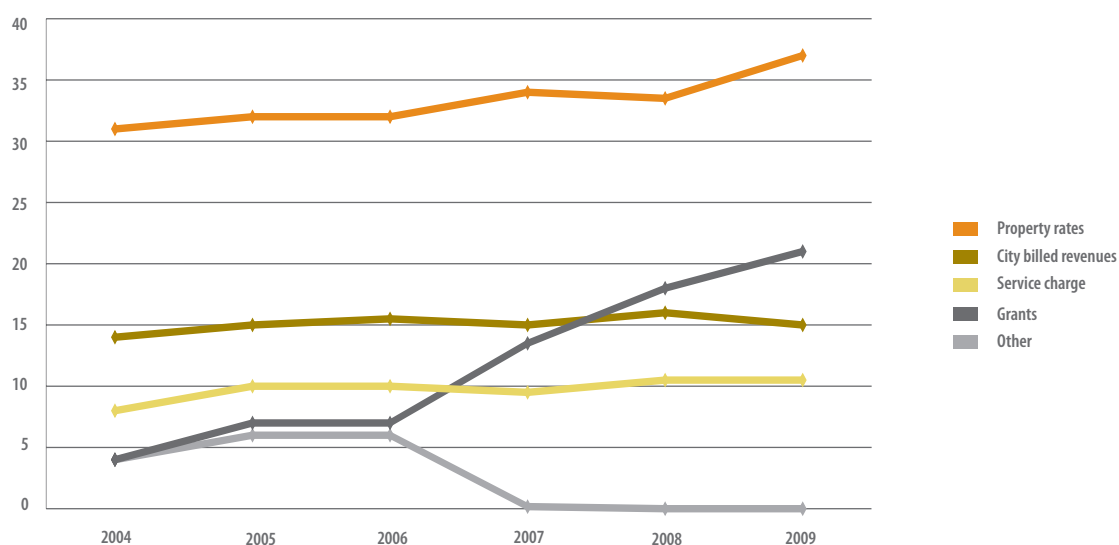


Figure 6.4 Revenues raised by source for the cities (constant 2008 R billion)

Source: National Treasury Conditional Grant Database. Available at www.treasury.gov.za

Government grants to the cities

The substantial expansion of the national grant programme to local government, specifically city government, is a defining characteristic of recent city finances. Over the last five years, the changes in equitable share and the increase in conditional grants have transformed the national government grant programme.

Table 6.3 details the national grants budgeted for each of the nine cities in 2008/09. National government allocated R44.197 million to all municipalities. Of this amount, 43.1%, or R19.048 million went to the nine cities.



The Financial State of the Cities *continued*

Table 6.3 Details of national grants to the cities as budgeted for 2008/09 (R million)

	JHB	CT	ETH	TSH	EKU	NMB	MAN	BCM	MSU	Total 9 cities
Equitable Share	3 038.8	1 710.5	1 607.6	1 303.1	1 672.5	682.5	291.8	310.3	176.1	10 793.1
Municipal Infrastructure (MIG)	397.0	273.4	425.3	273.6	357.6	129.3	120.2	137.0	73.9	2 187.2
Public Transport Infrastructure Systems (PTIS)	661.2	424.8	624.9	510.2	7.6	305.5	242.6	8.6	2.1	2 787.6
2010 FIFA World Cup™ Stadiums Development	634.0	686.0	690.0	46.0	–	296.0	117.8	–	–	2 469.8
Integrated National Electrification Programme (Eskom)	32.7	83.5	0.0	19.2	3.9	–	1.9	2.1	–	143.4
Water Services Operating Subsidy (via WTA)	0.0	0.0	0.7	13.9	–	–	–	2.5	–	17.1
Integrated National Electrification Programme (Munic)	50.0	26.2	74.2	60.5	9.0	30.8	13.3	32.7	–	296.6
Regional Bulk Infrastructure	–	–	–	–	–	–	–	–	–	–
Neighbourhood Dev Partnership (Schedule 6)	105.9	38.2	63.7	7.0	13.0	33.0	–	5.0	–	265.7
Water Services Operating Subsidy	–	–	–	–	–	–	–	1.1	–	1.1
Backlogs in Water & Sanitation at Clinics & Schools	2.9	–	1.7	0.9	2.0	–	–	–	–	7.4
Municipal Systems Improvement Programme	–	–	–	–	–	–	0.4	0.4	0.4	1.2
Local Govt Financial Management	0.8	0.8	0.8	0.8	0.8	0.8	0.5	0.5	0.5	6.0
Neighbourhood Dev Partnership (TA)	20.1	14.8	10.8	4.0	11.5	7.0	–	2.0	1.9	72.1
Backlogs in electrification at Clinics & Schools	–	–	–	–	–	–	–	–	0.2	0.2
Local Govt Financial Management (DBSA)	–	–	–	–	–	–	–	–	–	–
TOTAL	4 943.3	3 258.1	3 499.6	2 239.0	2 077.8	1 484.8	788.4	502.1	255.1	19 048.3
% of total grants	26.0%	17.1%	18.4%	11.8%	10.9%	7.8%	4.1%	2.6%	1.3%	100.0%

Source: National Treasury Conditional Grant Database. Available at www.treasury.gov.za

The equitable share is the dominant national grant, at R24.9 billion in 2008/09 accounting for 56.3% of all national grants to local government, 43.3% of which was assigned to the cities. The next three main grants for that year (the municipal infrastructure grant, the public transport infrastructure systems grant and the 2010 stadiums development grant – all conditional capital grants), accounted for another R14.7 billion, or 33.3%, of national grants to local government, of which 50.6% was allocated to the nine cities. Finally, the remaining twelve national grants accounted for R4.6 billion or 10.4% of total national grants, of which 17.7% went to the cities. The net effect was that the cities received R19.0 billion (or 43.1%) of the total national programme of R44.2 billion in 2008/09.

PUBLIC TRANSPORT IN THE CITIES

After a long policy development process, the passing of the National Land Transport Act (No. 5 of 2009) appears to have overcome a lack of clarity regarding accountability among the different spheres of government. The Act introduced a clear emphasis on delegation to city level, which begins not only to bring key decisions together at a single point, but helps to link the public transport function to wider spatially related decisions over the built environment.⁹

Recognising that public transport systems would be an efficient way of overcoming the challenges of distance, costs and congestion, several South African cities started to face up to this challenge on a substantial scale, with dramatic financial consequences. Both Johannesburg and Cape Town have started to implement bus rapid transit (BRT) projects, a system of road-based public transport that can be inserted relatively easily into the existing road network, yet have many of the advantages of rail systems.

The recent activity in the field of city public transport is to be welcomed as a necessary and possibly strategic step in the direction of improving the effectiveness of South Africa's cities. It is therefore all the more important that sufficient and well-structured financial arrangements are made, as the overall fiscal impact of the new public transport responsibilities on city government will be substantial. These new expenditures could be highly destructive to city financial viability if sustainable funding mechanisms are not put in place.

Having located responsibility for public transport at city level, and noting that significant public funding is required, the question arises as to how city governments will access that funding. In principle two options exist: through grants from central government or through locally generated revenue sources.

Funding of public transport in the city

Apart from fare revenues, public transport is currently almost entirely grant funded. Table 6.4 sets out the amounts allocated to SACN member cities for the Public Transport Infrastructure and Systems Grant (PTISG) for the period from 2006/07 to 2012/13.¹⁰

Table 6.4 Budgeted allocation to SACN member cities from the PTISG (R million)

	2007	2008	2009	2010	2011	2012	2013
Johannesburg	184.0	329.0	661.2	652.8	1 070.5	1 200.0	800.0
Cape Town	120.0	230.0	424.8	332.5	850.0	1 600.0	900.0
eThekweni	11.8	125.0	624.9	376.9	330.0	20.0	20.0
Tshwane	11.0	105.0	510.2	565.2	864.2	500.0	800.0
Ekurhuleni	27.7	13.0	7.6	27.7	20.0	20.0	20.0
Nelson Mandela Bay	69.0	132.0	305.5	147.1	408.3	600.0	800.0
Mangaung	29.5	25.0	242.6	82.2	15.0	15.0	15.0
Buffalo City	–	–	8.6	31.2	71.5	400.0	700.0
Msunduzi	–	–	2.1	7.7	15.0	15.0	15.0
TOTAL 9 CITIES	453.0	959.0	2 787.5	2 223.3	3 644.5	4 370.0	4 070.0

Source: Division of Revenue Bill 2006, 2007, 2008, 2009, 2010

The purpose of the PTISG is 'to provide for accelerated planning, establishment, construction and improvement of new and existing public transport and non-motorised transport infrastructure and systems'. It is essentially a capital grant and may only be used for the ongoing operating costs of public transport to a limited degree.

For public sector providers such as municipalities, receiving grants has its advantages. There is no requirement to approach the local electorate for resources, which is a favourable position to be in – as long as grants are predictable, sufficient and without difficult conditions.

However, there are important drawbacks to grant funding. For example, the grant framework for the PTISG indicates that it will continue until at least 2020, but this cannot be guaranteed. Indeed, National Treasury has had to put in place special arrangements (in the form of firm allocations in years 2 and 3 for specifically approved transport capital projects) to overcome the fact that the two outer years of the Medium-Term Expenditure Framework (MTEF) are not normally binding on national government. Yet public transport projects need financial and contractual commitments for far longer than this, and are therefore vulnerable to and inhibited by relying on such grant systems. If a city is to implement a large programme, for example over a period of a decade, and takes on 15-year debt in respect of part of that cost, dependency on grants leaves the city at risk of only partially completing the programme if national government later decides to follow a different approach.

The share of the grant amongst cities is also somewhat arbitrary. The current PTISG funding requires national government, through the Department of Transport, to assess the demands from the various cities and to make a judgement as to the share that the different cities should receive.

Where revenues are derived from local taxes, the amount of finance raised is then defined by the local tax base, and the rate is set locally, rather than through a different sphere of government's administrative decision. Given the appropriate local tax instruments, South Africa's cities should have sufficient economic base relative to need, to be able to fund public transport through local revenues rather through grants.¹¹

Costs of city public transport systems

Three factors in particular make the financing of public transport particularly challenging in South Africa:

1. The long travel distances arising from the peculiar nature of urban form in South Africa;
2. The severe peaking of service demand with low base ridership outside of peak hours; and
3. The relatively low income levels of public transport users.

In most countries, public transport is subsidised. The characteristics above make it hard to conceive of adequate public transport services being provided in South African cities without some form of subsidy – both capital and operating – from a source other than fare revenue.

The PTISG funding is aimed at capital needs, and the grant conditions in the PTISG implicitly recognise that operating subsidies are required for the new BRT systems. A condition of the capital grant is that systems are designed so that fare revenues cover the 'direct operating costs' of vehicles, excluding the capital cost of the vehicle. Both the Johannesburg and Cape Town systems as modelled do cover these costs. However, a number of other important costs still have to be covered, including costs related to the organisation running the system, fare collection, the control centre, station management and security, as well as the costs of maintaining the fixed infrastructure.

Revenue sources for city public transport

Given that public policy seeks to shift users from private to public transport, public transport should arguably be financed through taxes on private motoring. In this regard there are four options to consider:

- (a) The fuel levy is a widely accepted tax already in place. It generates revenue on the basis of vehicle use, with a higher incidence on higher fuel consumption vehicles. Indeed, it could be viewed as a form of user charge for road use, and the notion that private vehicle users should help fund public transport is likely to be reasonably widely accepted.

Nevertheless, a local fuel levy has drawbacks. For example, the scope for arbitrage at municipal boundaries means that setting the tax rate locally would not be feasible. Furthermore, in the long term, as a city succeeds in reducing private motor car use, the levy yield would decline. However, despite these drawbacks, a local fuel levy remains an appropriate funding mechanism for transport in general, including road construction and maintenance, and public transport in particular. Indeed, a share of the fuel levy is currently distributed amongst metropolitan governments based on fuel consumption levels in each metropolitan area.

This existing fuel levy share was introduced to replace the old Regional Services Council (RSC) levies. Using the fuel levy as a dedicated source for transport funding would be a highly feasible option. However, an alternative source will then be required, or the levy will have to increase, in order to fill the previous need, i.e. the obligations that were funded from RSC levies, as well as finance the new transport obligations

- (b) Another potential source of revenue – certainly in the Gauteng area – would be from a share of the new tolls levied on the freeways being developed in terms of the Gauteng Freeway Improvement Project.

(c) A third source of revenue, which some cities are considering, is a parking levy. This would likely be a levy on all private and public non-residential parking. It would be levied on the non-residential property owner, who would ideally pass it on to users of parking. A parking levy acts as a basic congestion charge, limiting the use of vehicles to some areas. However, it is a form of business property tax, which in a number of South African cities is already at relatively high levels, and the potential revenue generated may not warrant the complexities of implementation.

(d) Vehicle licence fees offer a fourth source of revenue. Licence fees in South Africa are relatively low, yet if pushed higher may become subject to much greater levels of evasion. Constitutionally licence fees are a provincial revenue source and thus could not be devolved to city level.

