

A National Overview of Spatial Trends and Settlement Characteristics

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Authors: Elsona van Huyssteen and Alize Botha

Contributing Authors: Cathy Meiklejohn, Jarrel Whisken, Karishma Busgeeth,
Andries Naude and Shirley Robinson (EconRise)

Contributors: Seana Nkhahle, David Schmidt, Sue Parnell, Ivan Turok, Mark Oranje,
Sharon Biermann, Owen Cranckshaw and Alison Todes

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Summary of Key Findings

1. A more nuanced and temporal reading of spatial data and information suggest and confirms some key socio-economic and environmental trends and characteristics in the South African landscape. These trends and characteristics will, and most probably already have, a significant impact on governance and service-delivery challenges.
2. Key characteristics and trends evident from the analysis can be summarised as follows:

One: Out-migration seems to take place from the central parts of the country and even from traditionally densely populated coastal districts. Associated with that, city-region areas experience continued net growth (including the city-region areas of Gauteng and the port cities of Cape Town, eThekweni and Nelson Mandela), cities (such as Pietermaritzburg, Nelspruit, Bloemfontein and East London), major regional centres (such as Rustenburg, Middelburg and Mthata) and especially towns on major access routes and movement corridors.

Two: There seems to be a change in the demographic profile, not only of city regions, cities and big towns, but also in that of inland districts within the Eastern Cape and Northern KwaZulu-Natal inland areas and central regions. The analysis suggests that city-region areas are attracting and housing increasing numbers of the youth, the biggest and most highly skilled portion of the formal and informal labour market, as well as the biggest number of those that are unskilled, economically inactive and most probably those in search of livelihood opportunities. A significant change seems to be taking place in the profile of districts/regions with traditionally high numbers of people, poverty and dependency ratios in terms of youth, economically inactive population and grants. These areas (mostly former Bantustan areas with limited economic activity) are characterised by outward migration and a decline in young population. On the other hand, an increased concentration of poverty and higher dependency ratios seem to be found in the city-region areas and cities.

Three: The growth of the South African economy, increased access to job opportunities, as well as diversification and innovation are largely carried by the city-region areas. Economic decline is mostly evident in some traditionally resource-base economies, associated often with a decline and a scaling down of the mining industry and jobs. Places of high economic growth over the last decade include small niche towns. Cities and metropolitan areas not only made a significant contribution to economic growth due to their size, but also due to sustained levels of relatively high growth rates over the last decade. Some economies are largely dependent on government services. In such towns and areas, often located in former Bantustan areas, as well as in city-region areas, the impact of household income in creating economic and livelihood opportunities in regions with high numbers of population is evident.

Four: Trends of increased spatial concentration and agglomeration are evident. The analysis highlights the importance of access to concentrations of economic activities/opportunities, livelihoods and public services. It also illustrated that different regions and spaces, fulfilling diverse roles and functions, form part of an interconnected system of settlements and regions.

Five: The analysis supports claims that the last decade bears testimony to major advances in service delivery. However, it also becomes clear that backlogs and pressures for service delivery are increasing in the cities, city-region areas and those towns that fulfil typical regional services roles. Whereas migration and growth trends can typically be related to economic drivers, the analysis suggests that there might also be a relation between migration and access to public services.

Six: Continued and concentrated economic and population growth, are said to be reaching critical proportions in terms of the pressures on interdependencies with and implications for natural resources, eco-systems and development for sustainable futures. This is not only because of growth pressures, but probably even more so because of the way in which this growth is managed and quality of life pursued. Analysis of water availability, biodiversity and land capability shows evidence of these pressures, not only in areas characterised by urbanisation, but also within densely populated rural areas.

3. The above mentioned trends and the dynamics of increased concentration points to the importance of settlements, and the network of settlements, in providing access to livelihoods, services and economic opportunities for the vast majority of the South African population (both in so-called/traditionally perceived urban and rural areas). These different types of settlements fulfil diverse roles and face unique challenges within their functional regions. Viewing the data and trends in this context, strong evidence seem to be emerging that the future of South Africa and its citizens, and the crucible for government in delivering on its objectives in many ways hinge on the future of the following key areas/settlements:

The Gauteng city region and coastal city regions of Cape Town, eThekweni and Nelson Mandela Bay – The analysis suggests that these areas are home of more than 38% of South Africans on less than 2% of the land area, they are the engines of the South African economy and fiscus, generating 65% of all economic activity (2004) and in many respects the generators of growth, jobs and livelihood opportunities and the gateways to Africa and a continued continental and international presence for South Africa (ports, export/imports, etc.). The city-region areas are also under severe pressures brought about by continued urbanisation and population growth, increased poverty, higher dependency ratios and increased demands on services and resources. Together with this, city regions also face the enormous challenges of managing their impact on the environment and climate change, and their extreme vulnerability in terms of eco-systems, dependency on natural resources and risks for disasters. They are the places that will in many ways (directly and indirectly) determine the quality of life of the majority of South (and probably Southern) Africa's citizens and place serious demands on governance systems and institutions in future.

The cities and towns that fulfil significant economic and public services functions - These places seem to also bear evidence of increased urbanisation and town-ward migration. They include:

- cities such as Nelspruit (Mbombela), East London (Buffalo City), Polokwane, Bloemfontein (Mangaung) and Pietermaritzburg (Msunduzi), typically with growing populations and economies;
- large and medium sized towns such as Rustenburg, Richardsbay and Witbank within relatively resource-rich areas (areas that are seemingly characterised by growth in the economy and population), Kimberley and Uptington with strong regional services functions in sparsely populated areas of the country, or towns such as Mthata and Thohoyandou with limited ranges of urban functions in highly populated former Bantustan areas. The last category towns are in spite of seemingly strong out-migration trends in their surrounding areas, carrying the brunt of town-ward migration, continued natural population growth and huge dependency ratios, with economies characterised by the dependency legacy on government and community services sectors.

The analysis suggests that in total these cities and regional service centres are home to almost 20% of the population and 20% of economic activity in the country (2004). It is further evident that such cities and regional service centres, which are located on key regional access routes and corridors, are typically marked by higher rates of growth, both in terms of population and economic opportunities, whilst those in former Bantustan areas typically have much higher dependency ratios.

The densely settled clusters and dispersed settlements in the former Bantustans, forming home of 21% of the SA population and 32% of people living under minimum living level (2004). Significant characteristics of these clustered and dispersed settlements are especially the limited accessibility and limited number of towns that provide a regional services role in these areas.

The **range of smaller towns, service** centres and nodes scattered through-out the country, with diverse characteristics and roles, in total housing about 14% of the country's population, 16% of people living under minimum living level and 8% of the country's economic activity (2004).

4. Considering the above analysis within the context of a more spatially nuanced/regional focus, the following areas stand out as prominent areas in terms of current and future patterns of urbanisation and settlement development:
- the Gauteng and coastal/port functional city regions;
 - the eastern-coast and inland areas, as well as the northern KwaZulu-Natal areas marked by dense rural settlements and a limited number of towns that are fulfilling a limited regional service role; and
 - the network of towns, regional access corridors and clustered and dispersed settlements within the relatively resource-rich northern part of the country (Limpopo/Mpumalanga).

5. Co-ordinating investment and intervention in these spaces could contribute to reaching government's objectives of quality of life, shared and sustainable growth and job creation and tackling the grand challenges of climate change, increased resource scarcity and rising energy costs.

Background and Purpose

The South African government made significant progress over the last 15 years in building a democratic governance system and policy framework; in establishing local, regional and national governance capabilities; and in enhancing quality of life for the majority of its citizens through delivering basic services and housing; addressing poverty and in providing access to services and economic opportunities. However, some of the key questions raised are for example:

- How could this be enhanced and taken forward in the next decade?
- How can government reach its objectives of shared, inclusive and sustainable growth?
- How can quality of life be improved to the majority of the population in sustainable ways?
- How can seemingly increasing backlogs in service delivery be tackled more effectively?
- What are important patterns, dynamics and spatial trends that will influence the above?
- How can inclusiveness and equity be obtained?
- How can we move away from the spatial patterns created by restrictions of access in Apartheid years?
- How can we ensure access to significant livelihood and service opportunities for the biggest number of the South African population?
- What are the trends and patterns that could potentially (and most probably already do) have significant impacts on governance and service delivery challenges?
- What is the role of the so-called urban and rural settlements within this context? Have the role and profile of cities changed over the last decade?
- Where does government need to focus to address the grand challenges of resource scarcity, increasing energy costs and climate change?

Within this context, government is embarking on a process to review the National Urban Development Framework (NUDF). In support of this process, the CSIR, Built Environment has been commissioned by the South African Cities Network (SACN)¹ to identify significant national demographic, economic, social and service trends impacting on the national space economy and the growth and development of South Africa's towns, cities and city regions.

This National Spatial Trends Overview is meant to form a key baseline input to the forthcoming national urban development framework, and was to build onto work already done within the National Spatial Development Perspective (NSDP), as well as take into account recent publication of trend data and enhanced capabilities to conduct more nuanced spatial analysis.

In conducting the analysis it became evident that the character and role of not only cities and city regions are changing, but also that of the range of other settlements in the country.

On the one hand, this in many ways, challenge some traditionally held perceptions about, for example: the role of 'urban versus rural'; that poverty are most prominent in so-called rural areas; that cities are the home to the rich (and more specifically the white rich); that so-called rural areas form the basis for South Africa's youth, has the highest dependency ratios and need to be the focus of social investment initiatives.

On the other hand the analysis suggests that there are a range of settlements, including the following: densely settled clusters; local towns and service centres; regional service centres; cities; and the bigger city-region areas, which fulfil diverse roles and face unique challenges within their functional regions. The diverse range of increased pressures, opportunities, as well as development and governance challenges converging in these spaces highlight the urgent need for diverse and focussed government interventions and investment, as well as contextually relevant regional and settlement development.

¹A series of projects have been commissioned by the SACN during May 2008 to unpack and support the critical developmental challenges and opportunities within South African urban areas, as well as support the Presidency and dplg within the policy processes aimed at feeding into the National Urban Development Framework (as mandated by Cabinet), understanding the vast role of settlement dynamics and the role of these settlements within diverse regional development contexts.

The brief overview of spatial trends and settlement dynamics contained in this paper² has been drawn from a more regional focussed analysis of selected demographic, economic, built environment and natural resource spatial and trends data³ as set out in the accompanying analysis (see Annexures A-G) undertaken by a multi-disciplinary team⁴ with support and inputs from a large number of collaborators⁵. The analysis drew from and contributed to a foundation laid by policy, spatial analysis and technology developments over the last five years (see Annexure H) and a large number of data sources.

The overview provided in this report is divided in three parts:

- PART A – providing a summary overview of some of the significant findings of the analysis of characteristics, changes and spatial trends relating to population, the economy, services and natural resources throughout the country and in particular within the four major city-region areas⁶;
- PART B – providing a summary ‘reading’ of the character and roles of particular kinds of places within the network of settlements and functional hinterlands and the implications thereof; and
- PART C – in conclusion, raising some questions about possible implications emanating from this initial reading of spatial trends and settlement dynamics for governance and government investment.

PART A: A Summary Overview of Key Spatial Characteristics, Changes and Trends

As indicated, Part A provides an overview of some of the significant characteristics, changes and spatial trends across the country. This section is based on an analysis of comparative spatial data, as set out in more detail in the accompanying Annexures (A-H). This analysis focussed on identifying significant spatial changes, trends and dynamics with relation to the population (Annexure A) and poverty (Annexure B), the economy (Annexure C), services and the built environment (Annexure D) and natural resources (Annexure E), with a specific focus on the range/network(s) of settlements within their regional contexts, as well as within the four city-region areas in particular (Annexure F).

Data used in the analysis was largely based on:

- Spatially referenced data available to and prepared by the CSIR over the last couple of years as e.g. contained within the Geospatial Analysis Platform (GAP2) and the Portal for Integrated Planning⁷.
- Recently released, readily available and comparable social, economic and services data. This includes data from the 2007 Stats SA Community Survey data and the Quantec data sets (based on the Stats SA Data and providing municipal comparative data sets since 1994) that were presented and interpreted in terms of their spatial manifestation.
- Selected additional data drawn from e.g. the Departments of Water Affairs and Housing, the National Biodiversity Study and other sources (see Annexure G for all references).

In many ways the findings are not necessarily ‘new’. They rather re-iterate and provide some evidence of the manifestation and scale of the trends and dynamics evident in societal forces, as mentioned in various research and policy outputs over the last couple of years. These trends and dynamics include for example, the increased population growth and pressures for service delivery (the so-called split in household size was mentioned in the Ten Year Review, PCAS, 2004); continued urbanisation and town-ward migration (see inter alia NSDP, 2006; and Todes, et al, 2008); the much talked about resource and energy pressures;

² The ideas and concepts in this paper have been developed in collaboration with Prof Sue Parnell (Centre for African Cities), David Schmidt (Strategies for Change), Seana Nkhahle (SACN), Prof Mark Oranje (UP) and Prof Alison Todes (Wits).

³ The more detailed analysis on each of these sections, as well a section pertaining to city regions in particular, have been compiled in the form of a Resource Document (CSIR, 2008) prepared as part of the project deliverables for the SACN.

⁴ The original analysis has been done by the CSIR, Built Environment team (Elsona van Huyssteen, Alize Botha, Cathy Meiklejohn, Jarrel Whisken, Karishma Busgeeth, David Le Matre and Andries Naude) in collaboration with Shirley Robinson (Econrise).

⁵ Specific inputs have been provided by Dr Sharon Bierman, David McKelly, Pieter Schmidt (all from CSIR), Prof Larry Zietsman and Willem Badenhorst (Mandala GIS). Contributions have also been made during the process by Prof Owen Crankshaw (UCT), Prof Ivan Turok (Univ of Glasgow) and Dr Jo Lorentzen (HSRC).

⁶ The four city-region areas included for the purpose of the study are the Gauteng global city-region area, the Cape Town, eThekweni and Nelson Mandela Bay city-region areas (see Annexure F for the description of the study areas);

⁷ The Geo-spatial Analysis Platform⁷ (GAP2, see CSIR 2007) and spatially disaggregated data (see Annexure H) as well as a spatially nuanced (context specific) description and verification of urban functional and rural settlement areas⁷ in South Africa (developed by the CSIR’s Naude et al – see Naude et al, 2008), was used as foundation for the analysis (see Map 1 in Annexure H).

as well as the impacts of the economic and labour market landscape and the increasing challenges facing the range of settlements and cities in the country⁸.