Given the current levels of motor car ownership in South Africa and trends over the last decade, the scope for increased car numbers is massive. South Africa is thus faced with the choice either to continue to accommodate the increased motor vehicle numbers through ongoing building of highways, or to find some way of constraining motor vehicle use and increasing use of public transport. Conceptually a strong argument is that existing road use should be rationed through pricing by means of taxation, and the revenues generated used to enhance public transport. As car ownership increases, congestion is thus kept under control through such mechanisms rather than by continual new road expansion. Such an approach would need to be complemented by a wide range of other initiatives aimed at enhancing city form and improving public transport alternatives.

The very real threat remains that the formation of South Africa's cities around the private motor car is already so widely entrenched, and continues to be so vigorously advanced, that the public transport alternative will always struggle to compete.

Among the most important financial challenges facing South African cities is to ensure that the systems of public transport, which they must implement for good long-term reasons, are adequately and appropriately financed. This cause is best advanced by implementing a dedicated revenue source to finance city public transport, which would also assist to protect overall city budgets from the potentially destabilising effect of the new public transport responsibilities.

The equitable share has transformed national government revenue. As Table 6.5 illustrates, the total municipal equitable share has grown steadily, including a sharp jump in 2007. The total figure reached R24.9 billion in 2009, almost four times higher in nominal terms (and over 2.8 times higher in real terms) than the equivalent figure in 2004.

Table 6.5 City and national municipal equitable shares (current R million)

	2004	2005	2006	2007	2008	2009
Johannesburg	239	391	541	2 253	2 579	3 039
Cape Town	160	206	276	1 281	1 451	1 710
eThekweni	374	392	536	1 133	1 339	1 608
Tshwane	159	201	270	1 003	1 101	1 303
Ekurhuleni	192	306	472	1 191	1 397	1 673
Nelson Mandela	149	161	206	487	573	682
Mangaung	200	204	175	197	237	292
Buffalo City	187	193	192	213	252	310
Msunduzi	75	75	105	120	143	176
Total: 9 cities	1 735	2 129	2 771	7 878	9 073	10 793
Share of national municipal equitable share (ES)						
National municipal ES	6 350	7 678	9 643	18 058	20 676	24 889
Share of the nine cities	27%	28%	29%	44%	44%	43%
RSC replacement included	–	–	–	4 700	5 371	6 044
True share of the nine cities	27%	28%	29%	24%	24%	25%

Source: National Treasury Conditional Grant Database, 2010. Available at www.treasury.gov.za

The Financial State of the Cities *continued*

The 2007 step change in equitable share payments to the cities was clearly associated in part with the abolition of the RSC levies¹² and their replacement, initially by an RSC Replacement Grant (plus the VAT zero-rating of municipal property taxes as an offset)¹³, and then by a share of the fuel levy.

The RSC replacement grant, which applied for the three years 2006/7 to 2008/9, was based on previous RSC receipts and was included in the municipal equitable share for each city and district that had previously raised RSC levies. The share of the fuel levy is currently being phased in, based on a formula that included, in 2009/10, a one-time adjustment in favour of cities whose share of total fuel sales was higher than their share of total RSC levies, while still granting other metros a 4% nominal increase. In 2010/11 and 2012/13 the total allocation is calculated by decreasing weights assigned to the city of the former RSC levies and increasing weight to the city share of total fuel levies raised. By 2012/13 the allocation will be based entirely upon fuel sales in each jurisdiction.¹⁴ Figure 6.5 presents diagrammatically in real terms (i.e. constant 2008 R million) the details of the yield per city from the RSC levies, from the grant which temporarily replaced the RSC levies, and from the share of the fuel levy which is now being phased in.

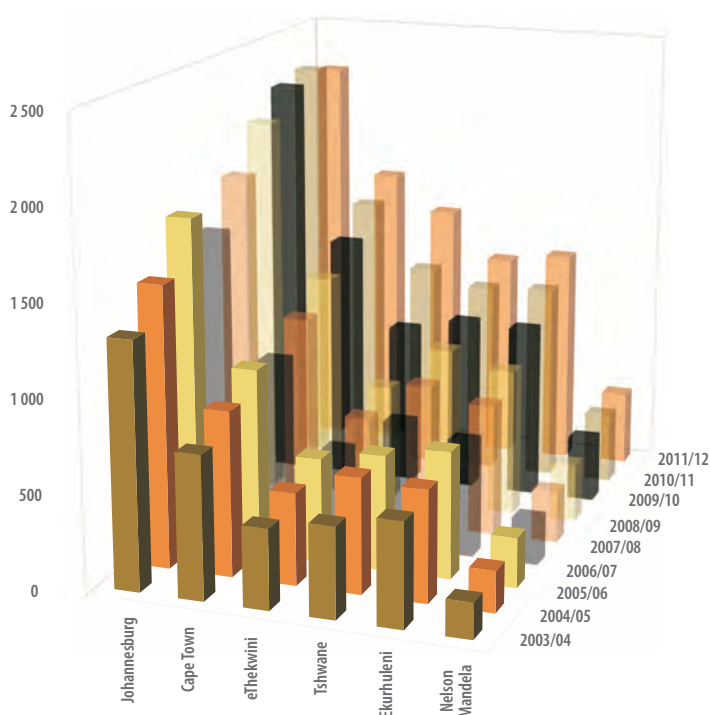


Figure 6.5 Yields for RSC levies and its replacements by phase and city (constant 2008 R million)

Source: National Treasury, 2010¹⁵

It is apparent that Ekurhuleni and especially eThekweni have benefited, relatively speaking, from these changes, while Johannesburg has lost.

However, the 'true' equitable share of the cities, i.e. the equitable share as published, minus the RSC replacement amounts, has also continued to rise steadily in real terms since 2004.¹⁶ The period 2004–2009 saw the 'true' equitable share of the cities increase by 99% and the equitable share of non-cities by 122%. The 'true' share of the cities in the total municipal equitable share, which had been rising towards 29% until 2006, fell to 24% and 25% in the succeeding three years.

The long-term increase in conditional grants to the cities comes mainly from capital grants for transport, general, and 2010 FIFA World Cup™ infrastructure. In real terms, capital grants to the cities were 243% higher in 2009 than in 2004, as Figure 6.6 illustrates. Notwithstanding the declining share of cities in the overall 'true' municipal equitable share, city revenues have clearly become considerably more grant-dominated in recent years.

“[Own] revenues are important because they are revenues for which the city administration is directly responsible.”

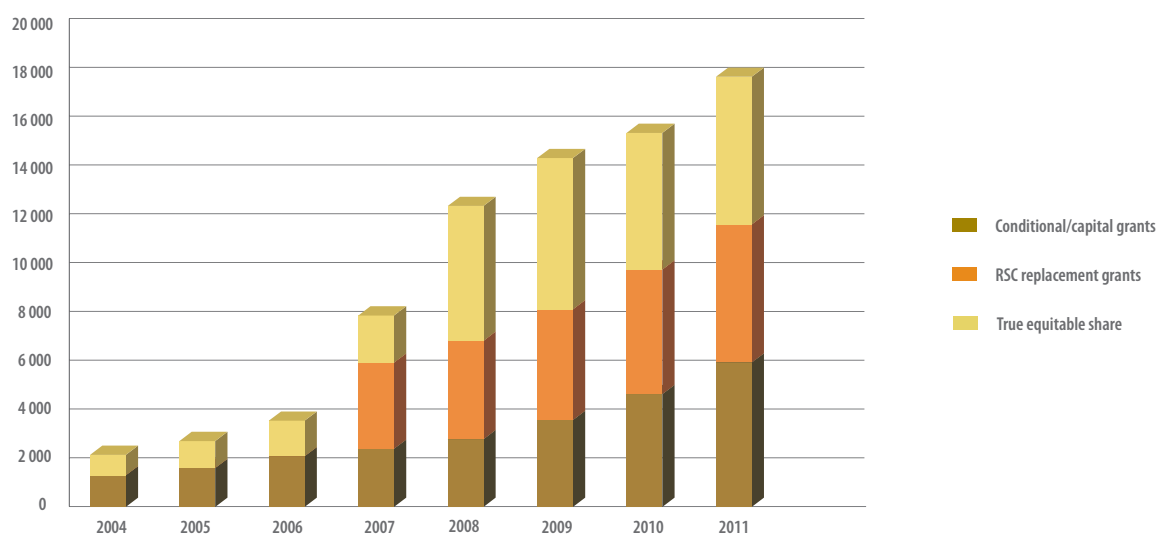


Figure 6.6 Composition of aggregate government grants to cities (Constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

Own revenues

Own revenues are revenues from property taxes, charges for municipal services and other materially less significant items such as traffic fines, developer contributions and numerous minor or sundry fees and charges. These revenues are important because they are revenues for which the city administration is directly responsible.

Figure 6.7 shows in real terms the total property taxes billed per year for each of the cities.

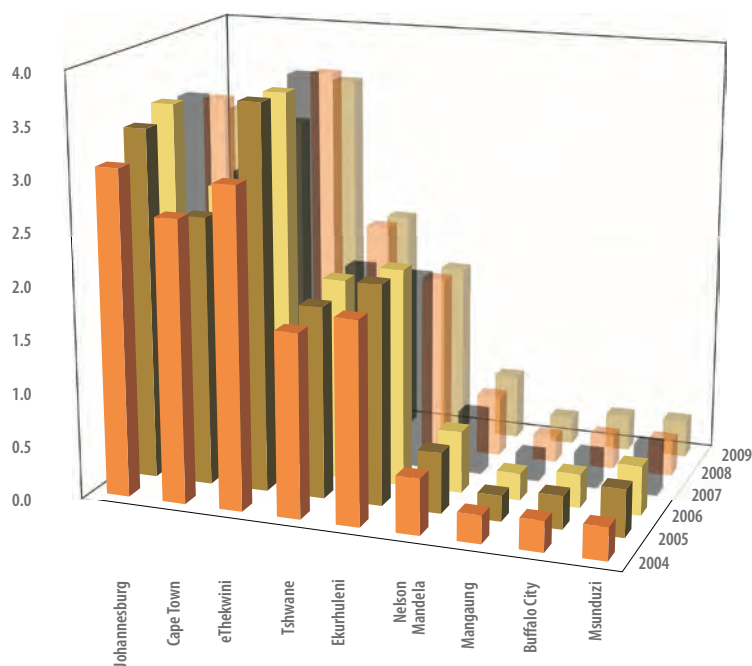


Figure 6.7 Property tax yield by city (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

Two points are immediately evident: eThekweni collects the most property tax by a significant margin, despite having only the third-largest local economy; and property taxes billed essentially stalled in 2009, declining in real terms, especially in the largest cities. Aggregate city property taxes billed were a relatively steady average of R15.5 billion in 2008 values for the three years 2006 to 2008, but then declined 3.4% in real terms to R15.0 billion in 2009.

In contrast, revenues from service charges continued to grow strongly in 2009, mainly as a result of the 27% increase in electricity revenues. Figure 6.8 highlights both the dominance of electricity revenues in the overall service charges revenue of the cities, and the recent sharp increase in real electricity revenues.

The Financial State of the Cities *continued*

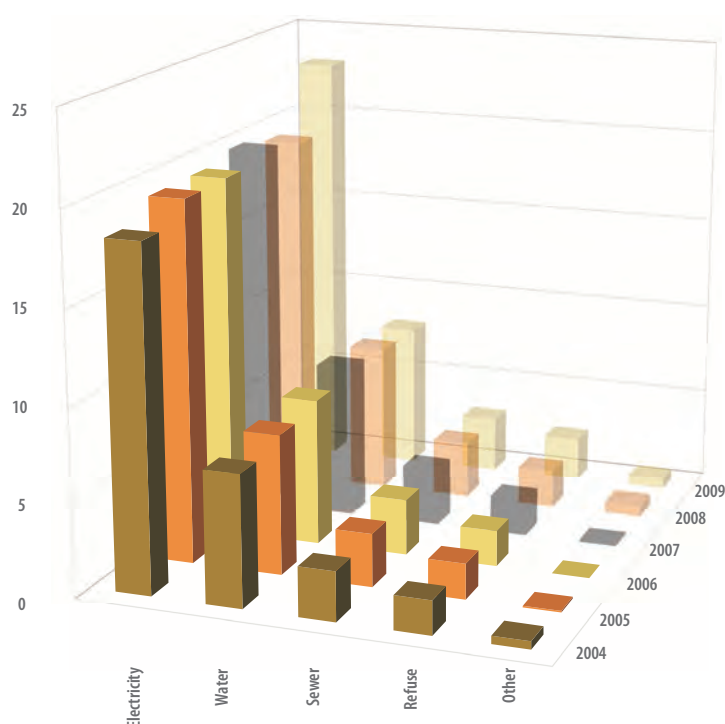


Figure 6.8 Aggregate gross city revenues by service, 2004–2009 (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

For much of the period under discussion, electricity revenues could be argued to be a reflection of local economic growth, but recently they mainly reflect tariff increases. City gross revenues from electricity had been growing slowly for several years, then declining slightly in real terms in 2008, during which fairly significant power outages had occurred, before increasing by 18.3% in 2009. Gross electricity revenues by city are shown in Figure 6.9.¹⁷

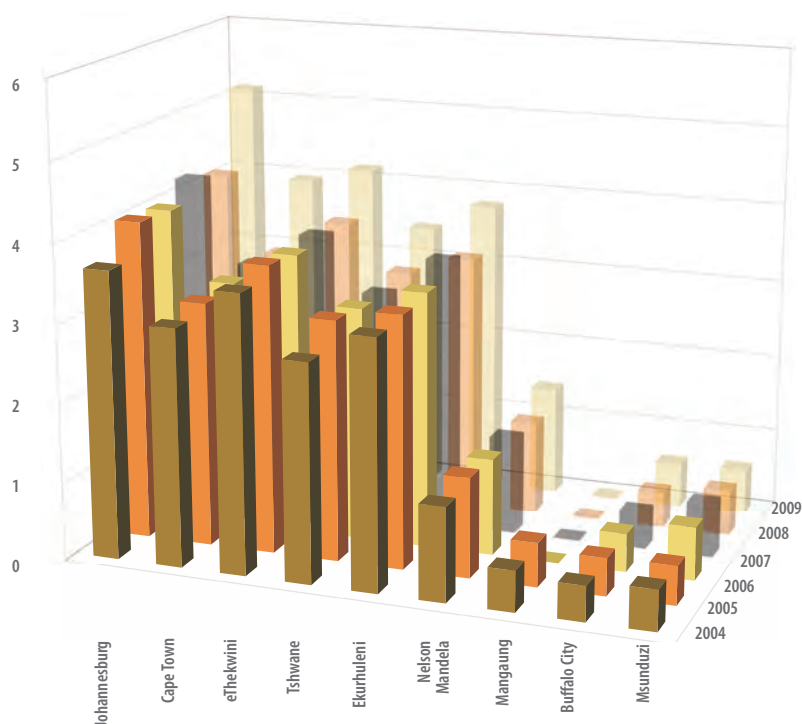


Figure 6.9 Electricity revenues by city, 2004–2009 (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

Finally, although the interest income earned by the cities is a (relatively) minor income source for cities, it is worthy of attention. Interest is earned from two major sources: investments of various kinds and amounts owing to the municipality as a result of late or non-payment of invoices (i.e. debtors).

Interest earned on investments, which had increased strongly over the five previous years, stopped growing abruptly in 2009, perhaps the first clear sign of the change in the collective financial standing of the cities. However, Cape Town managed to maintain a long-term increasing trend, and eThekweni returned to higher earnings from this source after a period of low revenues (see Figure 6.10).

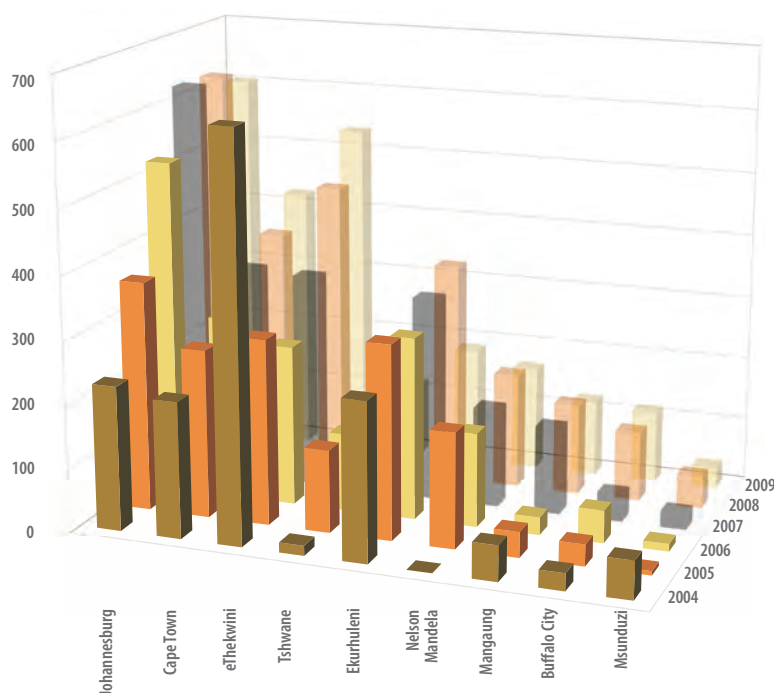


Figure 6.10 Interest earned on investments (constant 2008 R million)

Source: Calculated by the authors from city annual financial statements

Interest earned on outstanding debtors, however, has risen steadily from 2006 onwards, reflecting ongoing challenges that cities face in collecting debtors' balances outstanding.¹⁸ Figure 6.11 is dominated by the high figures for Ekurhuleni and Tshwane, especially from 2007.

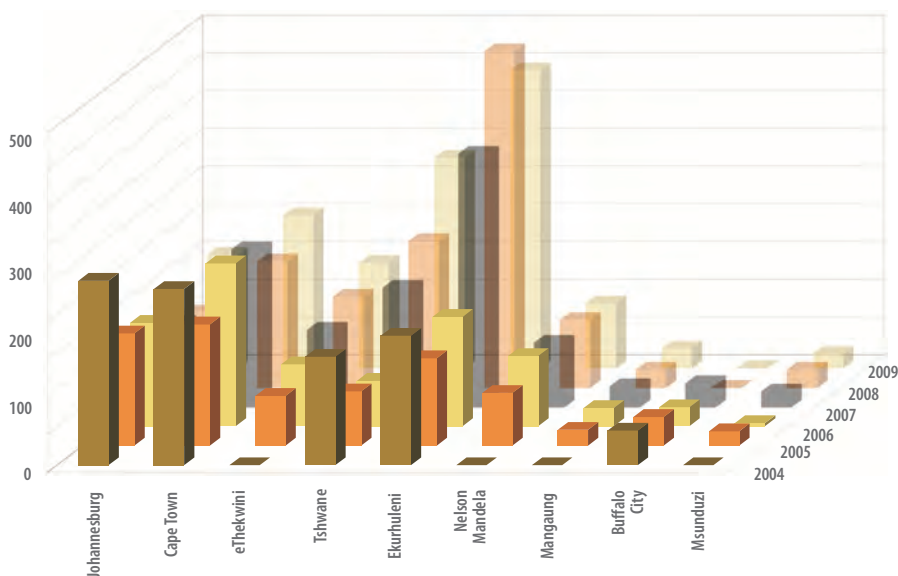


Figure 6.11 Interest earned on outstanding debtors by city (constant 2008 R million)

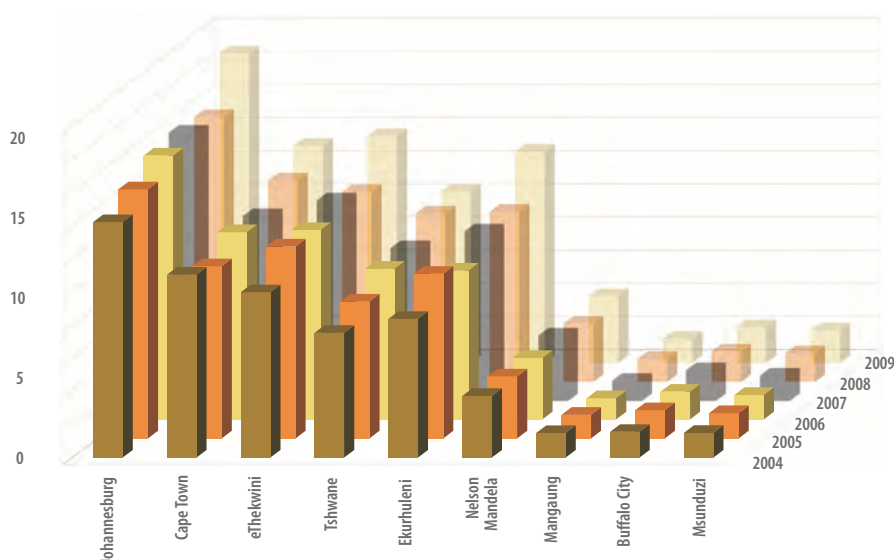
Source: Calculated by the authors from city annual financial statements

Operating expenditures

Operating expenditures are ongoing or recurrent expenditures that a city government faces every year, as opposed to the capital or investment expenditures that are generally large, once-off expenditures not repeated every year. The major operating costs are remuneration costs, costs of bulk purchases of water and electricity, depreciation, repairs and maintenance, interest costs, provisions for bad debt, and 'other'. This broad category covers a host of detailed cost items relating to offices, such as tools and equipment, vehicles, telecommunications, specific contracted services.

The Financial State of the Cities *continued*

The real operating expenditures of the cities increased by 31%, from R59.5 billion in 2004 to R78.1 billion in 2009, in constant 2008 values. Ekurhuleni showed the most dramatic increase (around 51% over the five years), but the rapid general increase in operating costs affected all the cities, with the notable exceptions of Nelson Mandela Bay (8.1%) and Cape Town (18.3%).¹⁹ Figure 6.12 portrays total operating expenditure per city per year.



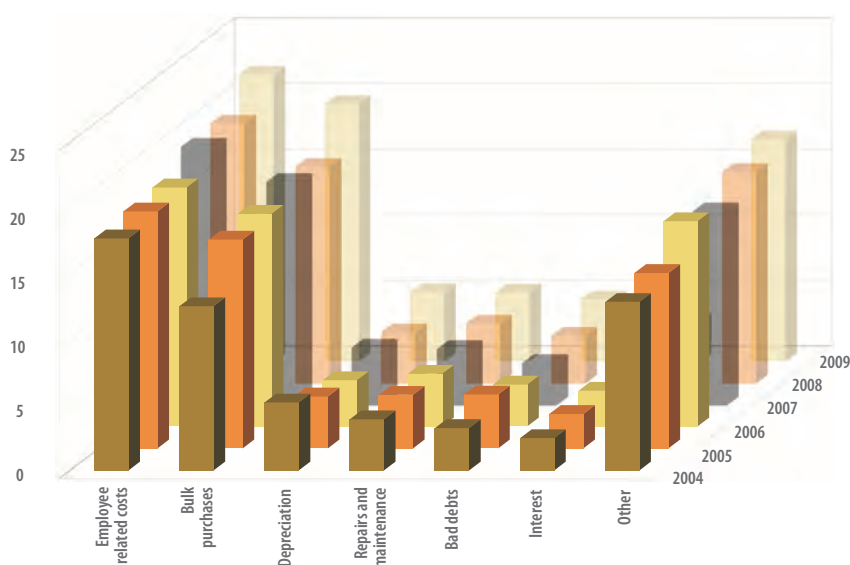
Explanations for the rapid real growth are best sought in the changes in the major operating expenditure items that affected each city. In real terms, in 2009 cities were paying 56% more for bulk purchases of electricity and water and 23% more for remuneration costs than in 2004.

Furthermore, bad debt provisions²⁰ and repairs and maintenance were also much higher in 2009 compared to five years previously, at 45% and 34% respectively. Depreciation was an especially important recent cost item at R5.3 billion for 2009 alone.

Figure 6.12 Operating expenditure by city (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

Employee-related costs are governed by city staff complements (i.e. the number of staff) and their remunerations scales as set by the SALGBC.²¹ In real terms, city staff costs were relatively stable from 2004 to 2006, but stepped up in 2007. The stability lasted only two years – the 2009 figure shows a sharp increase in real terms even prior to the implementation of the current wage agreement (i.e. 2010–2012), which will again increase real staff costs. The prospects of bringing this critical cost item under control must be regarded as limited.



The prospects appear just as gloomy for the second-largest major city expenditure item: the costs of bulk services supplied by Eskom and Rand Water. After several years of relatively contained increases, bulk purchases jumped by a startling 26% in 2009, mainly as a result of electricity price increases. Although these increases are recovered from the consumer, the rising prices can have significant cash-flow implications for the cities due to the time between the bulk purchases and eventual recovery from the end consumer, especially as higher prices tend to depress collection rates. This trend is expected to continue for some years.

Figure 6.13 Aggregate city expenditure by category (constant 2008 R billion)

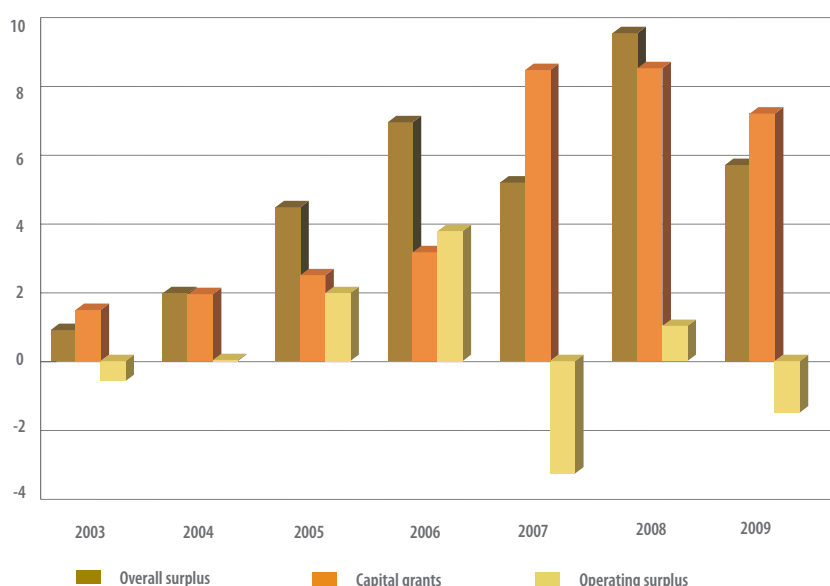
Source: Calculated by the authors from city annual financial statements

Bad debts show an erratic pattern over the period, probably reflecting uneven implementation of provisions for bad debt or the effect of changes to credit control policies. Depreciation also shows an erratic pattern, which could be attributable to the refinement of fixed asset registers emanating from the new accounting standards.²² Repairs and maintenance expenses are reflected as having increased significantly in 2008 and 2009.²³

The shares of the different expenditure components have not been substantially altered by these changes. Bulk purchases appear to be on a rising trend, as are employee costs, but neither of these shares are unprecedented.