The contribution of this analysis is probably a more nuanced description of the spatial dynamics of these changes and trends, as well as the diverse investment, services and governance challenges and implications that raises in key spaces/regions and types of settlements. Building onto the above-mentioned foundation, this particular analysis then also explored, and subsequently highlights, the way in which the trends manifest spatially within:

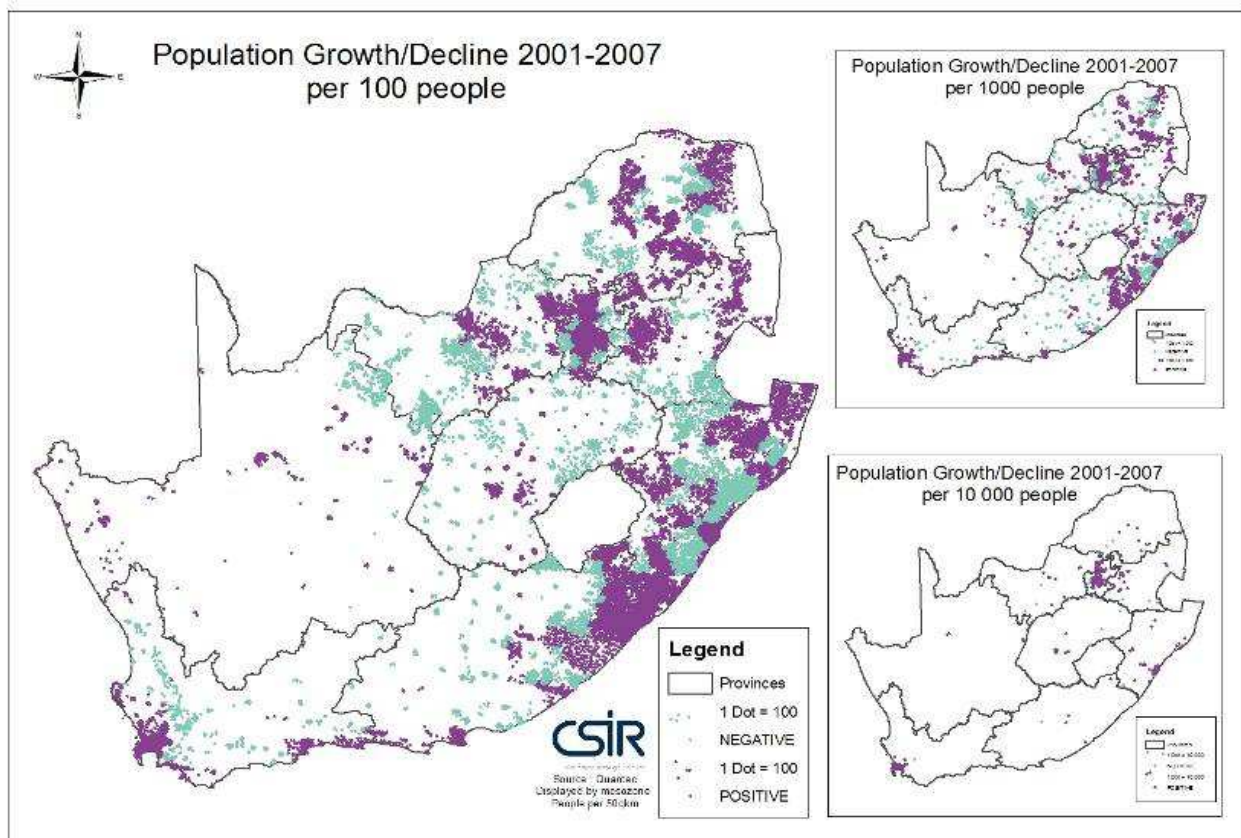
- different regional contexts;
- the range of settlements and networks that support livelihoods, as well as provide access to service and economic opportunities in those regions; and
- within the four city-region areas in particular.

The rest of the section will explore each of these challenges and trends and its spatial impact in more detail, with a particular focus on their manifestation on the various functional regions and the range of settlements within them.

a. Migration and Growth

Out-migration seems to take place from the central part of the country and even from traditionally densely populated coastal districts with associated continued net growth of city regions, cities, major centres and especially towns on major access routes and movement corridors.

Map A1: Population growth/decline 2001-2007



⁸ See work done in the National Urban Development Framework process, PCAS Ten Year Review, NSDP 2006, draft Regional Industrial Development Strategy 2006, Housing Atlas 2006, GAP2 analysis (CSIR 2007), Naude and van Huyssteen 2007, Naude et al 2008, Parnell 2008, Todes 2008 (references set out in Annexure G).

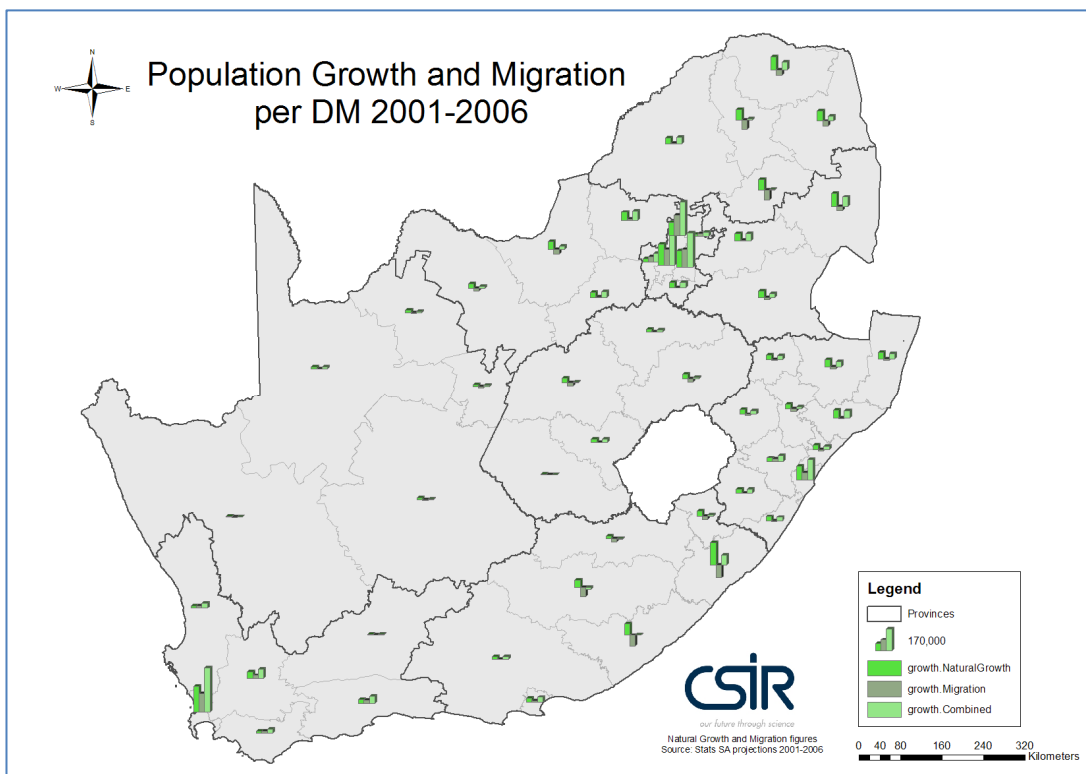
The provinces of Gauteng, KwaZulu-Natal and Western Cape account for over 70% of the national population growth of the entire country between 1996-2007 (Stats SA, Quantec). It also is in these provinces that the biggest growing metropolitan areas are located which are huge drivers of provincial population growth. Areas of significant total population growth between 1996 and 2007 (Stats SA, Quantec data) include the metropolitan areas of Gauteng (City of Johannesburg, Ekurhuleni and Tshwane), City of Cape Town and eThekweni (see Annexure A). This equates to a growth of over 4.3 million people – implying that in Johannesburg metro alone there were 1.25 million more people in 2007 than there were in 1996. The magnitude of this growth has huge implications for service delivery and infrastructure provision in the metropolitan areas. The steep growth in the average metro population (2,9%) is way above the national average of 1,8 per cent over the 11-year period.

Looking at spatial changes between 2001 and 2007, (CSIR dis-aggregation of data from StatsSA, Quantec – see Annexure A) a noticeable general trend is the town-ward shift and a coastal drift (Map A1). There has also been some population growth in rural areas along access corridors/routes. One of the biggest concentrations of population growth is still the densely populated Eastern Cape coastal areas. Even though there is a trend of people moving away from these areas (also see Migration Data and decline in Economic Active Population), the high base population levels mean that these areas are continuing to experience population growth.

Another type of area that experienced significant population growth are those in former Bantustan areas which also have significant population concentrations (over 100 000) but are generally not economically sound urban services nodes (often lacking infrastructure and governance capacity and with relatively low GVA). For example, Umtata, Thohoyandou, Ulundi, Greater Sekhukune district which includes Siyabuswa and Groblersdal. Although these areas still experiencing significant population growth, as discussed above, many of them are also experiencing a dramatic trend of out-migration. Growth in the Limpopo and KwaZulu-Natal border areas, as well as in towns that fulfil a regional service function within these areas is also significant.

An exploration of migration trends between 2001 and 2006 suggests that the biggest movements took place to municipalities with either a strong metropolitan area or a secondary city (See Map A2 with stats SA Projections developed for DWAF and also used in the NDSP 2006).. The main pattern was a focussed migration towards the two predominantly metropolitan provinces in the country (Gauteng and Western Cape). All the Gauteng and Western Cape district and metropolitan municipalities experienced a net in-migration of people between 2001 and 2006 while none of the Free State District municipalities experienced net-inmigration. The metro areas are the areas of highest combined growth.

Map A2: Population growth and migration 2001-2006



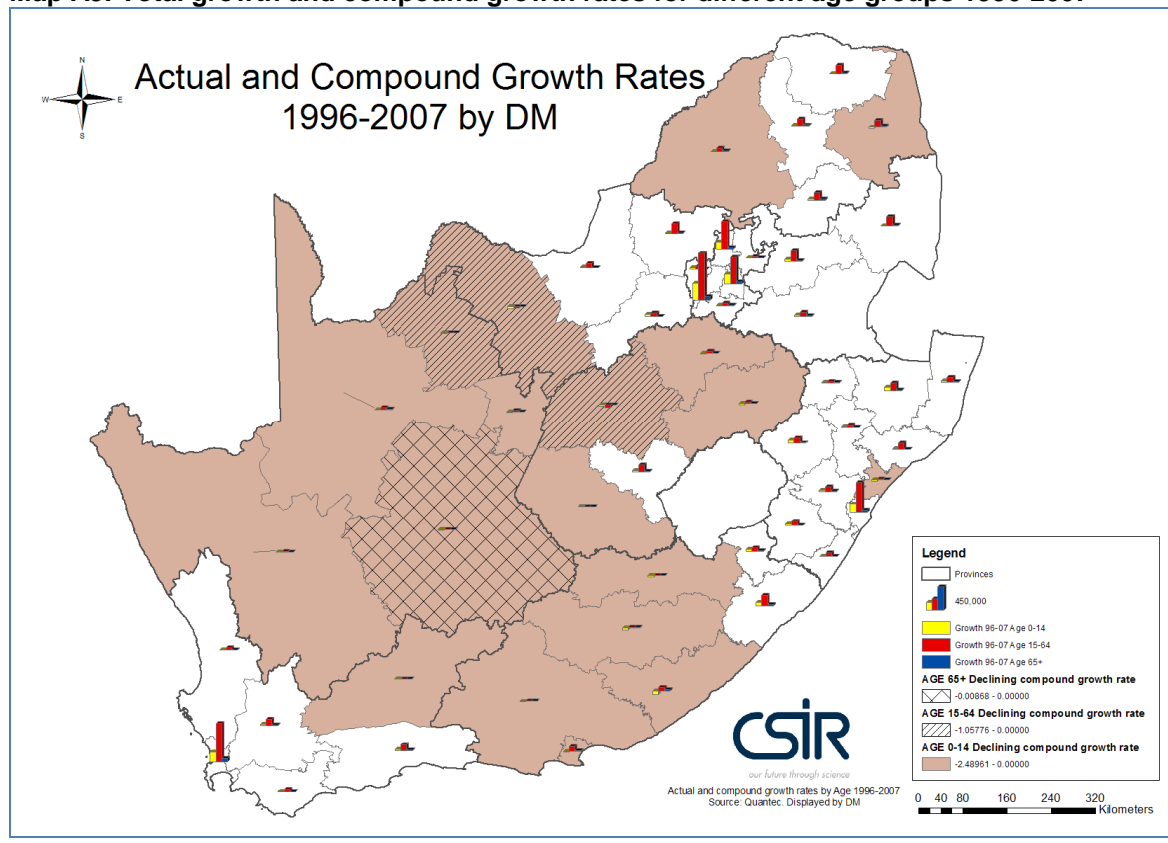
In Eastern Cape, areas such as O.R. Tambo still bear significant total growth in population due to high natural growth. However, these areas are characterised by high levels of out-migration. Thus, although the population is still growing there, the general trend is for people to be moving out of the area. In the other Eastern Cape districts the migration is virtually cancelling out the natural growth resulting in little if any combined/total growth. All four Free State districts are also experiencing minimal total growth because natural growth is countered by out-migration. Northern Cape districts are in most cases experiencing out-migration. Although there is out-migration from many Limpopo and Mpumalanga districts (particularly Vhembe, Capricorn, Mopani, Greater Sekhukune and Ehlanzeni) most of them are still experiencing total/combined population growth.

Analysing the growth in population in terms of racial distribution during the 1996-2007 period, it stood out that the biggest percentage of Black population growth occurred in the City of Johannesburg (14%) and 48.4% of all growth of the Black population occurred in five metropolitan areas, this amounts to an actual population growth of 3.4 million increase in the Black populations of the City of Johannesburg, City of Tshwane, eThekweni, City of Cape Town and Ekurhuleni Metropolitan area from 1996 to 2007. As would be expected almost 40% of all national growth in the Coloured population took place in the City of Cape Town, followed by Cape Winelands and Eden districts (Annexure A).

Metros are not only growing in terms of economically active population but also in terms of youthful population numbers. The five metros had 71.2% of the youthful population growth taking place in them in the period 1996-2007 (Quantec, see Annexure A). This implies that there has been a growth of more than a million people in the age group 0-14 years old in the metropolitan areas which has huge implications for the social networks and provision of services such as education facilities in these areas.

The vast majority of districts with declining youthful populations over the period 1996-2007 are in the Eastern Cape, Northern Cape and Free State provinces (Quantec, see Annexure A). It is significant that Nelson Mandela Bay metropolitan area also shows a decline in youthful population, admittedly a loss of approximately 10 000 youth from a total population of approximately 1 million (Quantec). Although this is counter the trend of youthful population moving towards the metropolitan areas, it is in line with the general trend of a less youthful population in the Eastern Cape districts.