Operating surpluses

One of the key indicators of the state of city finances is the operating surplus²⁴ or deficit generated each year. City governments have in recent years repeatedly reported overall surpluses, but these are not operating surpluses. Capital grants are included in income for the financial year in which they are spent, but the capital expenditure itself is expensed over the life of the capital asset. This implies that a city may report an overall surplus and yet still have an operating deficit, in which case the operating deficit has temporarily been covered by capital grant monies. Figure 6.14 shows the data for all nine cities collectively.



The cities have reported overall surpluses (blue) every year since 2003, peaking in 2008 at over R9 billion. However, the revenue figures used when calculating the overall surplus include capital grants (red), which are not operating revenues, and should be excluded to obtain the operating surplus (green).

Cities generated steadily increasing operating surpluses until 2006. A sharp reversal in 2007 was followed by a return to surplus in 2008, followed by another operating deficit in 2009. The scale of capital grant funding to the cities in the 2007–2009 period appears to have been sufficient to mask growing fragility in city operating results.

Figure 6.14 Overall balances, capital grants and cash operating balances (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

However, even this may not accurately reflect the actual cash operating position, which depends on whether the bad debt provision each year is sufficient to match uncollected billings. This raises the question of gross and net debtors.

Gross and net debtors

Gross debtors are the total amount of outstanding billed revenue, which often includes interest charged on overdue amounts. Figure 6.15 sets out the gross debtors' balances relative to billed revenue.

The Financial State of the Cities *continued*

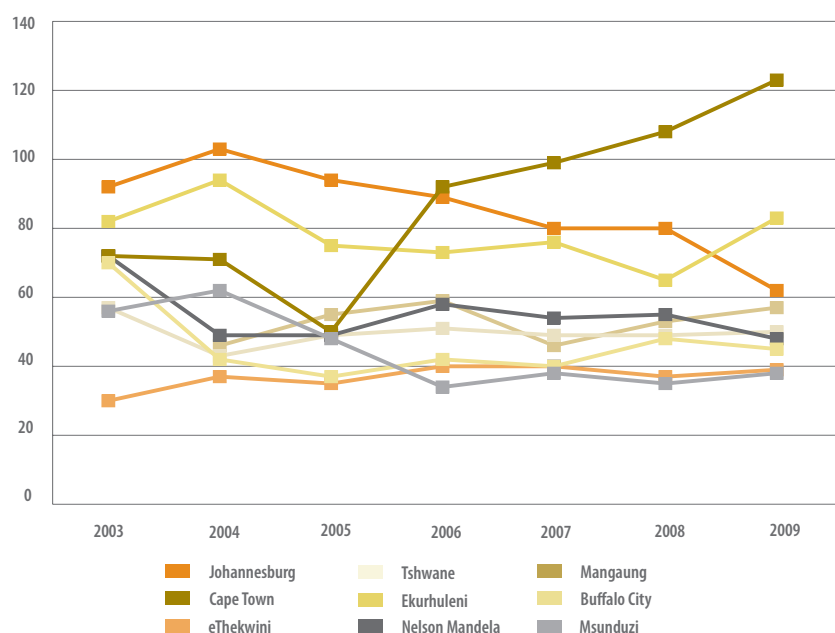


Figure 6.15 Gross debtors' balances outstanding relative to billed revenue (%)

Source: Calculated by the authors from city annual financial statements

Over the period 2004–2007, the trend in most cities has been declining (i.e. improving) or stable gross debtors, although a distinct worsening is evident in several cities in 2009 and even 2008. Mangaung is a dramatic exception, with a strongly negative trend for the four years to 2009.

However, a more relevant and important indicator is outstanding net debtors relative to billed revenue, as set out in Figure 6.16.

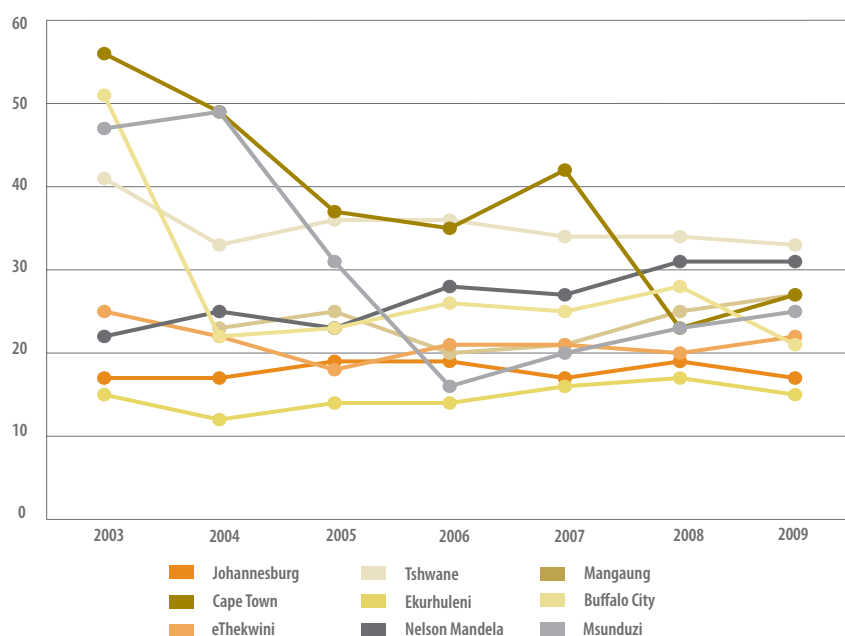
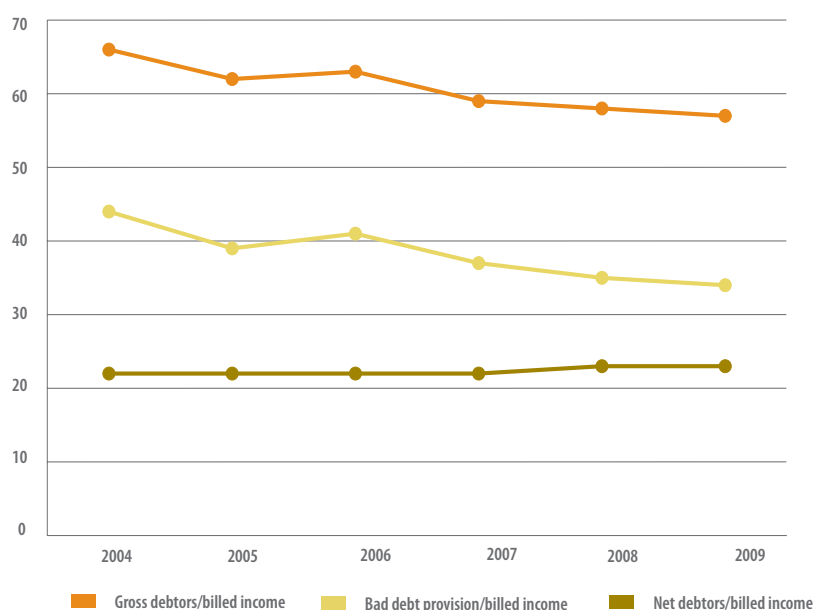


Figure 6.16 Net debtors' balances outstanding relative to billed revenue (%)

Source: Calculated by the authors from city annual financial statements

Net debtors are the amount that the cities expect to collect and are calculated as the gross debtors' outstanding balances, less the provision made for bad debts. A city which holds its net debtors to around 17% of billed revenue²⁵ is generally regarded as making adequate provision for bad debt. The cities have generally shown improvement over the medium term, but only a few cities are in the 17% range, and most may not be adequately providing for non-payment, which is of concern.²⁶ Furthermore, the movement of this indicator in 2009 was generally adverse.



However, despite these 2009 warning lights, the long-term aggregate in city debtors relative to billed revenues has improved, as Figure 16.7 shows.

Gross debtors declined from 66% to 57% of billed revenues. The aggregate bad debt provision declined from 44% to 34% of billed revenues, while the aggregate bad debt provision stayed remarkably stable at 22%–23% of billed revenues throughout the period (worsening slightly in 2008 and 2009).

Figure 6.17 Aggregate city debtors: gross, net, and bad debt provisions as % of billed income

Source: Calculated by the authors from city annual financial statements

Capital expenditure and its financing

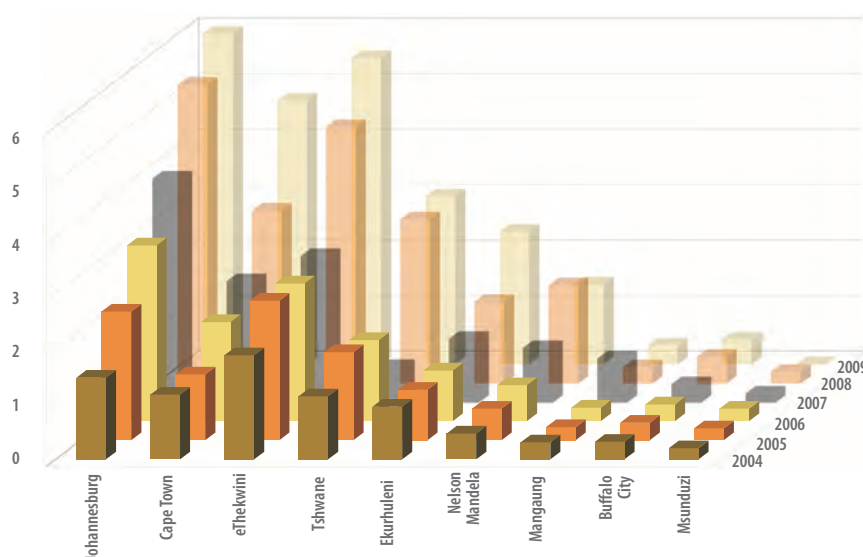
City capital expenditure

High capital spending has been one of the defining features of South African city finance in recent years. Capital spending of the nine cities rose from R6,1 billion in 2004 to R29,3 billion in 2009. City capital spending remained at around 12% of total city revenues and total city expenditures for the four years 2004–2007. The jumps came in 2008 and 2009, when aggregate capital expenditure (capex) rose to 22% and 26% of total expenditure (and 25% and 32% of total revenue).

Much of this capital spending has clearly been associated directly or indirectly with preparations for the 2010 FIFA World Cup™.²⁷ Figure 6.18 illustrates that capital spending rose fast over the medium term, especially in the metros in 2008 and 2009.



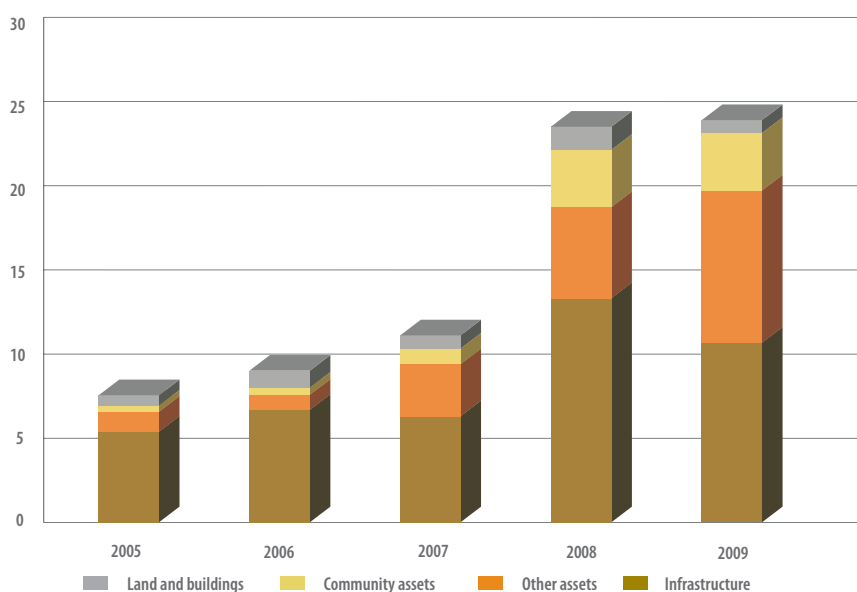
The Financial State of the Cities *continued*



Cities have not been consistent in the way that assets are classified. Figure 6.19, which provides a breakdown of capital spending among the various classes of assets, confirms that the majority of capital spending in the period 2006–2009 was on infrastructure.²⁸ 'Other assets' is also a significant category and includes vehicles, equipment, IT systems and office furniture and fittings.

Figure 6.18 Capital expenditure of SA cities 2003–2009 (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements



As the data only covers up to June 2009, it is too early to assess the financial legacy of the 2010 FIFA World Cup™ expenditure on South Africa's cities, as preparations for the event were still underway at that stage. City governments spent considerable sums on the stadiums and surrounding and associated infrastructure, as well as public transport infrastructure and services. There will be ongoing expenditure to cover costs of operating and maintaining new assets. National government made grant funding available for the stadiums, and general infrastructure grants also increased, but city governments also allocated their own resources to the effort and experienced financial pressure as a result.

Figure 6.19 Classification of city capital expenditure (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

The very high levels of capital expenditure reflected in these figures will have important implications for the financial position of the cities in future, as higher revenues will be needed to cover the higher ongoing operating costs and depreciation charges.

Within the capital expenditure category 'Infrastructure', it is also now possible to provide some detail regarding the percentage spent on each major class of infrastructure (see Figure 6.20).

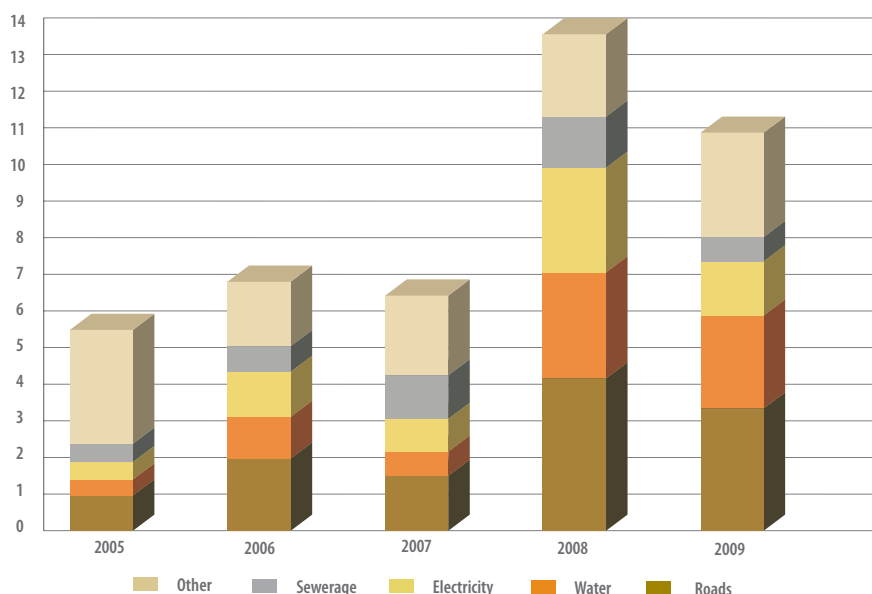


Figure 6.20 Classification of city infrastructure expenditure (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

The majority of spending is on roads (28% over the last five years), water (18%) and electricity (16%), and sewerage systems (10%). The investments in water and electricity should have a positive impact on revenue, but will be limited if the capital expenditure eliminates backlogs in poor communities. Investments in roads do not however generate city revenue.

Unfortunately, it is not possible to determine how much of the capital expenditure is allocated to investment in economic growth and sustaining the economic sector, how much is spent on rehabilitation and renewal²⁹ of existing infrastructural investments, and how much is spent on backlog elimination. If this information were available, a more informed assessment of the contribution of this capital spending to city financial sustainability would be possible.

Financing of city capital expenditure

The three major sources of capital finance are: government grants, borrowing, and surplus cash resources, including developer capital contributions.³⁰

Capital grants to the cities – mainly the municipal infrastructure grant, the public transport infrastructure systems grant, and the 2010 FIFA World Cup™ stadiums development grant – increased substantially in the run-up to 2010, as Figure 6.21 shows.

Despite this substantial increase in capital grants, the cities generally still found it necessary to increase their borrowings to finance their capital expenditure programmes. As Figure 6.22 illustrates, while almost all cities increased their total liabilities between 2004 and 2009 (the exceptions were Nelson Mandela and Mangaung), of the nine cities, Johannesburg is by far the largest borrower.

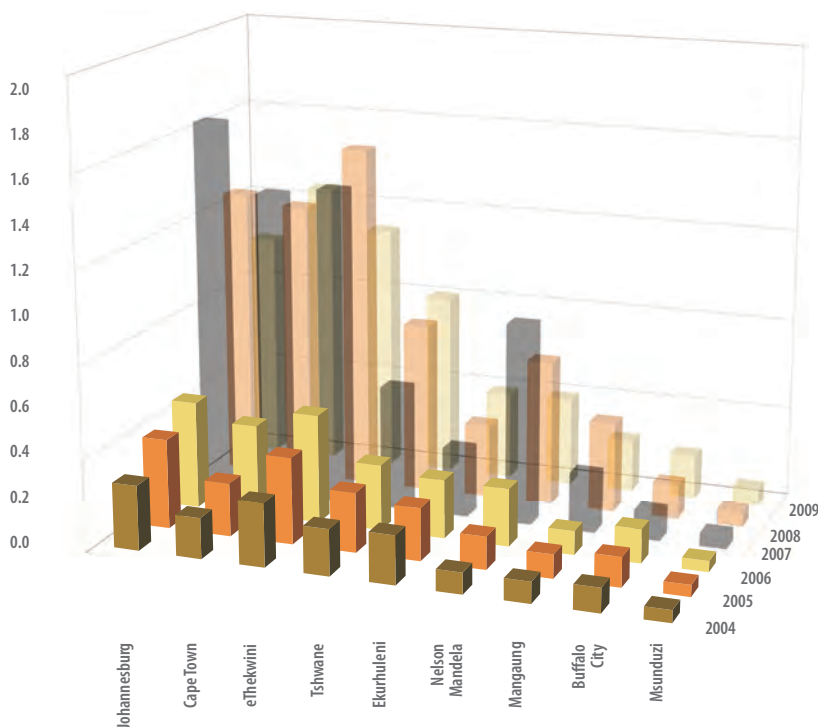


Figure 6.21 Capital grants to the cities (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

The Financial State of the Cities *continued*

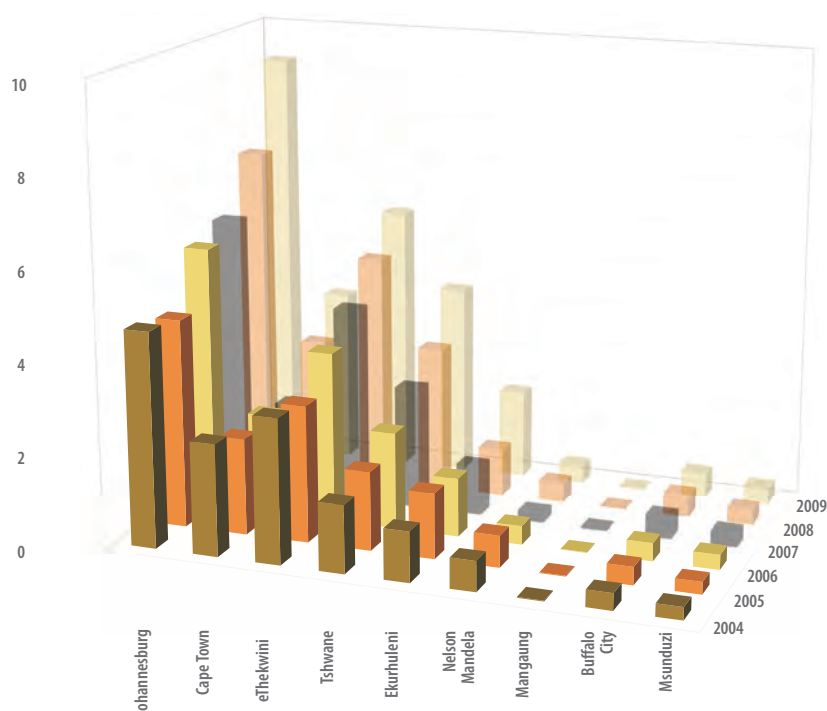


Figure 6.22 Long-term liabilities by city (R billion)

Source: Calculated by the authors from city annual financial statements

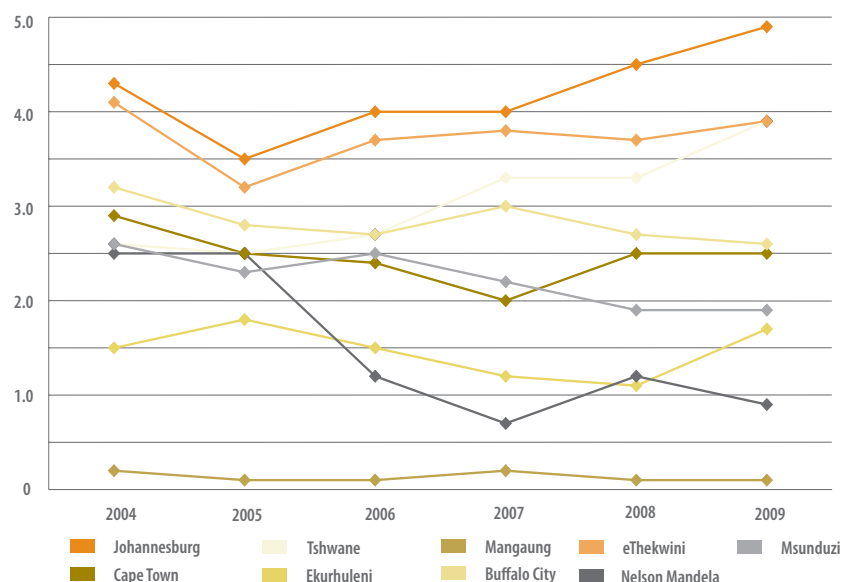


Figure 6.23 Municipal borrowings relative to annual operating revenue (%)³¹

Source: Calculated by the authors from city annual financial statements

When looking at the sustainability of this borrowing, one indicator is to compare the stock of debt (total long-term liabilities) with annual revenue. As a rough guideline, most municipalities will find it hard to service debt in excess of half of their annual revenue and, for comfort, the ratio should be lower. Figure 6.23 shows a very varied picture for the cities.

At one extreme is Mangaung, with an extremely low level of borrowings: 1% of annual revenue reflects a long-term practice of declining to take on long-term debt. At the other extreme is Johannesburg, which appears to be approaching the limits of sustainable borrowing. eThekweni and Tshwane also have reasonably high levels of debt relative to revenue, while the rest of the cities have, on the face of it, additional borrowing capacity.

A continued capacity to borrow may well be essential for cities whose capital programmes and levels of debt have increased in recent years as a result of 2010. They nevertheless still face substantial capital spending requirements – for growth and development, as well as maintenance of existing infrastructure and elimination of backlogs. Provided sound balances are struck among these budget city imperatives, capital investment programmes should have favourable long-term financial benefits for the cities.

Net cash and investments

Some of the most important indicators of relative financial strength are those relating to cash flow.

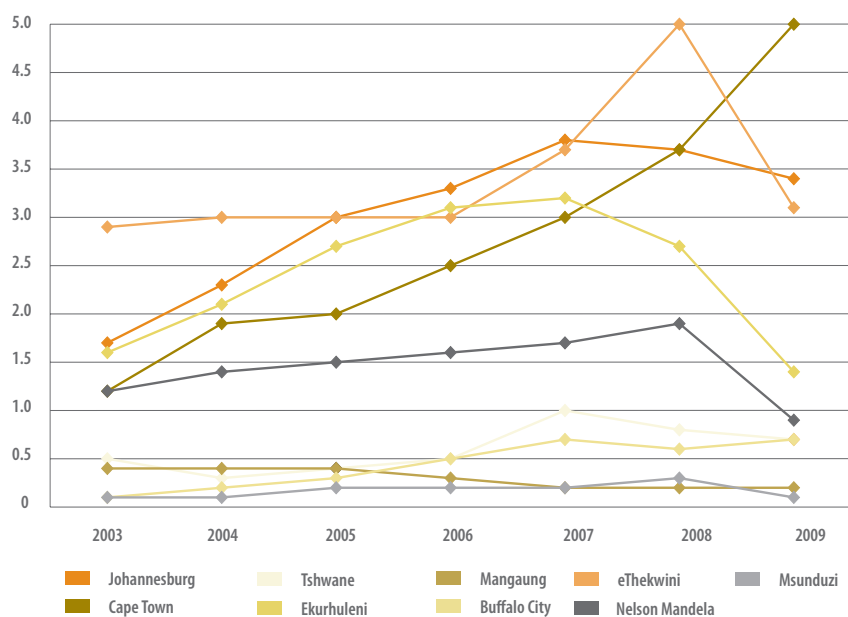
Table 6.6 shows that aggregate net cash and investments holdings (cash and short-term investments minus short-term liabilities and overdrafts) held by the cities fell by over a quarter in nominal terms in 2009, reversing a long period of increases.

Table 6.6 Net cash and investments and working capital: aggregates 2004–2009

	2004	2005	2006	2007	2008	2009
Aggregate city cash expenditures	45.734	52.344	58.067	65.222	81.050	98.052
Net cash and investments	12.370	14.112	15.301	17.516	20.062	14.780
Months of cash expenditure held	3.2	3.2	3.2	3.2	3.0	1.8

Source: Calculated by the authors from city annual financial statements

The nine cities maintained net cash and investments worth a remarkably steady 3.2 months of capital and operating cash expenditure at the end of each financial year between 2004 and 2007. They held 3.0 months worth in 2008, but could only manage 1.8 months at the end of 2009. The deterioration in cash holdings is reflected for each city in constant rand values in Figure 6.24.