Map A3: Total growth and compound growth rates for different age groups 1996-2007

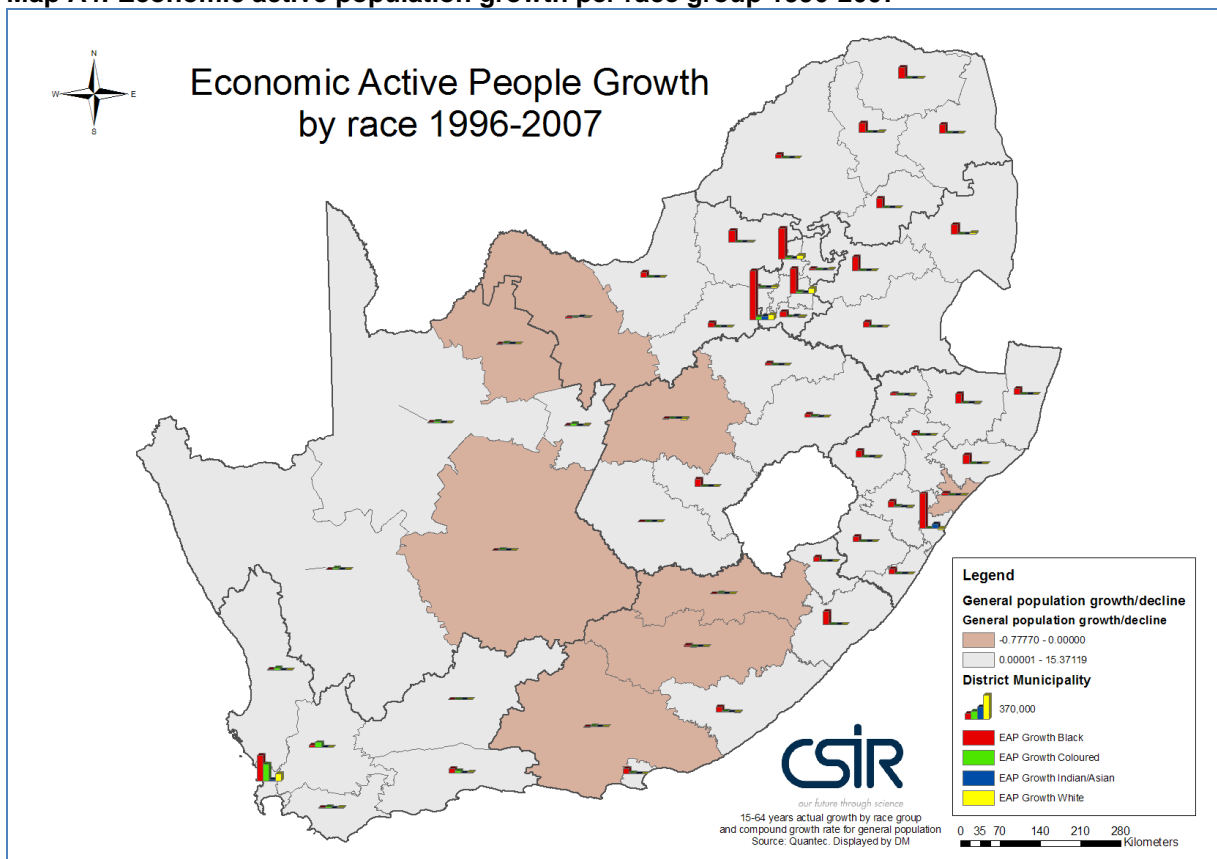


In 2001, while individuals between the ages of 25 and 54 years comprised 81,7% of main metropolitan and city-region employment, it is the older age group (35-54 years), particularly in the Gauteng and Cape Town city-region areas that have seen growth in employment over the 5-year period 1996 to 2001 (Quantec, see Map A3 and Annexure A). Of considerable concern is the minimal, even negative growth in employment for younger individuals aged between 15 and 34 years, with larger impact in the eThekweni and Nelson Mandela city-region areas (Quantec) during this period.

As expected from the migration and growth trends, the comparison of 1996-2007 data (Stats SA, Quantec) illustrates that the economic active population (EAP) are generally moving to places of economic opportunity or perceived economic opportunity (Annexure A). The major metropolitan areas account for almost 50% of the national growth in economic active population during the period 1996-2007 (Stats SA, Quantec). Other areas that show significant increases in economic active population are mostly cities, such as Nelspruit, Bloemfontein and Pietermaritzburg, the economically growing regional node of Rustenburg and also the towns of Mthata in the Eastern Cape and Ulundi in KwaZulu-Natal.

There is also an interesting growth in the number of economically active people across four Limpopo districts (Ehlanzeni, Vhembe, Capricorn and Greater Sekhukhune) which, with the exception of Polokwane (the major node in the province), seems to provide evidence that job-seekers (possibly also from beyond South Africa's borders) engage in a form of stepwise migration to the nearest service/regional centres to them rather than straight to the major metropolitan centres (see Annexure A). In the Western Cape there is also significant growth of the economically active population in the areas on the fringes of the Cape Town metro, but part of the Cape Town functional area such as Stellenbosch. Mossel Bay and Plettenberg Bay (Eden DM) are also part of a coastal band attracting EAP growth.

Map A4: Economic active population growth per race group 1996-2007



In an analysis of the growth in economically active population by race in the period 1996-2007 (Stats SA, Quantec), one of the outstanding phenomena (see accompanying Map A4, reflecting in the background areas of positive average annual compound population growth (grey) and negative average annual compound population growth (pink)) is the growth in the economically active proportion

of the Black population within the metropolitan areas. In 2001 the Black population comprised almost six tenths (53,1% and 56,4%) of the main metropolitan and city region employed, respectively.

The growth in economically active population during 1996-2007 in many ways probably mirrors the growth in population in general, even though the growth in many of the KwaZulu-Natal, Limpopo and Mpumalanga districts, with specific peaks in the districts of O.R. Tambo and Bojanala (Rustenburg in North-West), stands out (StatsSA from Quantec).

Of note is that in 2007 the main metropolitan municipalities housed almost 73% of the city regions' economically active population and 38,3% of that for the country as a whole, accentuating that the main metros form the core of South Africa's labour market (Stats SA from Quantec, Annexure F). At 2,8% the average growth of city region economically active population is higher than the national average of 1,8% over the 11-year period 1996 to 2007 (Annexure F).

b. Change in Demographic Profiles

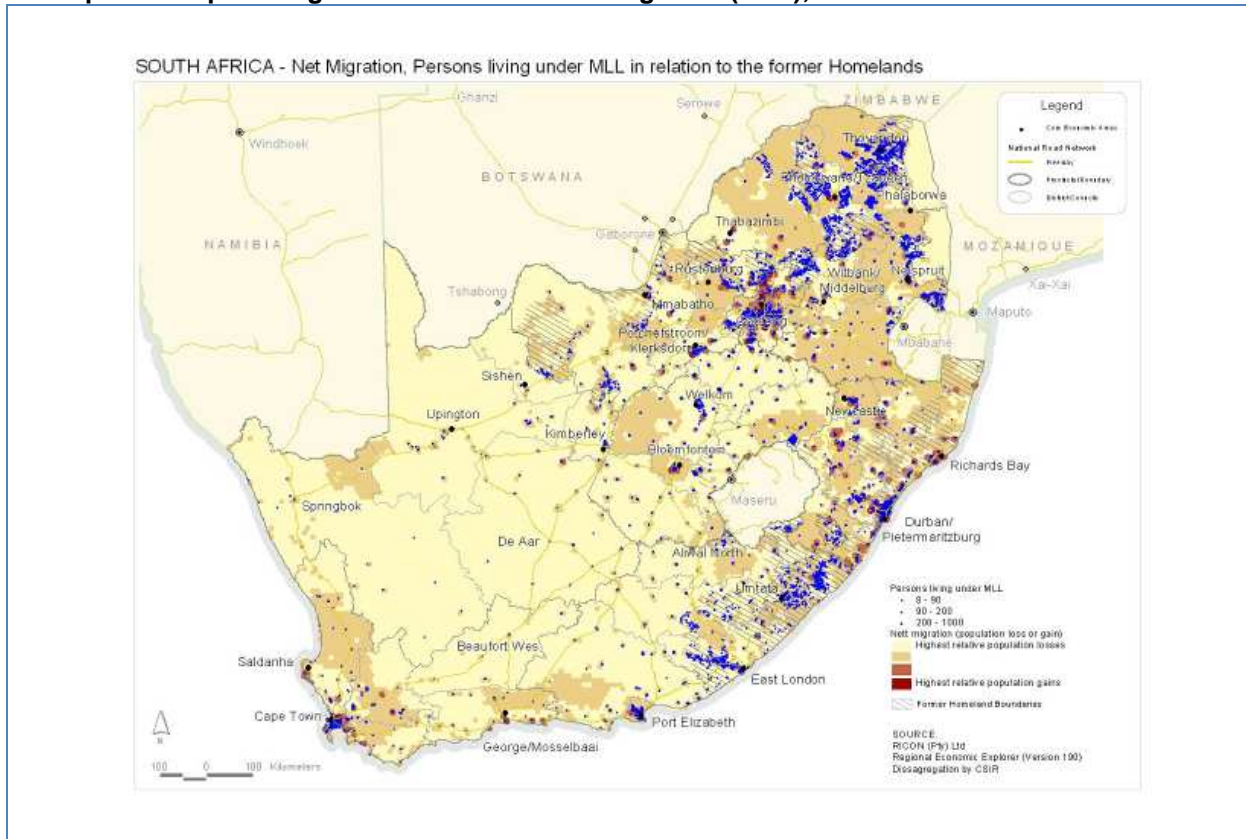
These trends signify a change in the demographic profile, not only of city regions, cities and big towns, but also in that of inland districts within the Eastern Cape and Northern KwaZulu-Natal inland areas and central regions. The analysis suggests that city-region areas are attracting and housing increasing numbers of the youth, the biggest and most highly skilled portion of the formal and informal labour market, as well as the biggest number of those that are unskilled, economically inactive and, most probably, those in search of livelihood opportunities. A significant change seems to be taking place in the profile of districts/regions with traditionally high numbers of people, poverty and dependency ratios in terms of youth, economically inactive population and grants. These areas (mostly former Bantustan areas with limited economic activity) are characterised by outward migration, and a decline in young population. On the other hand, an increased concentration of poverty and higher dependency ratios seem to be found in the city-region areas and cities. In terms of racial distribution of the population, the analysis suggests significant increases in the urban Black population, and especially increases of the Black population in Gauteng and the other coastal city regions.

A stark reality (see Annexure A) is the high percentages of people within the low-income category in an analysis of personal income data (according to categories and data from Stats SA as provide by Quantec – given the limitation that it is only available in comparable format for 2001 and 2007 as 1996 used different personal income categories⁹). It is evident that over 90% of the population in Limpopo and Eastern Cape provinces fall within the 'Low-Income' category. Nationally, over 41% of all low-income people are living in KwaZulu-Natal and Gauteng provinces. Gauteng is a province of extremes with nearly 50% of all high-income people also living in that province (this equates to almost 8% of Gauteng's population being in the high-income category). The City of Johannesburg has over 20% of South Africa's high-income people, almost 8% of its low-income people and over 11% of its medium-income people (see Annexure F). The six metropolitan areas between them have almost 34% of the low-income people within them and 68% of high-income people. Districts that have over 90% of their populations in the 'Low-Income' category are: Amatole, Ehlanzeni and Capricorn (district that respectively house East London, Nelspruit and Polokwane city areas, as well as large densely settled rural areas), as well as O.R. Tambo, Mopani, Greater Sekhukune and Uthungulu (Annexure A).

In an analysis, using minimum living level as poverty indicator (as used in the NSDP, 2006) of the 2004 figures (CSIR, GAP1), it seems that the areas with the strong concentrations of people living below minimum living level (MLL) are in the six metro areas and cities, large towns on the major national road grid and the densely settled rural (former Bantustan) areas (see Annexure B). From this analysis it is evident that the poor are located predominantly in the north and eastern parts of the country although there is also a concentration of people below MLL in Cape Town metropolitan area and in its neighbouring areas.

⁹ In this definition of personal income, low income is 0-R38 400 per year, medium income is R38 401-R153 600 per year and high income is above R153 601 per year.

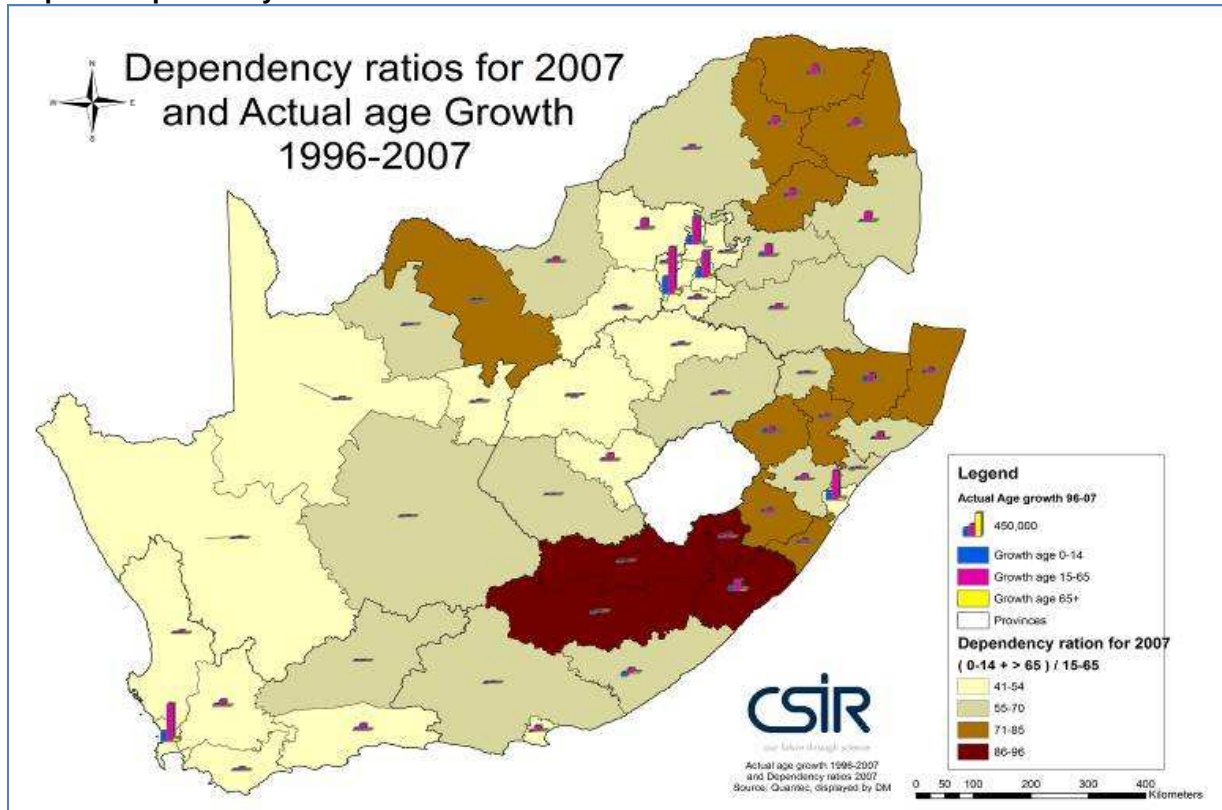
Map A5: People living under the minimum living level (MLL), 2004



In the NSDP 2006 (p35) there is a reflection on MLL in the light of unemployment levels and it is evident that Gauteng has more or less the same number of unemployed persons as the Eastern Cape and KwaZulu-Natal but a much lower number of people living below MLL. KwaZulu-Natal has approximately 5.3 million people below MLL and the Eastern Cape has 4.8 million people below MLL whereas Gauteng has 2.8 million people below MLL (see Map A5 and Annexure B). This indicates that urban concentrations, such as Gauteng, have more opportunities outside the formal economy and a higher absorption capacity of those not employed in the formal economy than rural areas (Annexure B).