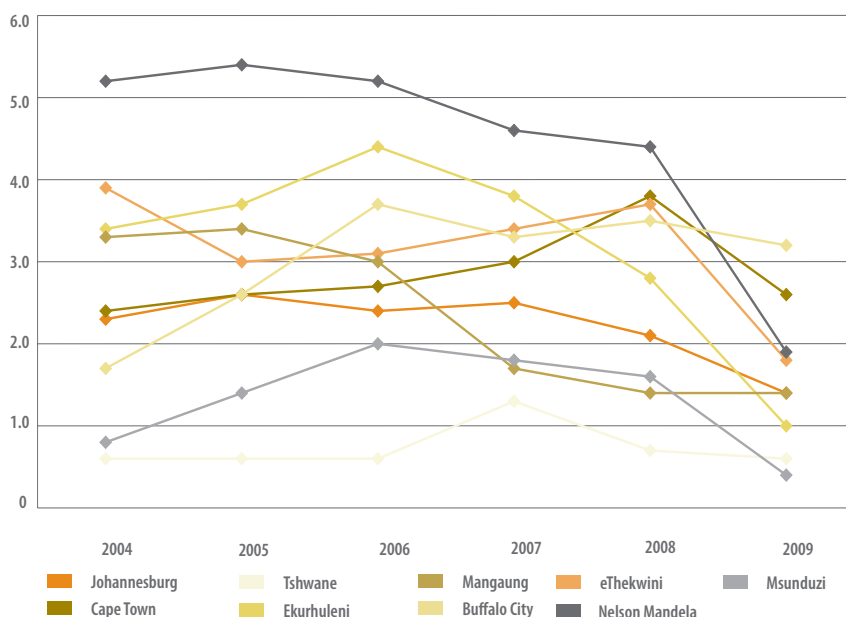
However, if these absolute numbers are compared to total annual cash spending (because net cash and investments supports ongoing cash expenditures, whether capital or operating), the relative weakening is revealed to have begun as early as 2007 in some cases. From Figure 6.25, which shows the cash coverage ratio for each city individually, a general deterioration in this indicator clearly set in from 2008.

Figure 6.24 Net cash and investments by city (constant 2008 R billion)

Source: Calculated by the authors from city annual financial statements

A continued capacity to borrow may well be essential for cities whose capital programmes and levels of debt have increased in recent years as a result of 2010.

The Financial State of the Cities *continued*



South African cities, as a group, were clearly in a considerably more precarious financial position at the end of 2009 than at the end of 2006.

After several years of rapidly rising real revenues, driven primarily by government grants, city governments are now facing significant cost pressures, particularly in respect of bulk supplies and staff remuneration. In some cases, operating expenditures appear to have been funded from capital grants. The substantial capital expenditure programmes of the last several years will have cost implications for the future.

Figure 6.25 Cash coverage: months of cash expenditure covered by net cash and investments

Source: Calculated by the authors from city annual financial statements

Some cities are approaching the limits of their borrowing capacity. While debtors' management to the end of 2009 did not show any significant deterioration, the cash position of the cities in particular has deteriorated and in some cases is cause for serious concern. In due course, this may tend to constrain the levels of capital and operating expenditure seen in recent years.

REVENUE EFFORT AND POTENTIAL

Having looked at data from annual financial statements of the cities to provide an overview of yield from the different own revenue sources over the last several years, the focus moves to city revenue operations, drawing data directly from the city revenue system to perform a 'revenue performance audit' at three cities.

All public services should be provided effectively, efficiently and economically. Service tariffs and tax rates should be set at levels which, for the city as a whole, cover the full cost of the services provided, including maintenance and provision for infrastructure growth. A city government that shows maximum revenue effort should then be able to demonstrate that there is:

- completeness in billing and collection – all properties liable to be billed for services and taxes should in fact be completely and accurately billed and collected.
- correctness in billing and collection – all properties should be billed for services and taxes according to actual consumption based on the correct tariff.³²

Such requirements are subject to all the formal policies of Council, including those relating to billing, tariffs, credit control, and indigency. Furthermore, in the real world slippage occurs all around this logical chain – many public services are not provided effectively, efficiently and economically; many services and taxes are set at inappropriate levels (often below cost, which is, however, too high); and make no provision for maintenance and growth. Furthermore, at this stage, no city government can claim completeness – i.e. 100% – in billing or collection, which indeed should not be expected. Little effort has been made to determine the measurement process or indicators, and the Municipal Financial Management Act Budgeting and Reporting Regulations are the best available at the moment.

Nevertheless the latter two gaps – between what should be billed and what is actually billed; and what should be collected and what is in fact collected – represent cash resources that the city government in terms of its own policies and procedures should, but does not, receive in its bank account. In this sense, these gaps are measures of a shortfall in 'revenue effort', and also revenue potential.

Completeness of revenue (billing)

By comparing data from a variety of sources (billing and payment data from the municipal billing system; property information from the municipal valuation roll and from the Deeds Registry, etc.) and by electronically matching the different databases against each other, it is possible to determine the number of properties that should be on the billing system for the different services. This generates information on level of completeness of billing as follows:

- properties on the valuation roll but not on the billing system
- properties with no rates billing
- metered properties not billed for electricity, water and sanitation
- properties not billed for refuse
- properties billed for water, but not sanitation
- properties billed for sanitation, but not water

Such discrepancies may exist for many reasons. For example, some properties are not rated for a perfectly valid reason (for example, they may be servitudes). However, many of the gaps are due to underlying business processes not functioning properly or being overridden and/or ineffective systems interfacing. Similarly, services may be indicated as not being billed or billed at R0, for many reasons, including incomplete meter-reading routes and incorrect or corrupt flagging of accounts for non-billing. Such gaps require extensive and detailed work to close, but they may have significant income potential.

The revenue optimisation opportunities for three of the SACN member cities were analysed.³³ The initial results were presented to the cities concerned, who responded by providing reasonable explanations for the existence of the gaps. If these explanations are accepted without verification, i.e. without on-site verification of every property rather than a random sample investigation and blanket application of the results to all properties in that category, then the gap is substantially and materially reduced.

While the analyses are suggestive, more detailed work would need to be done to confirm this data and in so doing, rectify any billing deficiencies. The analyses suggest that cities can potentially increase their billed revenues by between 1% and 7% by improving their billing administration and getting closer to completeness of revenue billed (see Table 6.7).

Table 6.7 Potential revenue optimisation opportunities at three cities

	City A		City B		City C	
	No of properties	Approx annual revenue gap (R million)	No of properties	Approx annual revenue gap (R million)	No of properties	Approx annual revenue gap (R million)
Valuation roll properties unmatched to billing	–	–	618	29,5	–	–
Properties with no rates billing	48 986	207.0	1 116	44.0	610	1.4
Properties not billed for refuse	39 176	9.5	5 869	4.0	–	–
Metered properties not billed for electricity	2 411	9.0	1 213	5.4	–	–
Metered properties not billed for water	1 447	3.8	3 636	12.4	995	4.8
Metered properties not billed for sanitation	2 841	5.5	1 125	1.0	992	0.8
Total revenue opportunities		234.8		96.4		6.4
Revenue potential as % 2009 billed revenue		2.4%		7.2%		1.0%

Source: Calculated by the authors from city annual financial statements

In two cases, the largest single component of the revenue gap involves properties that are valued but not being billed for property taxes³⁴, while in the third case the main gap is reported to be in un-metered water.

The Financial State of the Cities *continued*

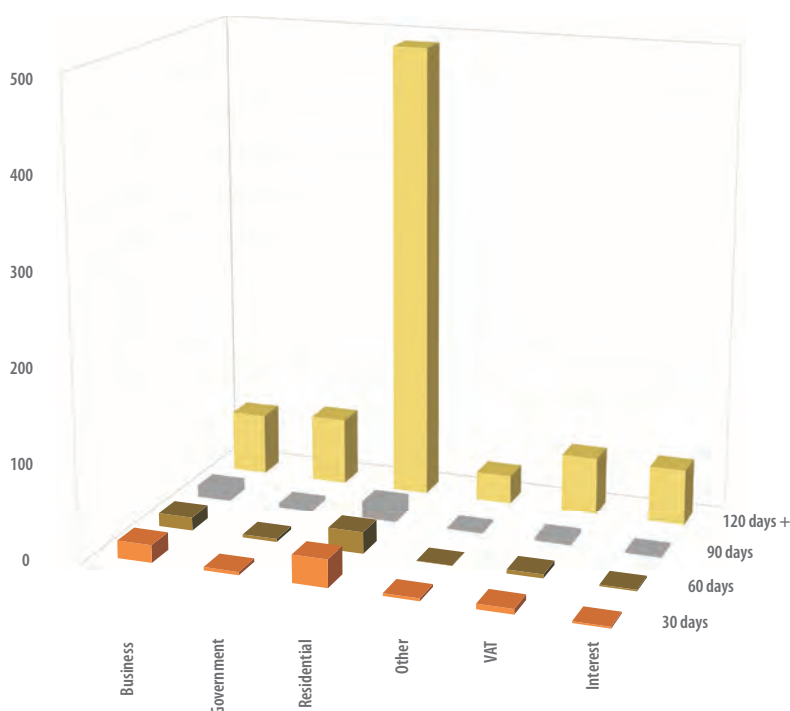


Figure 6.26 Profile of Mangaung debtors' book (R million)

Source: Calculated by the authors from analysis of city billing data

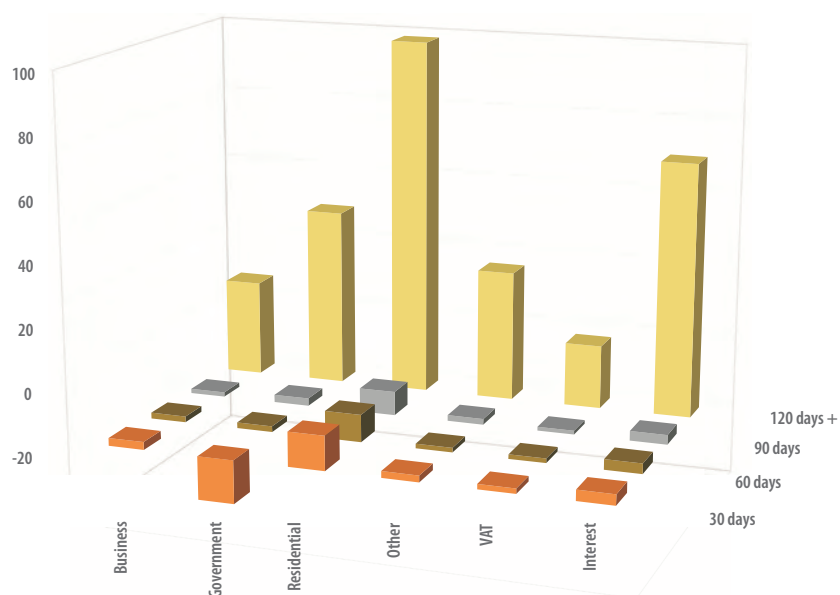
The debt analysis for three cities indicates that, on average, 65% of debt was 90 days old as at 31 December 2009. However, provision for bad debts was on average 54% as at 30 June 2009, implying under-provision, thus overstating operating surpluses.

Analysis of billing data provides insights that cannot be gleaned from the annual financial statements. For example, Figure 6.26 and Figure 6.27 provide profiles of the debtors' books for Mangaung and Msunduzi.

Collections

South Africa cities have long been unable to solve the problem of continuously growing debtors' books. Indeed, a large and growing debtors' book can be said to be a characteristic feature of municipal finance in South Africa, and certainly is in the cities reported previously in this chapter. Bad debts show an erratic pattern over the period (2004–2009 as per AFS)³⁵, which probably reflects the uneven implementation of provisions for bad debt, or the effect of changes to credit control policies. They could also be a reflection of the implementation of Free Basic Services coupled with challenges of indigent identification and management.

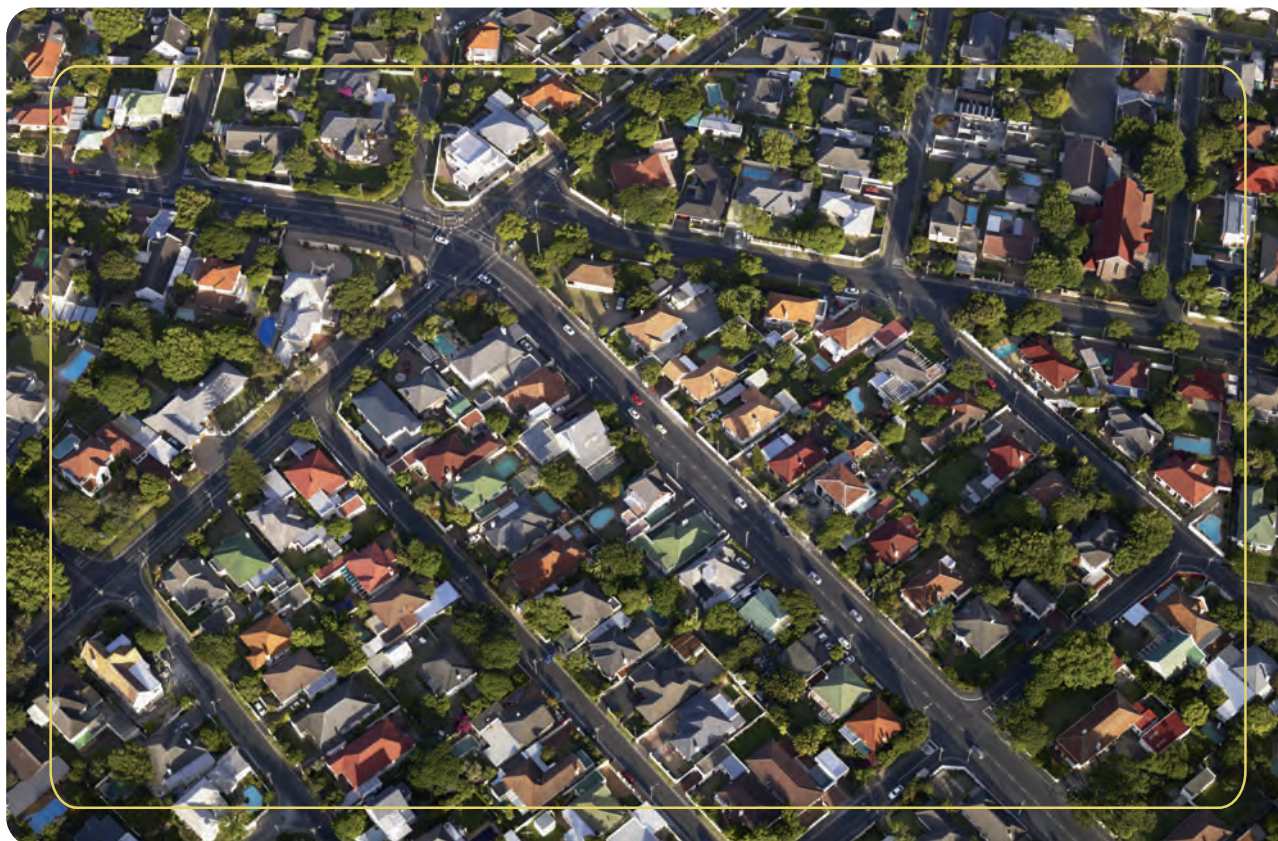
“A large and growing debtors' book can be said to be a characteristic feature of municipal finance in South Africa.”



It is immediately clear that these are not debtors' books that can readily be realised as cash; indeed, by conventional standards the debts are largely uncollectible. The profiles suggest a number of issues, including the likelihood of billing disputes of long standing, with for example, government departments and businesses. There are also some classification issues, resulting in a large 'other' category.

Figure 6.27 Profile of Msunduzi debtors' book

Source: Calculated by the authors from analysis of city billing data



The Financial State of the Cities *continued*

CONCLUSION: BUILDING FINANCIAL RESILIENCE

While the long-term improving trend in the financial position of South Africa's cities is still evident, in the last two years in particular their financial standing has become more precarious.

Key operational cost components are increasing rapidly, which, combined with the very high capital spending of recent years, puts substantial pressure on city cash flows. Although revenues have also grown fast, the cash position of the cities has deteriorated, and more realistic provisioning for bad debt means that the cash expenditure implications of under-collections must be confronted.

Moreover, although capital spending has never been higher, substantial backlogs remain in all the major categories: maintenance of existing assets; services and infrastructure for new growth; and extension of services in poor areas. The financial implications of the public transport challenges facing the cities suggest the need for new revenue sources.

Although substantial further analysis is required to assess all the criteria necessary for the financial resilience of the cities, the data presented in this chapter allows some conclusions to be drawn.

While South African cities still raise a meaningful share of their operational revenues themselves, their financial resilience has slipped, as grant revenues have increased in importance.

Many cities still have room for improvement in their revenue effort, but several cities appear to have sound overall debtors' management. However, as at the end of 2009, the cities were clearly facing significant cash management challenges and did not appear to be able to effectively control the increases in their major cost items.

Nevertheless, financial government has improved, and financial administration has become more systematic. Despite qualifications in the 2009 audit reports, improved financial reporting has resulted from:

- functional governance structures e.g. internal audit, audit committee
- action plans that address deficiencies within the organisational systems
- implementation of previous audit recommendations
- improved monitoring by leadership and management
- compliance with applicable legislation and accounting standards
- strengthened internal systems and controls.

Based on the information available, it is not possible to assess the appropriateness of capital financing strategies, the realism of tariffs, the extent to which sound budget balances are being struck or whether cities explicitly consider returns from investment before committing resources on a large scale. However, anecdotal evidence suggests challenges on all of these fronts.

These challenges are heightened by the fact that financial health in the country as a whole depends on matters such as the rate and persistency of unemployment, the level of household income and rising household debt. Any deficiencies in municipal government will have obvious consequences for the national economic development, as South Africa's nine city governments support nearly two-thirds of the economic activity of the country.

There are therefore reasons to be concerned about the financial resilience of South Africa's city governments.

Nevertheless, it is hard to avoid the conclusion that the period under review remains a successful one, despite the clear financial warning lights. Revenues and expenditures experienced good real growth, capital spending was extremely high by historical standards, and national government proved financially very supportive.



References

1. Gross value added (GVA) is a measure of net economic output of an area or region, in this case of cities.
2. The Mangaung data is not directly comparable since it does not include electricity revenue and expenditure as a result of the establishment of Centlec, the municipal business entity (MBE) created to conduct the services and functions previously performed by the municipality's electricity department.
3. Four of the cities received unqualified audit reports in 2009 (Cape Town, Johannesburg, eThekweni and Nelson Mandela). In the case of Johannesburg this was, however, not based on generally recognised accounting practice (GRAP) but rather on 'the applicable financial reporting basis of accounting', the implications of which are not clear at this stage. The other audit reports were qualified. Nevertheless the reliability of the data upon which this analysis is based is high.
4. South African Cities Network, 2007. State of the Cities' Finances Report. Johannesburg: SACN.
5. The municipal business entity (MBE) created to conduct the services and functions previously performed by the Mangaung municipality's electricity department.
6. Other revenue sources include interest on investments and on outstanding debtors, revenue from motor vehicle licenses and traffic fines, public contributions (such as by a developer for infrastructure costs, etc.) and numerous minor or sundry fees and charges.
7. See the following section on government grants to the cities.
8. RSC levy means 'Regional Services Council levy' see SACN op. cit., for the history.
9. See van Ryneveld P, 2008 '15 Year Review of Public Transport in South Africa with emphasis on metropolitan areas' paper commissioned by the Presidency for the 15-year Review http://www.thepresidency.gov.za/docs/reports/15year_review/economic/public_transport.pdf
10. In some cases there may have been revisions during the course of the financial year that would not then be reflected in the table, but these have been relatively few.
11. This is not true for all municipalities or for all services. However, for a 'built environment' related service such as public transport, the correlation between needs and economic base is positive. Public transport tends to become more costly to provide as cities become larger and more economically active – leading to longer distances in a greater variety of directions and higher congestion levels. Is this necessarily so? What of economies of scale and implementation compaction and densification policies that work?
12. Please see SACN op. cit., p. 56 for an account of the role of the RSC/JSB levies in city finance and the reasons for their abolition.
13. Municipal property taxes were also zero-rating for the purposes of VAT, which to some degree offset RSC revenue losses. National Treasury, Inter-governmental Relations Unit, 2010. RSC levy replacement amounts, e-mail communication, 28 April; National Treasury, 2009. 'The proposed method of phasing-in the implementation of the general fuel levy with metros from the 2009 budget onwards', internal NT document.
14. National Treasury, 2009, op. cit.
15. National Treasury (2010) RSC levy replacement amounts, e-mail communication, Inter-governmental Relations Unit, 28 April.
16. The RSC replacement grant and the share of the fuel levy are not listed as separate grants in Table 6.4, but are included in the equitable share figures.
17. The establishment of Centlec shows up as an abrupt termination of Mangaung's revenues, since there is no audited financial information on the utility.
18. Unlike interest earned on investments, much of the interest earned on outstanding debtors may never be collected as cash. The income arises in the first place only because debtors are being charged interest on overdue accounts, and since a substantial portion of gross city debtors are essentially uncollectible, much of this interest income itself may never be realised. High and rising figures here are an indication not of revenue strength but relative weakness.
19. Mangaung shows a decline because of the removal of electricity functions to Centlec.
20. City treasurers should make financial provision for bad debts based on the likelihood of collecting the amounts billed. This financial provision is independent of whether any particular debt is formally classified as uncollectable and therefore written off. The latter is a laborious and contentious process (one of the reasons why gross debtor's figures are so high), while making an adequate provision for bad debt (should be) a quick and technical monthly and annual accounting and cash-flow decision.
21. South African Local Government Bargaining Council.
22. The cities have had a three-year transitional period to fully implement some of the new accounting standards dealing with property, plant and equipment.
23. Ideally the repairs and maintenance should be directly linked to the different life-cycle management of the various municipal asset types. In practice, repairs and maintenance tends to be more reactive than proactive, resulting in uneven periodic expenditure increases in the medium and long-term.
24. Annual operating surplus (operating revenue minus the operating expenditure): any pattern of negative surpluses over an extended period must raise concerns about financial sustainability and resilience.
25. This means excluding other city revenues that are not billed to customers.
26. Several observations are applicable here: firstly, the aggregate operating surpluses referred to previously may be overstated by such under-provisioning; secondly, cities which do not make adequate provisions for bad debt can shortly expect to face adverse cash flow consequences; and thirdly, such consequences are somewhat masked and postponed because government grants are such a significant source of city revenue and cash flow.
27. The annual financial statements of the cities do not separately identify expenditures specific to 2010 FIFA World Cup™.
28. As the accounting standards relating to property, plant and equipment have been implemented, the extent of disclosure on capital expenditure has improved significantly. It is possible to provide a more detailed analysis of the nature of capital expenditure for the period 2006–2009.
29. Major refurbishment of an asset is capital spending because it goes beyond the routine maintenance that is classified as operating expenditure to provide a new long-lasting asset.
30. One of the disadvantages of the new accounting standards is that they do not accurately reveal how capital expenditure is financed. Analysis of borrowings complemented by other sources of information must therefore be used.
31. The chart shows long-term liabilities (excluding current portion) as a percentage of annual operating revenue (total revenue excluding capital grants). Operating grants such as the equitable share are legitimately part of annual operating revenue.
32. Note that the analysis done for this report focused primarily on completeness rather than on correctness.
33. Analysis conducted by PSU with the permission of the cities concerned. PSU, 2010. 'Report on Revenue Analysis', in Finance Chapter, in SACN, 2007. State of Cities Report. 3rd edition.
34. Care has been taken to exclude public service infrastructure, municipal properties and potentially indigent-owned properties from the list (while these properties are required to be valued they are not likely to be billed and therefore will not result in significant additional revenue).
35. Annual financial statements and annual reports of the cities.

"At times, the strategic importance of cities to the national economy, to social cohesion in the country, and to the achievement of national environmental goals, appears to be insufficiently appreciated. The metros are the hands and feet of the developmental state – an essential part of the solution to the socio-economic challenges facing the country."



Conclusion



Conclusion



Main findings

Compared to a decade ago, the economic and social conditions in South African cities are in many respects better. Employment has increased, investment in economic and social infrastructure is higher than ever, and external connectivity has improved through better transport links. Large numbers of households have benefited from state support for new housing and the extension of water, sanitation, electricity and other essential services. However, the recession has hit cities harder than other places, setting back earlier progress on employment, public spending and their induced effects. After experiencing the strongest growth during the 2000s, the metros in Gauteng appear to have been worst affected by the downturn.

Improved economic opportunities have encouraged people to move towards the cities, mostly to informal settlements and backyard shacks in the townships. Some migration flows have been temporary, while others have been reversed by the recession. Nevertheless, the provision of housing and services by the public sector has struggled to keep pace with the combination of urbanisation and natural population growth. Hence, the number and proportion of households living in informal dwellings in the cities have actually increased. Meanwhile, the share of informal housing in the rest of the country has been falling, and access to electricity and sanitation has increased more in the rural areas than in the cities as a result of improved delivery starting from a lower base.

Metro municipalities have found it difficult to plan and manage the pressures of population and economic growth. The result has been limited progress in providing households with access to essential services – the main reason for community dissatisfaction with council performance and protests over service delivery. However, the protests are also a sign that residents are committed to their areas and do not see themselves as temporary. Municipalities and other public bodies have also struggled to improve the quality of new settlements, including the provision of more appropriate forms of accommodation in better locations.

This struggle is partly because government spheres and sectors have not worked together well. There has also been insufficient flexibility and creativity in policies towards state-owned land, housing and infrastructure. Consequently, not much progress can be detected in integrating the fragmented structure and lay-out of South African cities through, for example, in-fill and densification of well-located areas. Without a better balance in the location of new housing development and of employment, the transport system has had to cope with rising demand for travel and long commuter flows. However, in the face of growing congestion and other transport problems, several positive initiatives have been taken on public transport and road improvements, which could also benefit the environment.