In an analysis of the poverty gap as estimated for 2004 (CSIR, GAP1; NSDP 2006), major towns such as Thohoyandou, Ulundi and Mmbatho (in former Bantustan areas) stood out as areas where a significant poverty gap is evident (Annexure B). The Eastern Cape (former Transkei and Ciskei areas) also stood out as areas where the income of a large numbers of households was significantly below the poverty line. Due to unavailability of household income trends, the 2004 analysis as set out in the NSDP has not been updated for 2007 in this report. Dependency ratios (as calculated of StatsSA from Quantec) seem to have generally been declining during the period 1996-2007, which means there are less dependents (0-14 years and 65+ years) depending on economically active population – generally a sign of economic development and a maturing demographic profile. Nationally the dependency ratio has gone down from 64% to 57% during this period (see Annexure B and Map A6).

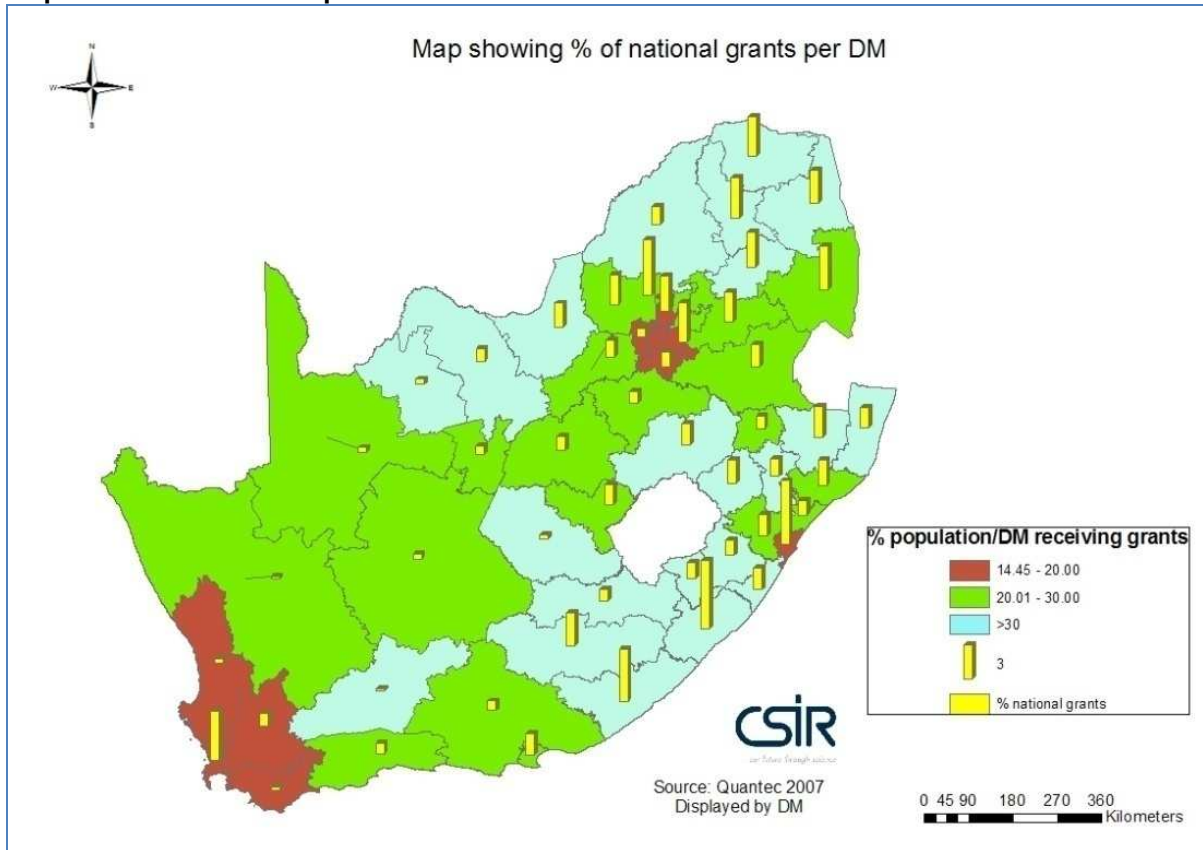
Map A6: Dependency Ratios and Total Growth 2007



In Gauteng the dependency ratio declined significantly between 1996 and 2001 but then increased again between 2001 and 2007. This raises a question of whether this is a sign of a trend of more youthful population (0-14) also moving towards the metro areas whereas in the past the young people tended to stay in the rural areas? In the Eastern Cape and Limpopo during the year 2007, still more than 70% of the provincial population were dependents (Stats SA from Quantec, see Annexures A, B and F).

Many of the poor rural districts are in the position where within 2007 it seemed that between 25 and 30% of their population were grants-dependent, with Chris Hani, O.R. Tambo and Umzinyathi districts having over 30% grant dependency rates (Stats SA Community Survey 2007, Annexure B). The main grant receiving areas (e.g. those receiving the biggest share of the national social grant allocation) are the city regions on the one hand and the poorest, very populous and densely settled districts in the country (such as O.R. Tambo, Amatole and Sekhukhune) on the other hand (see Annexure B). Even though the metropolitan areas do not have as large percentages of their populations receiving Child Support grants as some of the more populous district (about 15% or less) – in absolute numbers and as percentages of the national Child Care grant recipients they are still fairly significant (Stats SA Community Survey, 2007) as evident in Map A7 (also see Annexure B).

Map A7: National Grants per District and Metro Area 2007



An analysis of the proportion of the different grants distributed nationally reveals that large proportions of the grants are allocated to the metropolitan areas with the coastal areas receiving a significant proportion as well as the Gauteng and Limpopo districts receiving large proportions of the national allocation of grants (Annexure B). Grants are generally being targeted at where the poor people are. It is clear, though, that in the metropolitan areas and cities they are but one of a number of initiatives addressing poverty. Other initiatives are employment creation and multiple income strategies of households which include informal economic activities and better access to education and health services. In the formal Bantustan areas and some rural areas, however, they are often one of the sole ways of 'addressing' poverty. This contention is supported by the very high grant dependency ratios in many of the latter areas (Annexure B).

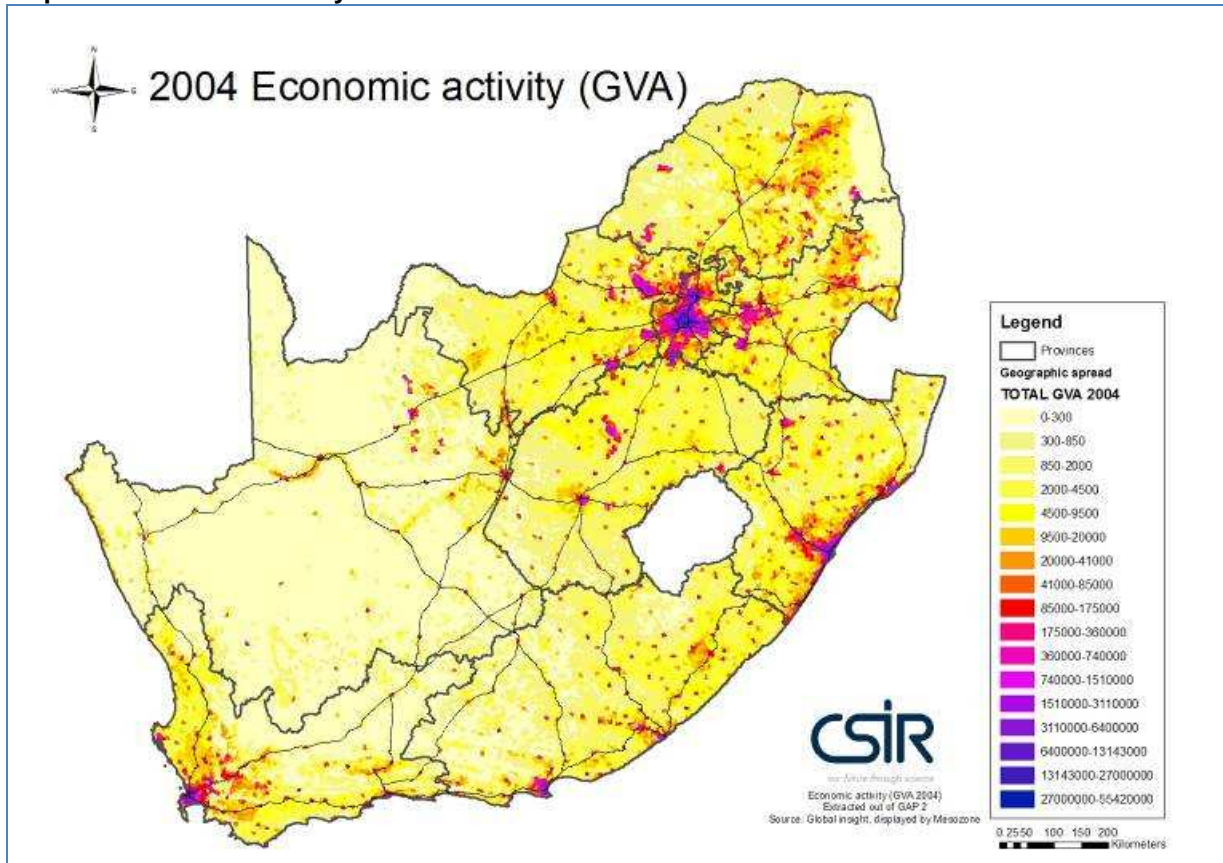
c. Economic Growth and Decline

The growth of the South African economy, increased access to job opportunities, as well as diversification and innovation are largely carried by the city-region areas. Economic decline is mostly evident in some traditionally resource-base economies, associated often with a decline and a scaling down of the mining industry and jobs (such as the areas surrounding Klerksdorp). Places of high economic growth over the last decade include small niche towns (due to specific investments or relative small growth from a low base, e.g. the town of Prince Albert). Cities and metropolitan areas not only made a significant contribution to economic growth due to their size, but also due to sustained levels of relatively high growth rates over the last decade. Growth is not always associated with job growth (such as in the Cape Town city-region area). Some economies are largely dependent on government services (for example big towns such as Thohoyandou and Mthata). In such towns and areas, often located in former Bantustan areas, as well as in city-region areas, the impact of household income in creating economic and livelihood opportunities in regions with high numbers of population is evident.

An analysis of the spatial distribution of economic activity (CSIR, GAP2) based on 2004 GVA as indicator (as also used in the NSDP), illustrates the significant role that the northern and southern parts, as well as key coastal towns and cities play in the economy of the country (Annexure C). From this analysis, and even more clearly from an analysis where economic activity as manifested in specific areas are compared (utilising standard deviation analysis), the significant role of city regions, metro

areas and cities are evident. The role that the wide range of cities and towns (especially those on significant access routes and corridors and/or those that fulfil significant services roles in their hinterlands) play in the economy seems significant. If GVA is viewed as indicator not only of current but of future economic activity; this spatial manifestation seems to become even more significant (Annexure C).

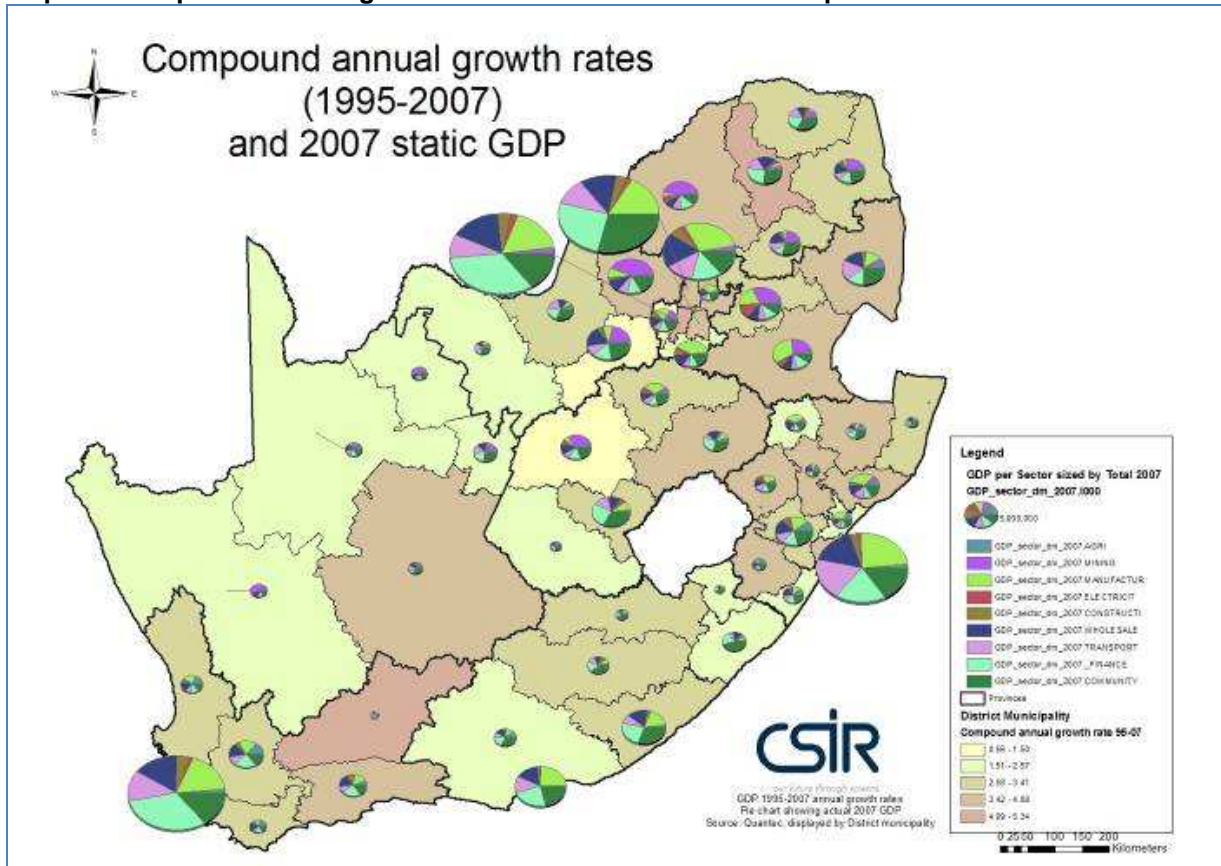
Map A8: Economic Activity 2004



The metro and city-based economies, not only have a key impact on current distribution and probable future growth of the national economy (see the 2004 GVA brake down on Map A8) as well as the GDP for 2007 (Static data based on StatsSA data from Quantec), they are also much more diverse than the economies in other regions. The dependency of some of the other regional economies on either resource economies or community services economies is also evident (2007 Sector GDP calculated using StatsSA from Quantec data – see Map A9 and district specific analysis in Annexure C).

An example of the above is the prominent role that the financial sector plays in the economy of the Cities of Johannesburg and Cape Town. The significance of the primary sectors such as mining and agriculture in district areas such as Bojanala (Rustenburg), Ekangala (Witbank/Middelburg) and Govan Mbeki (Secunda) is also evident (See Annexure C). The significance of the community and service sectors in the City of Tshwane (with concentration of government services) and districts such as Amatole, Ehlanzeni, Vhembe, Mopani, Capricon and Motheo is also evident. The latter districts are all characterised by large towns and secondary cities within high density areas where significant portions of the areas have been part of former Bantustan areas and host large numbers of people with less prominent and less diverse economic activity (Annexure C).

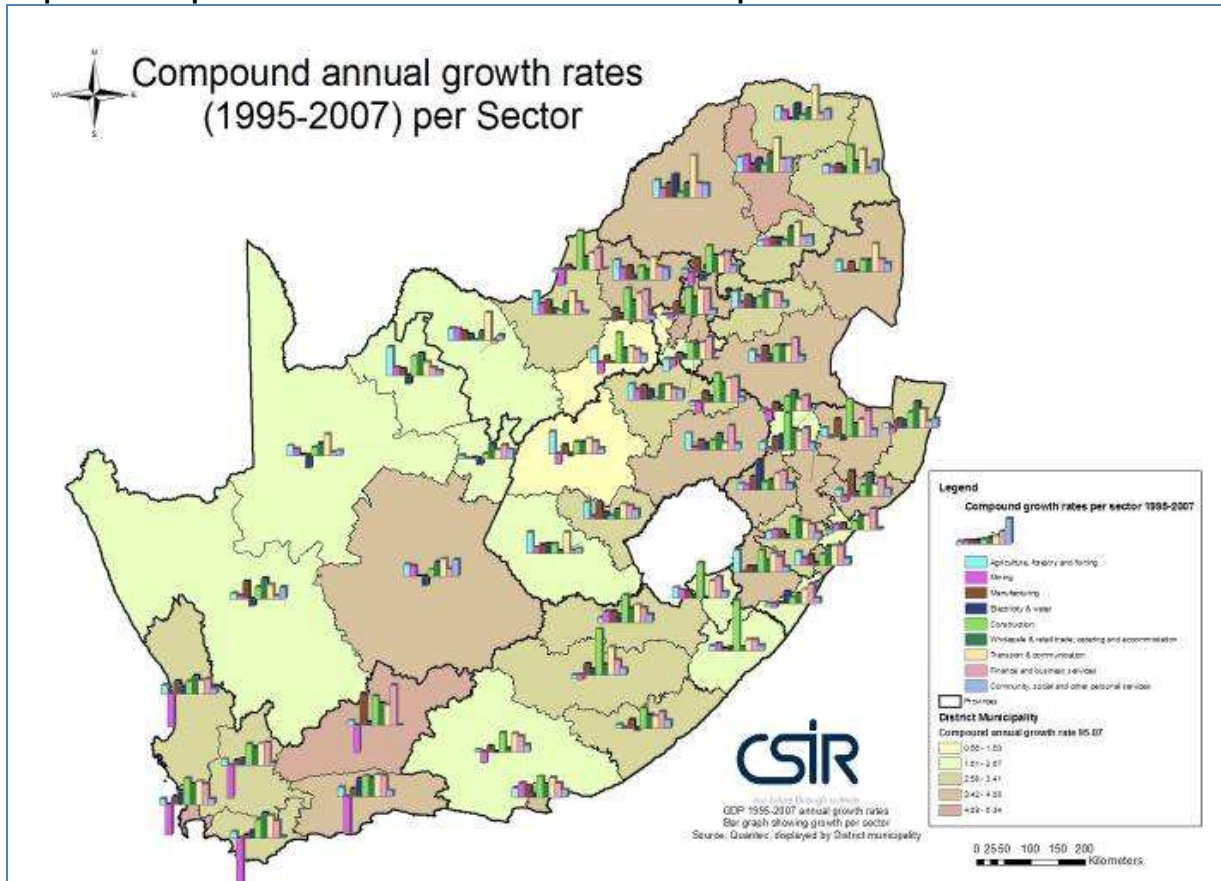
Map A9: Compound annual growth rates for 1995-2007 and GDP per sector 2007



Certain towns and their hinterlands are playing key roles in terms of natural resources for mining and agricultural related issues. Services, infrastructure and quality in life in these centres are quite critical to enable diversifying the economies and benefit from related manufacturing, for example. Together with the importance of, for example, pristine nature areas, certain small and medium towns, as well as the cities and city regions play a key part in the tourism industry (Annexure C). Together with the city regions and metros, towns playing a regional services role but cities also seem to play crucial roles in local economies. It should be noted that, especially where these towns are located in densely populated hinterlands, the economies are largely carried by the community services sector. Towns fulfilling a regional service centres role and small towns on key corridors and access routes also seem to benefit from that economically (Annexure C).

The role of various regions, and especially settlements, in sustained and shared growth is quite evident. For the national and respective regional economies to be sustained (especially taking South Africa's dependency on oil imports into account), it is crucial that South Africa 1) remains part of the international economy, as well as 2) develop sustainable regional economies. The city regions and metro areas are almost solely responsible for international trade as measured through exports and imports (see Annexure C). Other crucial parts of the international economy (often mentioned as at least relatively employment intensive) are the resource economy and tourism – supported by specific regions and towns in the country. On the other hand, the sustainable development and critical role and contribution of strong towns/centres as centres playing a key role in regional service provision, trade and agriculture. Comparing municipal areas in terms of their growth rates over the period 1995-2007 (Stats SA from Quantec, 2007), clearly illustrates the contribution of regions that were growing significantly and did that from a high base originally (Annexure C). These are typically the metro areas, city regions and cities and are the places that made a significant contribution to the economic growth in the country over this period (see Map A10).

Map A10: Compound Annual Growth Rates for 1995-2007 per sector



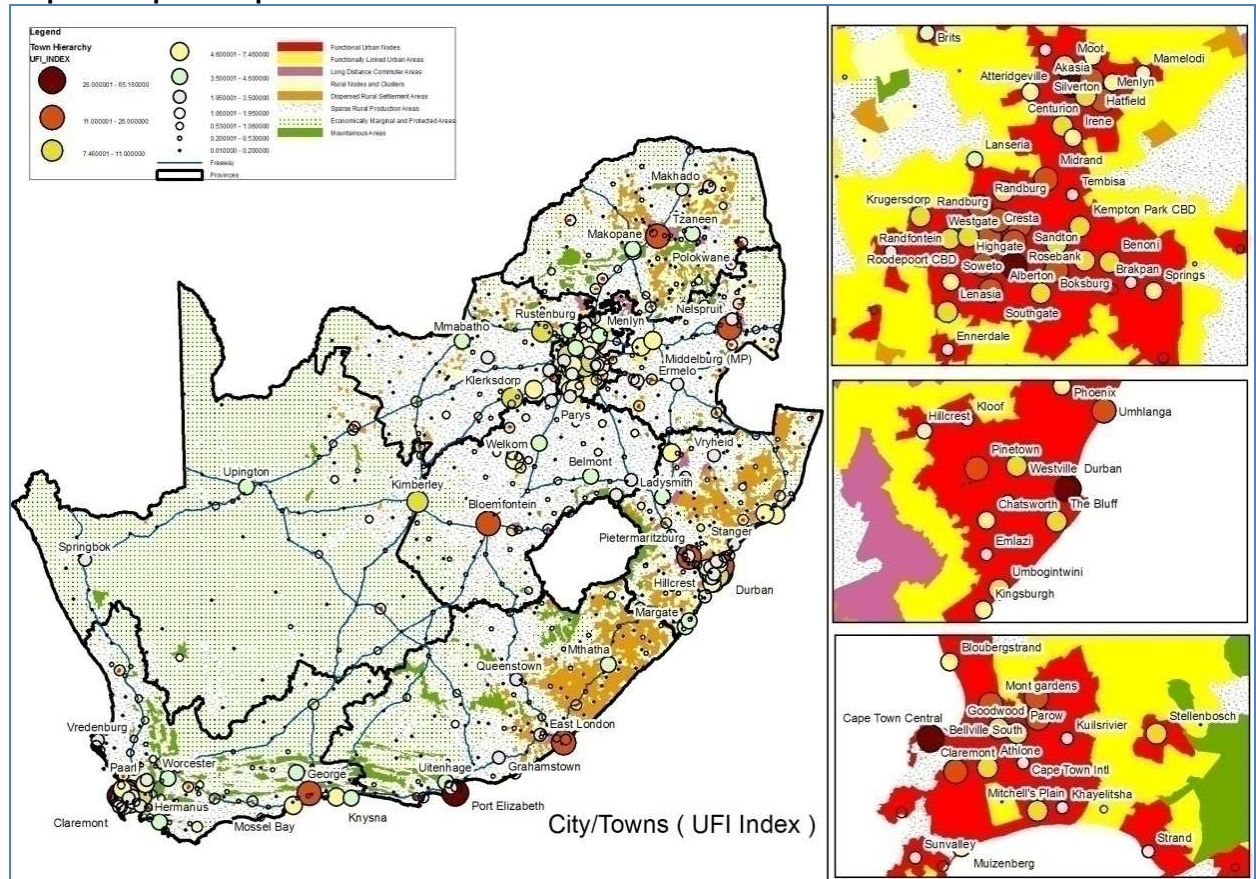
The analysis also highlights the places that are growing, even though from quite a low economic base (Annexure C). The importance of places actually improving economic growth even though it does not make a national significant impact is obviously critically important for access to markets, jobs and increased livelihood opportunities within specific regions.

Settlements play varying roles in terms of their service function (as calculated in this analysis by using the Urban Functional Index¹⁰). The service function differ substantially between various nodes – with the highest order service functions being provided by nodes within metropolitan areas such as Johannesburg, Pretoria (Tshwane), Durban (eThekweni), Cape Town and Port Elizabeth (Nelson Mandela Metro). Other significant service centres are places such as Polokwane, Nelspruit, Bloemfontein, East London, George and then Kimberley, Klerksdorp, Rustenburg and nodes within major metro areas (Annexure C and Map A11).

It is evident that these service centres are also places that form key nodes/access points on the South African road network (see accessibility index ran on a 40 minute proximity on the road network from these centres as on Map A13). Often service centres such as Upington and Kimberley in sparsely populated areas and Mthata in densely populated hinterlands (often former Bantustan areas) have quite high service indexes due to the important function they fulfil in their hinterlands – economically as well as in terms of public services.

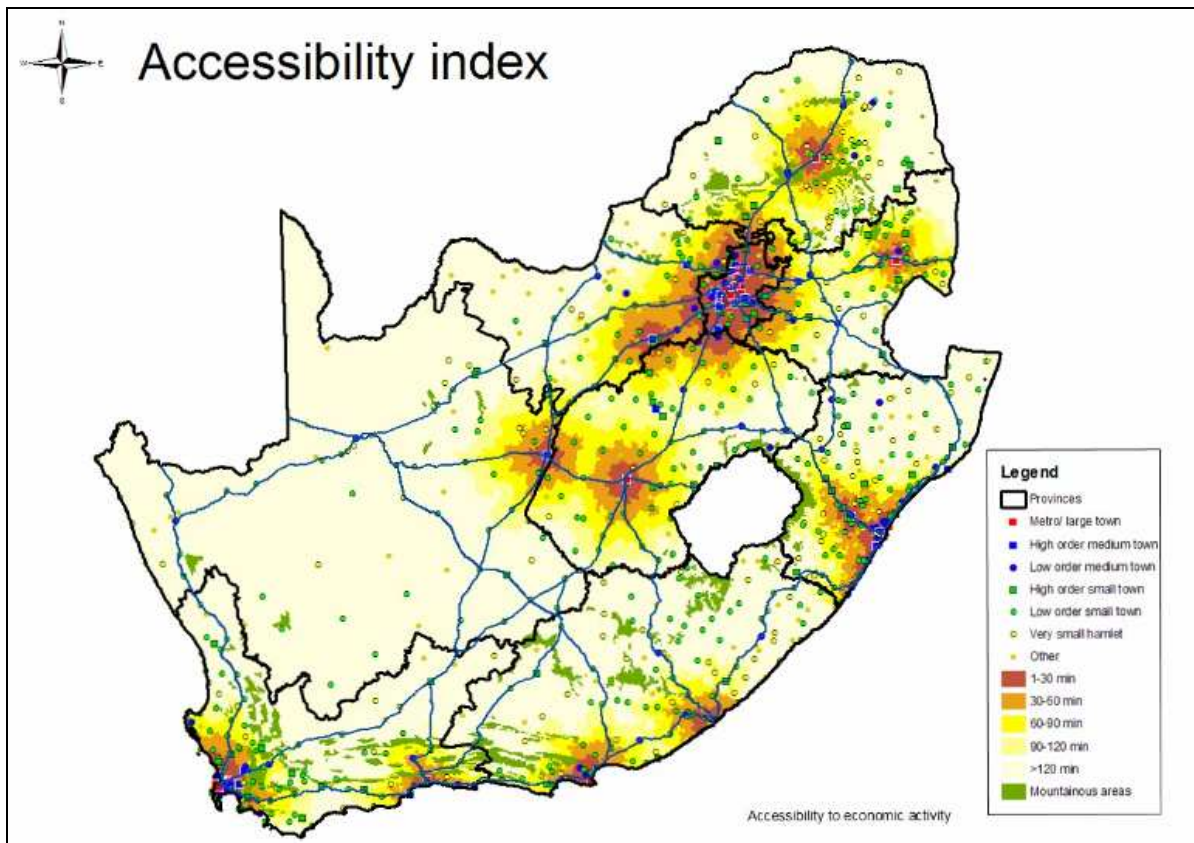
¹⁰ UFI index is used by Stats SA, calculating the amount and order of government and economic services in a particular area, and in relation to other areas. The UFI thus provides an indication of the service role that settlements play in their hinterland.