Concerns about the environment have moved rapidly up the local, national and international policy agenda. South African cities face growing challenges of food security, carbon emissions and constraints on water and energy supply. Some municipalities are pursuing more ecologically sustainable approaches to the use of resources and are making progress in aspects of transport, recycling and energy efficiency. These positive signs of experimentation and innovation demonstrate that much can be done at city level to realise national and international environmental commitments, by reducing emissions, developing alternative energy sources and managing waste better. Still, more could be done to connect policies and actions concerned with climate change to wider development efforts.



“Improved economic opportunities have encouraged people to move towards the cities.”

The bold vision of developmental metropolitan government established in the late-1990s has been far more difficult to put into practice than was originally envisaged. Municipalities struggle in the face of many competing demands, some of which are symptoms of deep-seated inequality, poverty and unemployment. Political instability, mismanagement and administrative failures complicate the situation and indicate that the whole system is under intense stress. Local government remains one of the least trusted public institutions, and its standing in society shows no sign of improvement. Communities, who were supposed to be closely involved in development programmes, criticise municipalities for being remote and unresponsive.

In some respects, the messages about municipal finance are more positive, although there are also warning signs. Council expenditures and revenues have grown strongly, and capital investment has never been higher, largely due to a big increase in national grant funding for municipalities. Weaknesses include a rapid increase in council operating costs and less effort being made to collect local taxes. Many councils are experiencing cash-flow problems, which are in part related to expenditure associated with the 2010 FIFA World Cup™. In future, before committing large-scale resources, most councils need to be more careful about where and how they invest. The growth of national transfers, at the expense of local revenues, also raises longer-term concerns about local accountability because it weakens the connection between municipalities and local citizens.

Is resilience a useful perspective?

Resilience has provided a useful overarching perspective to link different themes and thereby lend coherence to the analysis. It is complementary to, rather than a substitute for, other important analytical tools and concepts. Resilience implies the ability of urban systems and institutions to accommodate different sources of change and adapt to a state of flux. The need for versatility and resourcefulness arises from the openness of cities to external economic, social and environmental forces – for example, through trade, investment flows, migration and climate change. This openness creates opportunities for local growth and development, but also heightens the risks and vulnerabilities for citizens and communities, as witnessed with the recent recession.

“The provision of housing and services by the public sector has struggled to keep pace with the combination of urbanisation and natural population growth.”

Conclusion continued

Political and social changes are pervasive in South African cities during the contemporary period of transition. 'Transformation' processes are naturally associated with upheaval, instability and insecurity for particular groups and interests. Economic and spatial structures are often subject to more inertia than political systems and slower to change, creating social tensions and pressures from frustrated expectations. Systemic resilience and the ability to absorb pressures can help to avoid excessive disorder and breakdown that causes chaos and anarchy. Changes in the economy's structure are also important to prevent cities being locked into obsolete industries, out-dated techniques and rigid practices. In a different respect, the resilience of cities in a physical or ecological sense is highly relevant to climate change and environmental pressures. Now and into the future, South African cities need to be able to cope with a constrained supply of water and energy and more erratic weather conditions.

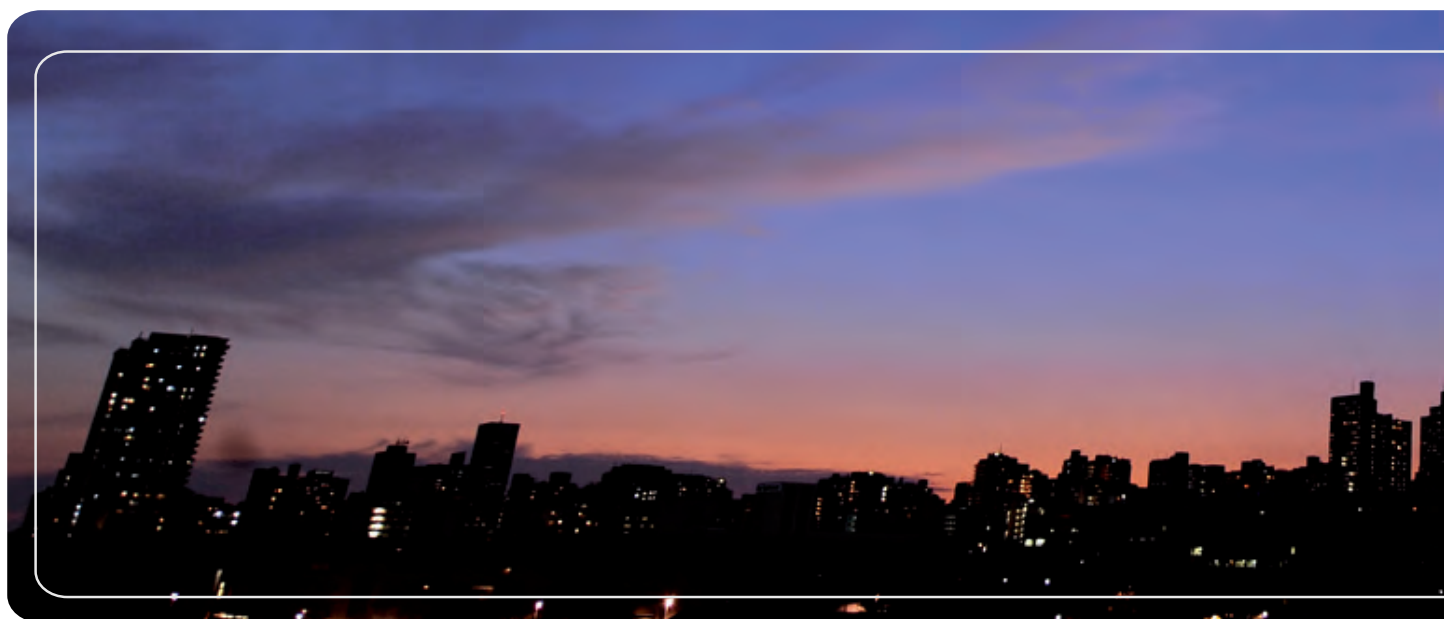
Municipal governments have important roles to perform in ensuring and improving urban resilience, which goes well beyond the routine delivery of basic services. They can assist economic actors (companies and individuals) to anticipate and adapt to technological, regulatory and market changes. They can provide infrastructure and services in innovative ways that use resources more efficiently, conserve energy and minimise waste and emissions. They can help to resolve social conflicts over land use, property development and public spaces by negotiating outcomes that serve the overall public interest and support the rights of the poor. They can manage public assets and finances prudently by investing sensibly and collecting revenues owed by ratepayers. To do all this they require the leadership, knowledge and resources to promote positive change, working in partnership with other stakeholders who also have contributions to make to the process.

Important messages for decision-makers

Three broad messages for decision-makers arise from the evidence and analysis in this report. All three reflect the short-term pressures facing city governments, as well as longer-term imperatives for creating more resilient, efficient and equitable cities.

1. Refresh the developmental vision of metro government

The original positive vision of local government has got lost in the midst of mounting concerns about service protests, mismanagement, political factionalism and self-interest. The creation of metro government was intended to be about much more than the delivery of household services to a passive citizenry, or the regulation of the physical environment to protect property owners. A bolder vision is required. Metro councils need to create conditions in which all citizens can develop to their full potential by leading productive and fulfilling lives. This vision should advocate the building of positive capabilities for production rather than welfarism or consumption. Metros would thereby give greater priority to investment in economic infrastructure, human capabilities and value-added enterprises and activities. Above all else, the consensus across society is that South African cities need more and better jobs and improved livelihoods.



More resilient and prosperous cities, with a stronger and more diverse productive base, will be better equipped to raise the revenues required to fund welfare services, public goods and environmental improvements. A range of social benefits will flow from more people in work, with greater community cohesion and stability, lower crime, improved well-being and a higher quality of life. This should enhance the reputation of cities as places to live, work, study, visit and invest in, while promoting a virtuous circle of self-reinforcing growth and development. Meanwhile, ordinary people will have an important route out of poverty and gain meaning, dignity and structure to their lives.

The economy should be a cross-cutting priority of each municipality, rather than a stand-alone function delegated to a single department. Councils should work closely with other spheres of government, the parastatals and private sector to boost investment in economic infrastructure, transport, energy, water and land. Such co-operation would improve the business environment and release productive potential. Improved skills, competences and work experience of young people and other unemployed adults would strengthen their job prospects and productivity. Councils should work in partnership with other business development agencies to support the attraction, retention and development of enterprises; these range from self-employment and informal enterprises to dynamic growth companies and multinationals. They should seek to develop new activities in the green and social economies, where a great deal of valuable work remains to be done and where people are available, given some organisation, knowledge and resources. In short, councils should work towards the vision of a multi-level developmental state in which the power of every sphere and sector of government is harnessed to ensure that every city develops to its full potential.

2. Stabilise metro government and restore trust

The competence and integrity of metropolitan government is under more intense public scrutiny than ever before. A tarnished reputation damages public confidence and undermines the ability of municipalities to do their jobs properly. National and provincial government are less likely to respect their decision-making authority and devolve powers and resources to city level. The new cohort of municipal leaders and officials need to face up to past problems of mismanagement, administrative failures, under-spending, flawed tendering procedures and malpractice. Greater openness and honesty about inherited difficulties is the first step towards resolving them. Good leadership accepts responsibility for problems and sets about finding appropriate solutions.

A concerted effort is required from national government and political parties, as well as from local councils themselves, to restore popular trust and credibility in local government by strengthening ethical procedures, reviewing systems of staff appointment and councillor selection, and making decision-making more transparent. Oversight and accountability mechanisms, such as ward committees, could be enhanced to give communities a stronger voice in decision-making. The role of councillors could usefully be reviewed to make their role as essential intermediaries between the administration and communities more effective. The new Consumer Protection Act will put extra pressure on the metros to get their houses in order. It gives residents of high-capacity municipalities new rights to demand services (such as water, electricity and refuse removal) of a generally acceptable standard and within a reasonable timeframe.



Conclusion *continued*

As the basic competence and capabilities of municipalities increase over time, leadership stability and continuity should also improve. All spheres of government and society need to recognise the importance of effective city leadership. At times, the strategic importance of cities to the national economy, to social cohesion in the country, and to the achievement of national environmental goals, appears to be insufficiently appreciated. The metros are the hands and feet of the developmental state – an essential part of the solution to the socio-economic challenges facing the country. To be successful they also require capable eyes, ears and brains – i.e. high calibre leadership operating intelligent systems with the support of national authorities.

A new commitment is required, to work with communities in order to channel their energies into constructive activities rather than in protest action or apathy. By engaging more closely, the municipality and community groups would improve their understanding of each other's problems, options and realities. It should help to transfer knowledge, skills and capabilities to local citizens. Council planners and engineers should work in partnership with service providers, infrastructure contractors and community organisations on practical problem-solving to build consensus and commitment. A multitude of community-based projects should be developed that build capabilities while providing goods and services that meet local needs.

3. Start reshaping and reconfiguring cities

The current spatial development trajectory of South African cities is creating problems for the present and storing up bigger problems for the future. City governments are patently failing to plan and manage urban growth effectively. A concerted effort is required to start turning around the super-tanker of distorted urban development because of the damaging cumulative effects of current investment decisions. Over time, fragmented cities need to be knitted together more tightly in the interests of functional efficiency, social inclusion and environmental sustainability. The densification of well-located areas also needs to be taken much more seriously, by national as well local government. More intense development of vacant and under-used land is required, as well as retro-fitting of established inner cities and suburbs to boost population thresholds and raise environmental standards. Considerable scope exists to introduce efficiencies in energy and water consumption, better waste management practices and renewable energy sources.

The progressive devolution of built environment functions to the metros presents a unique opportunity and offers exceptional prospects for formulating more integrated and coherent spatial development strategies for cities. The metros will need to develop a suite of plans, policies and practical competences to start transforming current practices and achieving an urban environment that is genuinely more resilient, efficient and equitable. Planners, surveyors, engineers, developers, environmentalists and other professionals will need to get out of their comfort zones and silos and work together much more closely. They will also have to become far more creative in devising new solutions for urban restructuring, intensification and integration. Municipal accountants, audit officials, financiers and regulators will also need to understand the importance of integrated investment decisions, innovative thinking and flexibility to achieve the desired outcomes. High-level national support will be required through funding, strategic oversight, legislative changes (e.g. in land-use management, planning and building standards), and the taxation and regulation of private motoring to improve public transport.

A prerequisite for better strategic planning and investment decisions is an improved evidence base and understanding of urban trends and processes. Furthermore, in a volatile and precarious environment, a fuller appreciation of different sources of risk and vulnerability is also vital. Decisions to invest in or regulate activity are too often based on intuition rather than on sound evidence or understanding. National government should commit to improving the availability of city-level and municipal-level data on economic, social, demographic, environmental and governance issues, perhaps through Statistics SA. Every city should also have some kind of 'observatory' function to assemble information, monitor important trends, conduct research and help to evaluate policy.

“Fragmented cities need to be knitted together more tightly in the interests of functional efficiency, social inclusion and environmental sustainability.”





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