Map A11: Spatial representation of Urban Functional Index of various Metro Nodes and Towns

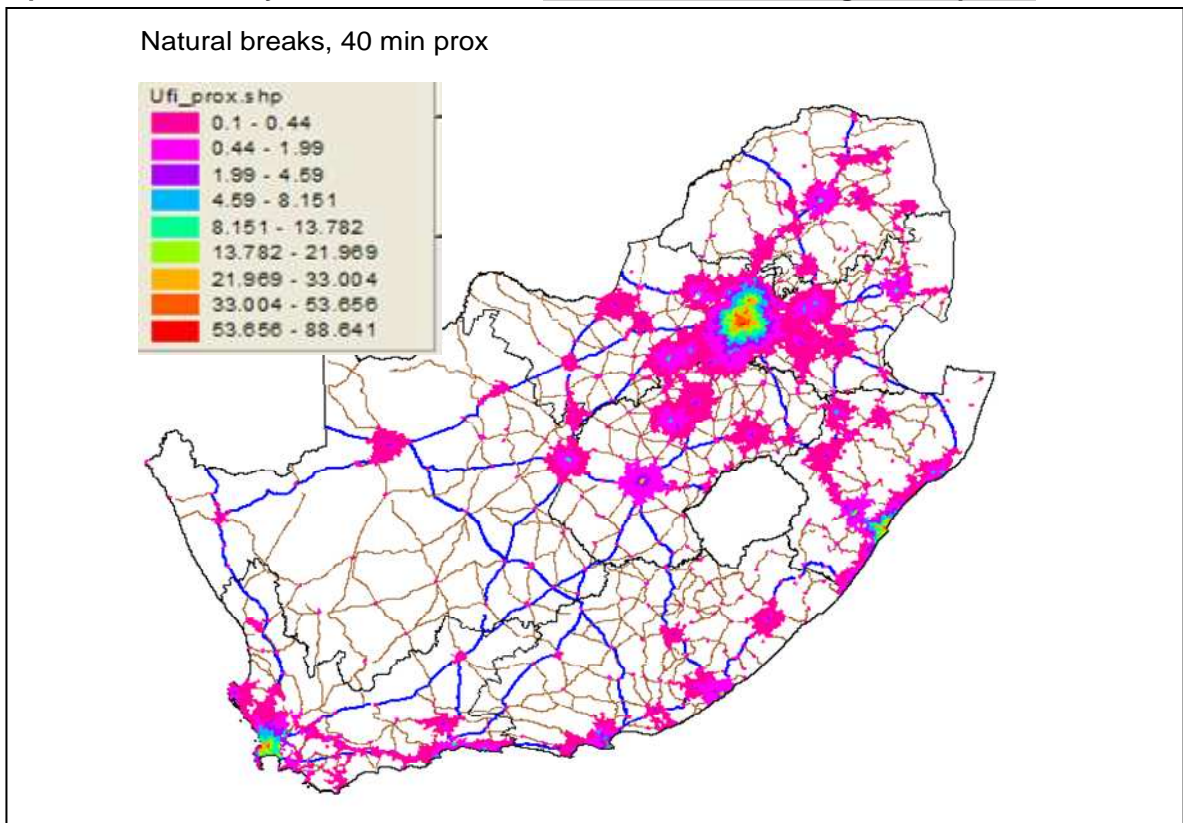


One of the key factors influencing the space economy seems to be accessibility. Accessibility to economic opportunities for the purpose of this project has been calculated within two ways (Annexure C). On the one hand accessibility to economic activities has been calculated in terms of higher proximity to economic concentrations (calculated as concentrations to GVA and making use of the mesoframe data layer presented by GAP2). On the other hand the accessibility is also directly related to the location of significant metropolitan areas, centres/nodes and towns (Map A12). Relating the accessibility trends with that of migration (see Trend 1) it seems as if there is a strong correlation between accessibility and whether towns play a significant role as attractors for the economy and population. Accessibility has also been calculated as access to services (both market and government based) through utilising different intervals of access to places with certain service indicators (based on the UFI index from STATS SA, see Annexure C and the accessibility analysis to service centres as done by Zietsman, 2008 – Map A14). The role of medium-sized towns such as Upington and Mafikeng in terms of access to services can be noted (even though not much of a role in terms of access to economic activity)..

Map A12: Accessibility to Economic Activity

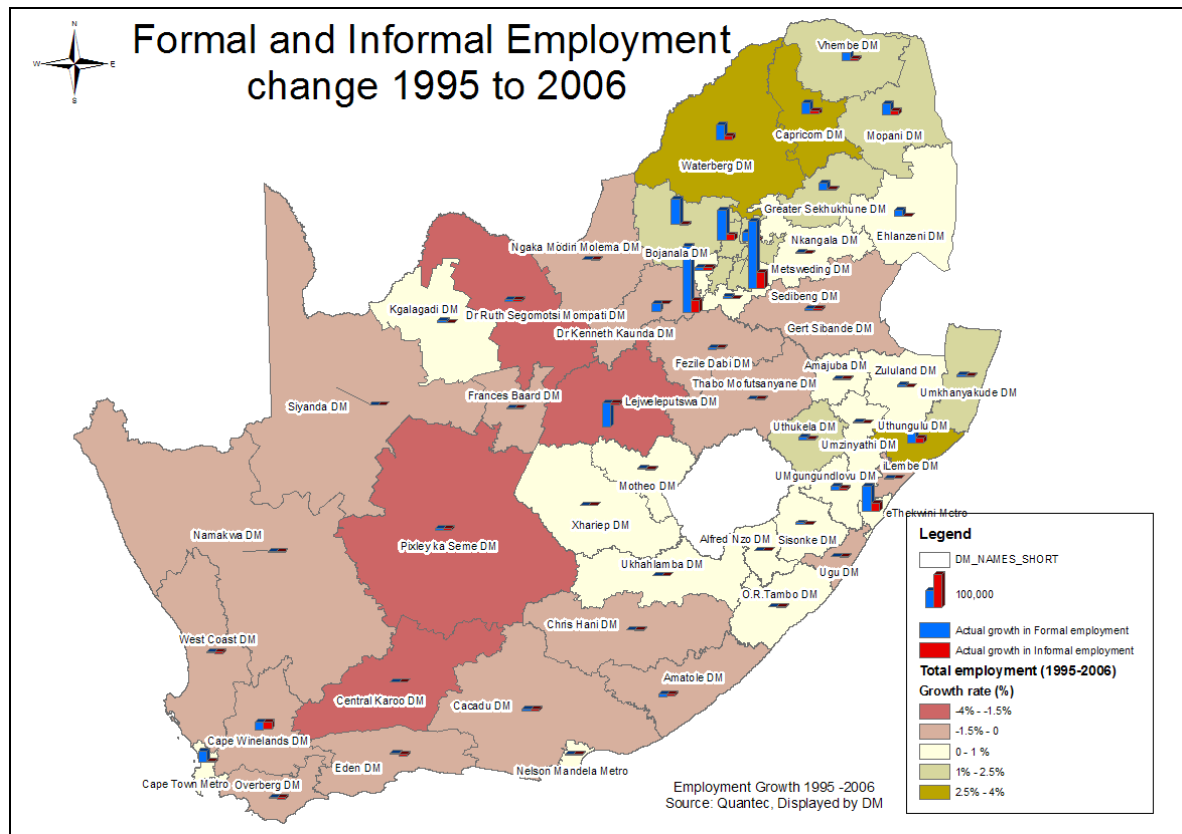


Map A13: Accessibility to Services Centres TO BE REPLACED – Legend simplified



Another key trend in the economy is the growth in formal and informal employment from 1995-2006 within the city-region areas and northern parts of the country (Quantec – see Annexure C). Together herewith the stagnation of employment in the Northern Cape districts, Eastern Cape districts and many of the North West and KwaZulu-Natal districts (where in the last two provinces there are even districts with negative growth/declining employment) are also stark during the period 1995-2006 (Quantec). The trend reflecting the ‘hollowing out’ trend evident within the migration figures. In absolute numbers the growth in employment during this period is obviously provided through the metropolitan areas (see Map A14).

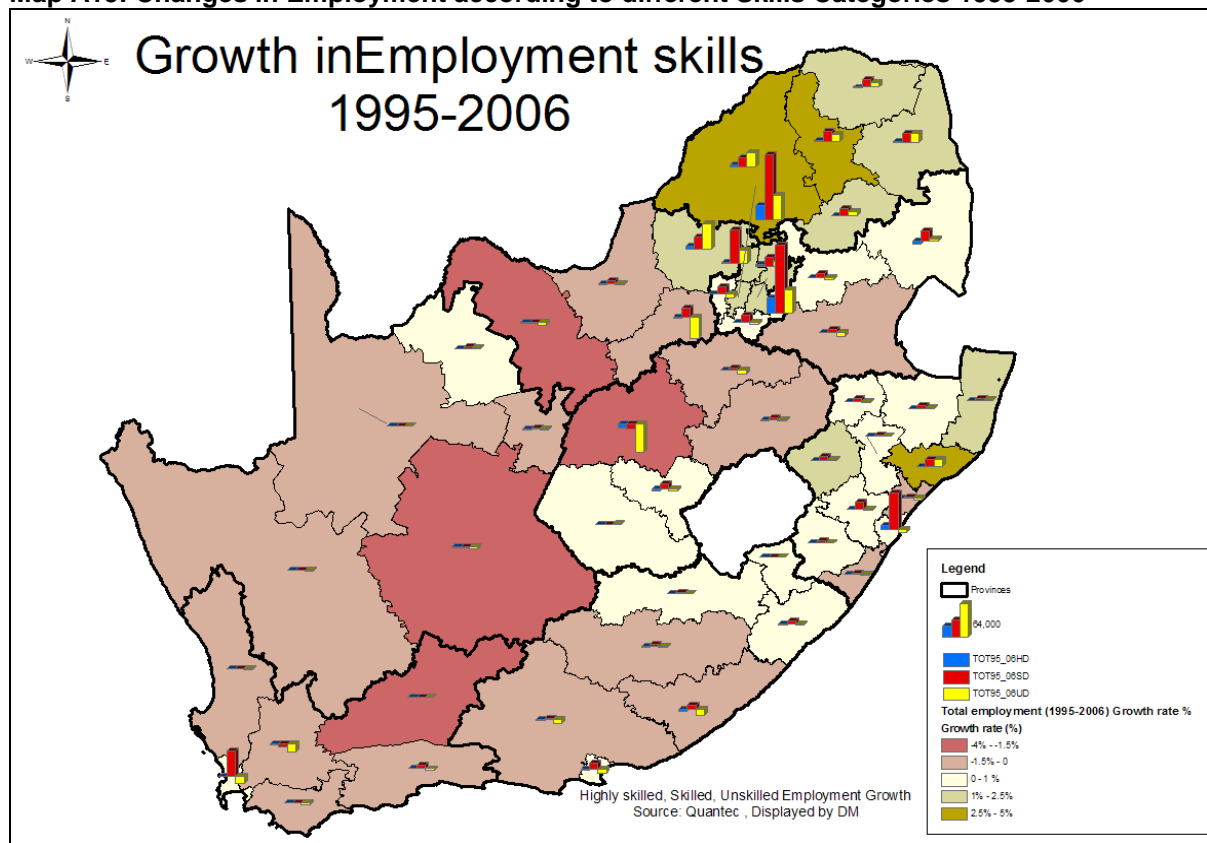
Map A14: Formal and Informal Employment change 1995-2006



The huge impact and spatial distribution of growth in employment skills is evident in the analysis of growth in employment for the different skills categories for the period 1995-2006 (Quantec – see Map A15 and Annexure C). Once again the trend is quite clear that employment is growing within the city regions (metros) and city areas (relevant districts) in the unskilled, skilled and highly skilled employment categories. Evident is the decline in this period (1995-2006) of the unskilled employment category in a number of district areas, particularly those districts in the central and southern parts of the country – Northern Cape, Free State and Eastern Cape, in many cases associated with a decline in mining industry jobs and out-migration of the economically active population (Annexure C).

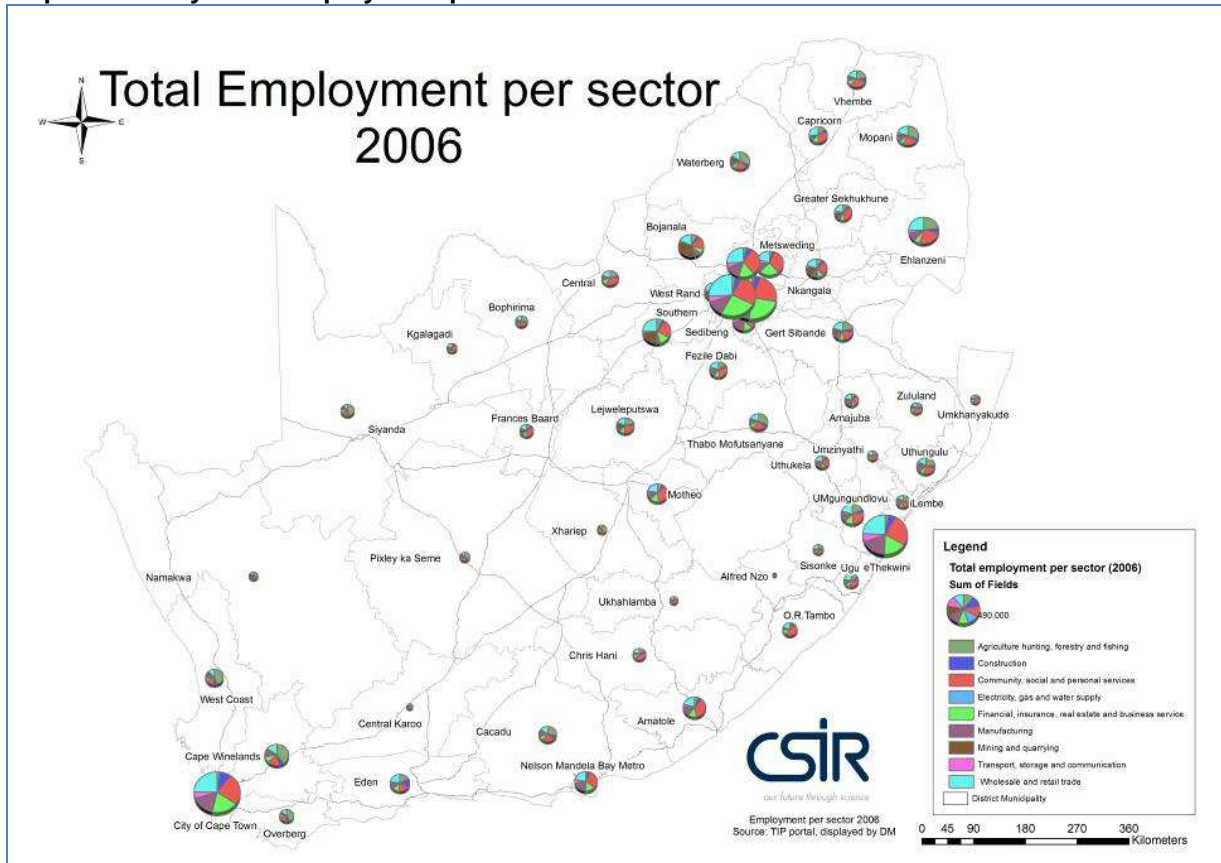
The analysis of employment per sector (Quantec, 2006 – see Annexure C and Map A16) indicates the diversity and highly skilled sector employment (tertiary sector activities) in the metro and city-region areas, as well as in districts with cities such as Bloemfontein, Polokwane, East-London and Nelspruit. This analysis also indicates the large amount of employment in community services sectors in districts where there are large numbers of people in relative low-economic base such as the Eastern Cape and KwaZulu-Natal districts marked by densely settled rural areas. The contribution of employment in mining in regions such as Bojanala (Rustenburg) and in agriculture in regions such as Waterberg is also evident. The 2006 analysis (Quantec) of employment per sector also indicates the low numbers of employment in the central parts of the country with relative low levels of population.

Map A15: Changes in Employment according to different Skills Categories 1995-2006



Exports figures for 2007 (see Annexure C analysis based on Stats SA figures from Quantec) indicates that the city-region areas are responsible for more than 70% of all exports. Of this figure, 40% alone is generated by the City of Johannesburg and more than 33% in other metro and city-region district municipalities. Other districts with significant contributions to exports, according to this data, were Bojanala (6%), Uthungulu (4%), Cacadu (2.5%), as well as Frances Baard, Cape Winelands and UMgungundlovu (the latter three districts each producing more than 1% of national exports). In terms of imports, the 2007 figures (Stats SA from Quantec) indicates that 31% of all imports was done by the City of Johannesburg, 21% by the City of Cape Town, 15% by the eThekweni metropolitan area and more than 25% by other metropolitan and district municipality areas within city-region areas.

Map A16: Analysis of Employment per Sector 2006



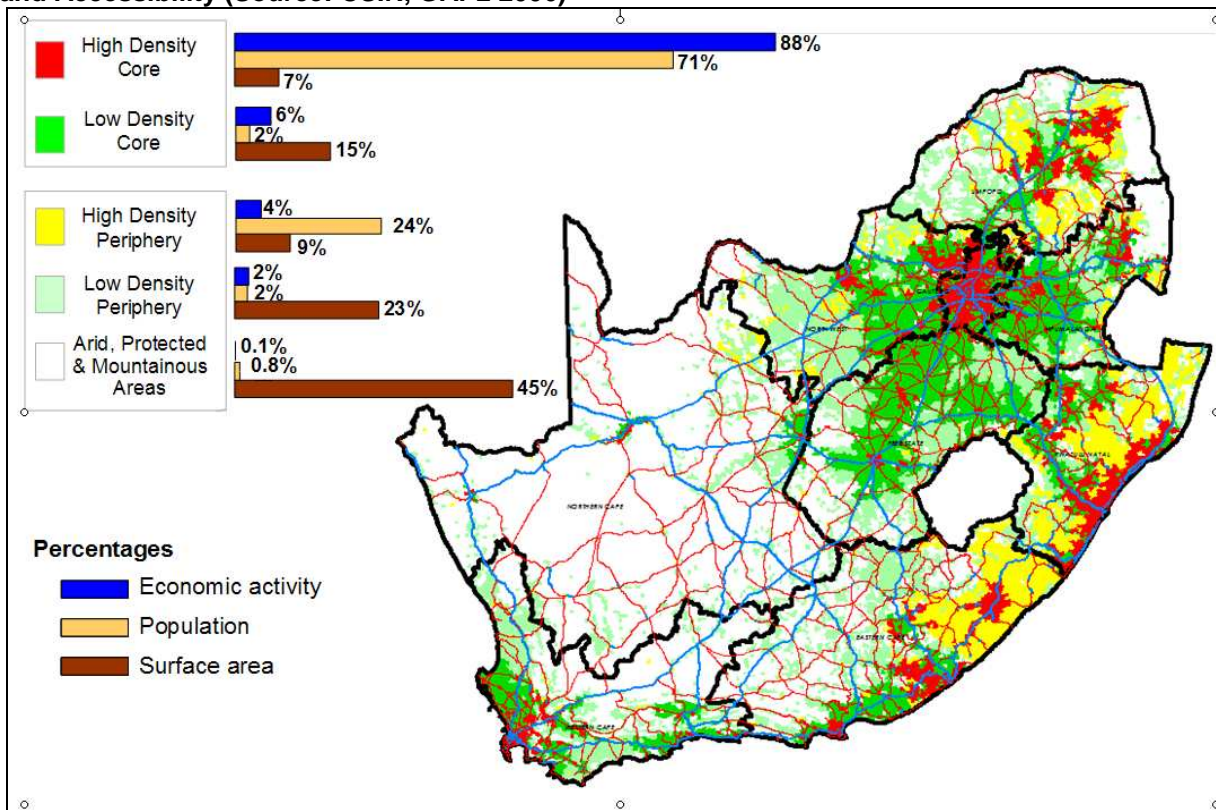
d. Increased Concentration and Agglomeration

Trends of increased spatial concentration and agglomeration are evident. The analysis highlights the importance of access to concentrations of economic activities/opportunities, livelihoods and public services. It also illustrated that different regions and spaces, fulfilling diverse roles and functions, form part of an interconnected system of settlements and regions.

The South African landscape bears evidence of strongly concentrated population distribution. Based on the 2004 GAP data, evidence suggests that highly accessible and densely populated areas (red on Map A17), the areas in close proximity of cities and towns which play significant roles as regional services centres, house 71% of the population on only 7% of the land area. High density areas, usually low in relative accessibility (yellow on the accompanying A17) house about 24% of the population on 9% of the land area (see Annexure C).

The latest 2007 data releases (Stats SA, Quantec) confirms the above analysis concentration, with the highest concentration of population being located in the six metropolitan areas (Annexure A). Cumulatively the metropolitan areas contained 35% of the national population within 2007. When considering population in the broader functional city-regional areas of Gauteng, Cape Town, eThekweni and Nelson Mandela, as well as in the cities of Polokwane, Bloemfontein, East London, Nelspruit and Pietermaritzburg, the figure raises to more than 44% (Annexure A).

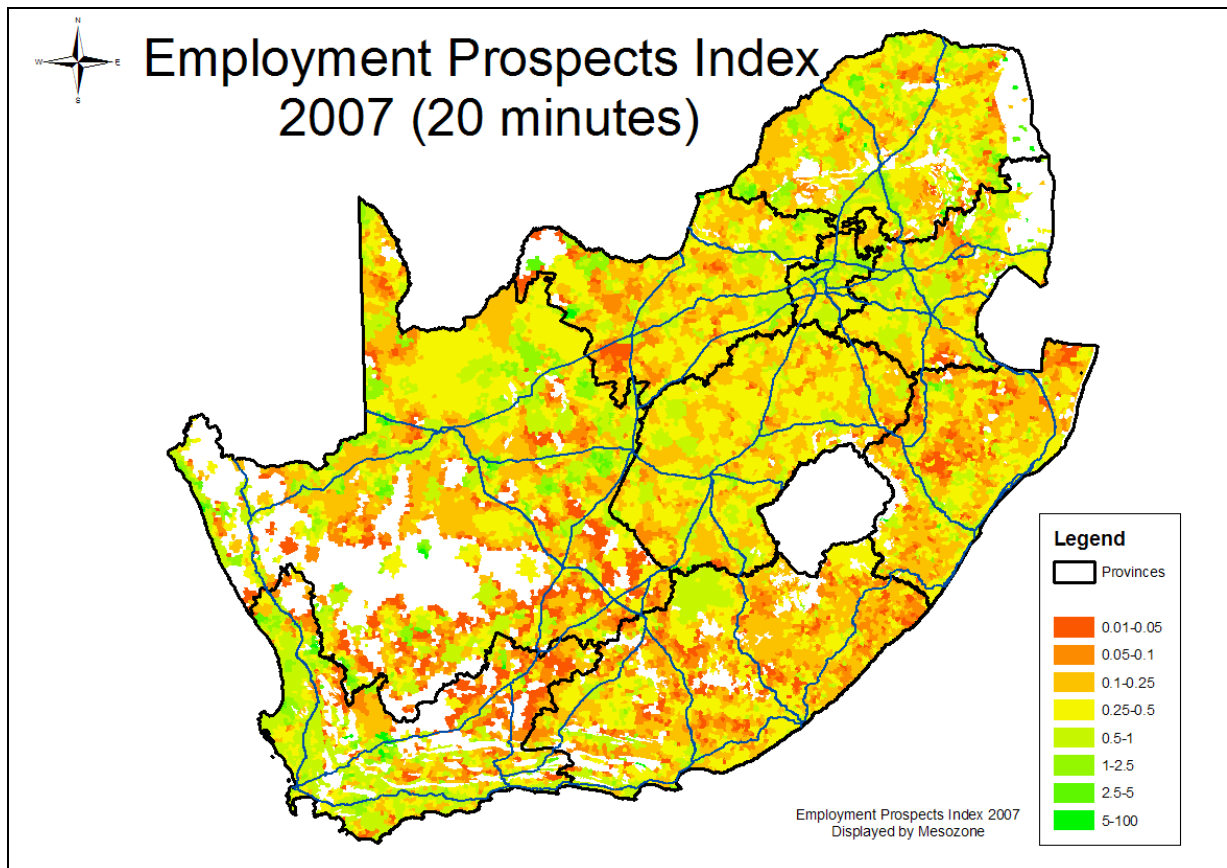
Map A17: The South African Space Economy Analysed in terms of Population Concentration and Accessibility (Source: CSIR, GAP2 2006)



There are significant concentrations of population along the east coast in the Eastern Cape district municipalities of O.R. Tambo (around Umtata) and Amatole (around East London) which cover former Bantustan areas. Other significant population concentrations are found around Nelspruit and Bushbuckridge, Witbank and Middelburg, Rustenburg and Polokwane. Vhembe, the northern most district of Limpopo province, has significant population concentrations in the former Bantustan area of Thohoyandou and in the town of Musina, Greater Sekhukune and Mopani (Phalaborwa and Tzaneen) in Limpopo and the area around the City of Pietermaritzburg, Zululand DM (with Ulundi as a population concentration), and Uthungulu, centred on Richards Bay and Empangeni in KwaZulu-Natal also house significant proportions of the national population. Based on a more nuanced spatial analysis the concentration of settlement and economic activity and accessibility to livelihood opportunities is evident. Regardless of formal urban or rural categories, the reality is that economic activity and population settlement are largely concentrated in the same spaces making accessibility to these spaces critical. It also illustrates the South African reality of high density peripheral development where large numbers of people are settled with limited access to major formal and informal economic activity.

Map A18 provides an indication of an employment prospects index developed for South Africa by relating total employment and the economically active population with each other (CSIR, 2007: Economically Active people v/s Employment 2007). The spatial illustration of access to economic activity and livelihoods (jobs and household income) clearly indicating (in bright green) the areas within the city regions, cities and major towns where the employment opportunities are located and actually outweigh the economically active population. These areas, together with smaller towns, obviously become attractors for migration. These figures and images illustrate trends that correspond clearly with those indicated by the migration analysis. The role of the informal economy and service provision as attractors (especially in towns fulfilling a regional service role) should also be kept in mind.

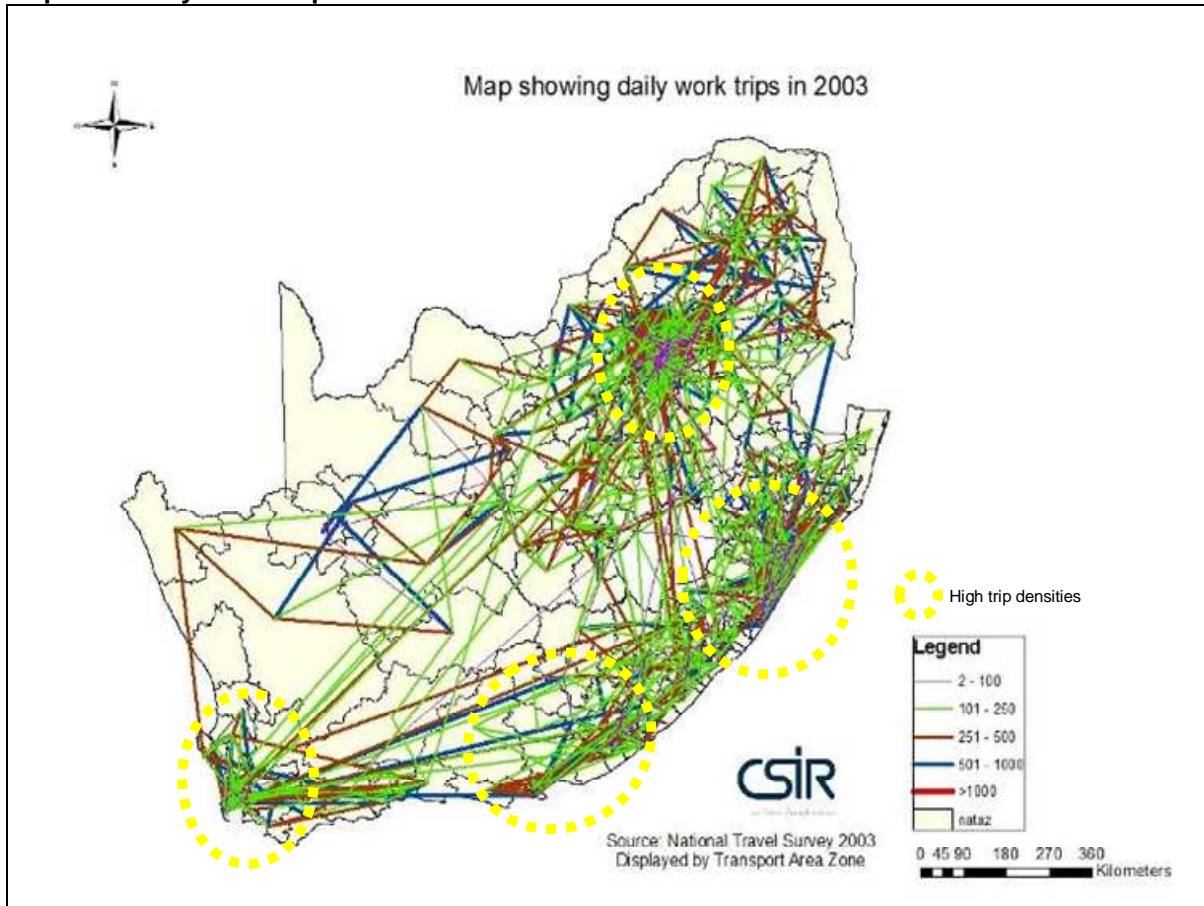
Map A18: Employment Prospects Index 2007



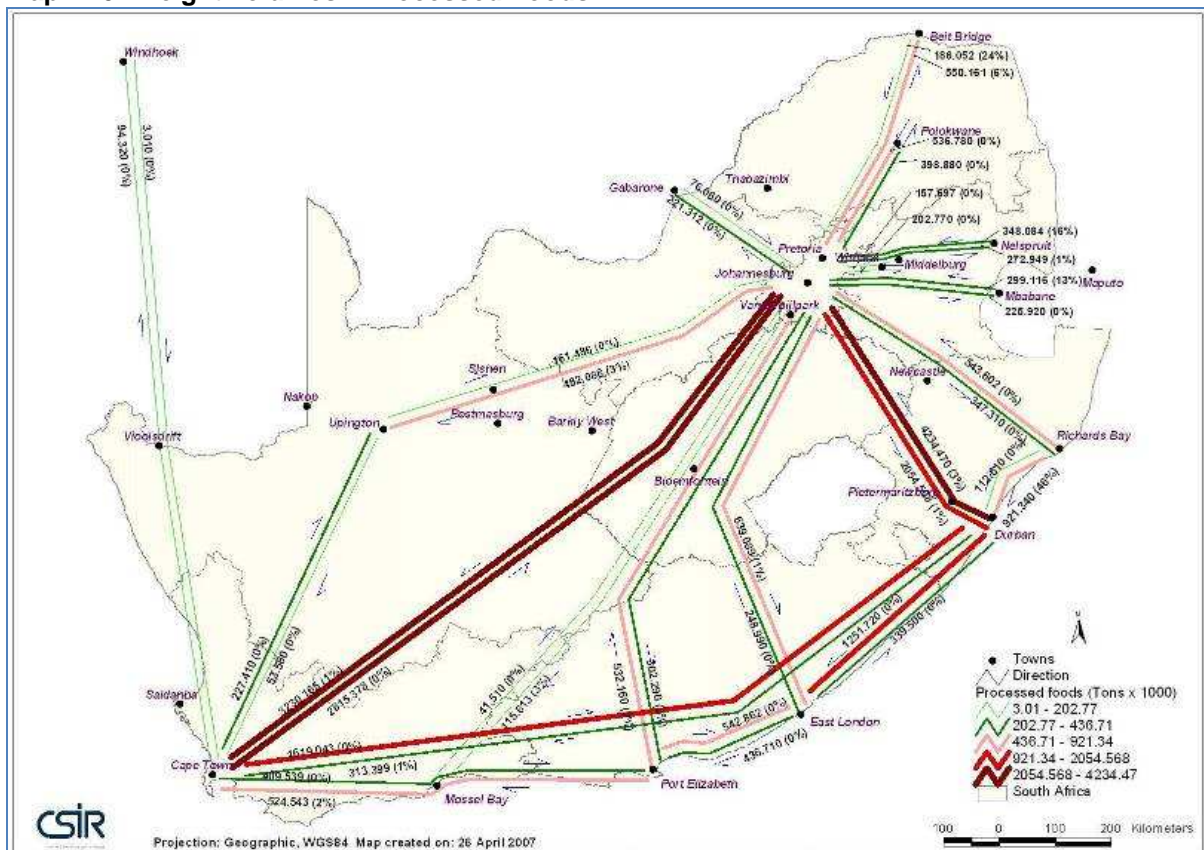
In some ways it is easier to illustrate concentration and static figures, rather than flows and interconnectedness between places. However, some of the ways in which interconnectedness becomes evident (and that could be extended significantly with, for example, institutional network, as well as economic cluster analysis), is an indication of physical movement of people and goods between places in the country. Evident from a very crude illustration of the number of daily work trips occurring in South Africa (based on a CSIR analysis of the 2003 transport zone level data from the National Transport Survey) is the concentration of work trips in the major metros and cities (see Map A19), where the highest congestion levels are indicated (Annexure D). An interesting pattern of interconnectedness emerges also *between* the major metros and between metros and other cities, showing the spread of economic activity through-out the country (National Transport Survey, 2003).

This notion of interconnectedness is also supported by an analysis of the origins and destinations of migrant workers that live elsewhere in South Africa than at their permanent homes (National Transport Survey, 2003) is the extent to which all metros are focal points for migration. Some larger cities like Rustenburg are also significant migratory destinations (see Annexure D). An analysis of freight volumes of processed foods (Map A20) also indicates once again strong interconnections in terms of freight volumes and corridors (Annual State of Logistics Survey, CSIR, 2007). In this case the example is processed foods (excluding beverages), which accounts for 22% of all freight moved on the major corridors. Rail accounts for only 3% of processed food product movement on the major corridors. The major corridors include Cape Town to Gauteng and Durban to Gauteng and 47% of all movement takes place on these two corridors.

Map A19: Daily Work Trips 2003



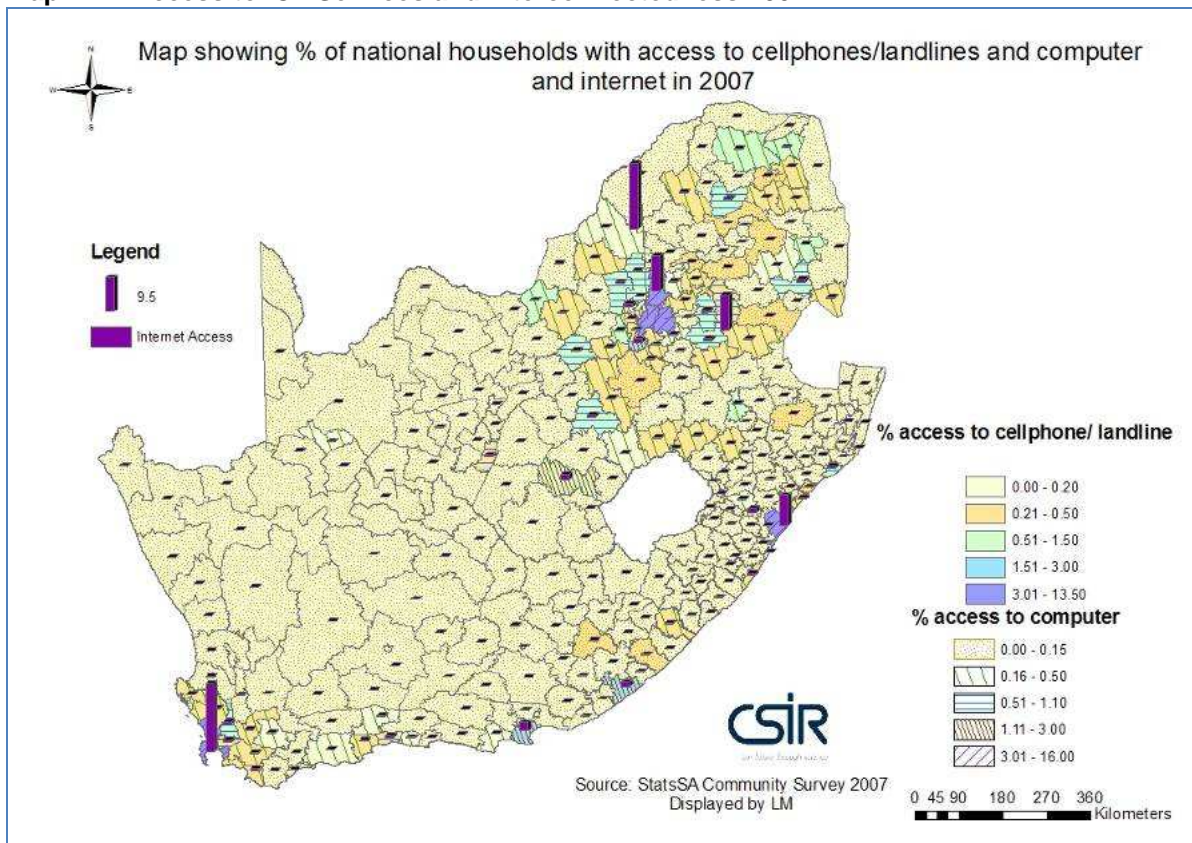
Map A20: Freight volumes – Processed Foods



Where this trends show strong physical movements and connections, it also once again highlights South Africa's much renowned high logistics costs, as well as dependency on well maintained rail, because of the vast hinterlands that need to be covered and strong interdependencies between regions (especially the inland areas and the port cities). The continued dependency on the road network and transportation has huge implications for future energy and economic scenarios (Annexure D).

Another way of exploring interconnectedness is by viewing levels of access to ICT related services (Annexure D). An analysis of 2007 data (Stats SA Household Survey) illustrates that South Africa actually have very low levels of ICT connectedness. The highest connectedness is found in the 38% of South African who had access to landlines/cell phones in 2007 (see Map A21). Only 15% had access to computers and merely 7% access to the internet (Stats SA Household Survey, 2007).

Map A21: Access to ICT Services and Interconnectedness 2007

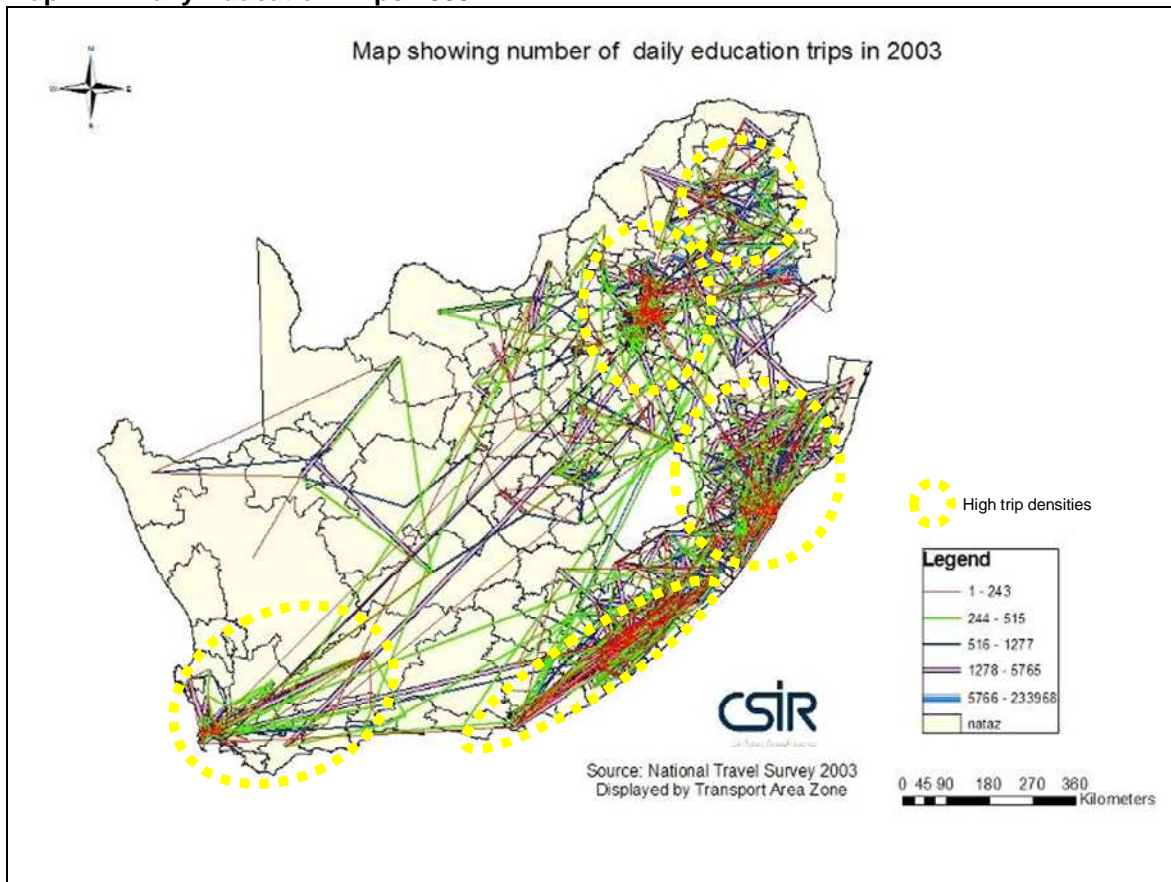


In terms of spatial manifestation the highest access to ICT (in this case illustrated through access to cell phones/landlines and internet in 2007) have been found mostly in the metropolitan and city-region areas, with City of Cape Town substantially higher access than other city regions, and a similar pattern for districts in the Western Cape. Relatively high levels of access to ICT have also been identified in more remote regions with significant service centres, such as Central Karoo and Frances Baard or specific developments, such as the Rustenburg area (Stats SA Household Survey, 2007). The spatial trend might also be compared with that in highly skilled workforce and changes in the labour market. The ICT accessibility highlights the city regions and city areas as places of international and regional connectivity.

Another key interdependency explored as part of the analysis, is the interdependencies between places in terms of accessing public services. One indicator used in the analysis is interconnectedness of education trips. Even though the analysis of education trips could most probably be skewed by sizes of areas that they were captured for in the National Transport Survey (2003), major trends indicate that trip densities are concentrated around areas of high population densities such as the metro areas as well as the high density rural areas of the Eastern Cape, KwaZulu-Natal and Limpopo. TAZ zones are smaller in the metropolitan areas and it can be expected that these areas would reflect movement between zones. In many of the dense rural areas the location of education facilities and need for

transport schemes are reflected (see Map A22). This pattern is not reflected in the sparsely populated areas with large TAZ zones.

Map A22: Daily Education Trips 2003



It could be argued that interdependencies between the network of cities and towns in terms of service functions is also illustrated by the hierarchical nature of the Urban Functional Index (STATS SA) in the way that it provides an indication of the service role that settlements play in their hinterland (see Map A11 and Map A13, as well as Annexure C). As indicated in economic growth trends, the service functions differ substantially between various nodes – with the highest order service functions being provided by nodes within metropolitan areas such as Johannesburg, Pretoria (Tshwane), Durban (eThekweni), Cape Town and Port Elizabeth (Nelson Mandela Metro). Other significant service centres are places such as Polokwane, Nelspruit, Bloemfontein, East London, George and then Kimberley, Klerksdorp, Rustenburg and nodes within major metro areas. From a spatial compilation of these UFI done per place (CSIR, 2007- GAP2), it was possible to compare various settlements in the country in terms of their services index. From the analysis it seems evident that 1) the city regions and cities, definitely perform various higher order functions within wider hinterlands, as well as 2) that there is a large number of medium and smaller towns that play a significant role in terms of providing access to services either in sparsely populated hinterlands (such as the Northern Cape and Free State), or within densely populated hinterlands (such as the Eastern Cape and KwaZulu-Natal). This analysis also strongly highlights the multi-nodal nature, interdependence and diversity within city regions and metro areas.

The analysis also illustrated the interdependencies and connectedness between regions and places in terms of international trade and export. These interdependencies are critical not only for international competitiveness, but also for internal service and livelihood creation accessibility. South Africa can be described as spatially challenged in a logistical sense due to the extremely strong agglomeration of major industries in Gauteng. Having the economic and financial hub in the centre of the country increases logistics costs when competing in the global market (see Annual State of Logistics Report, CSIR 2007 and Annexure C).¹¹ The spatial analysis of the transport component of road-based logistics

¹¹ CSIR Built Environment. 2007. The fourth annual State of Logistics survey. Pretoria. RSA.

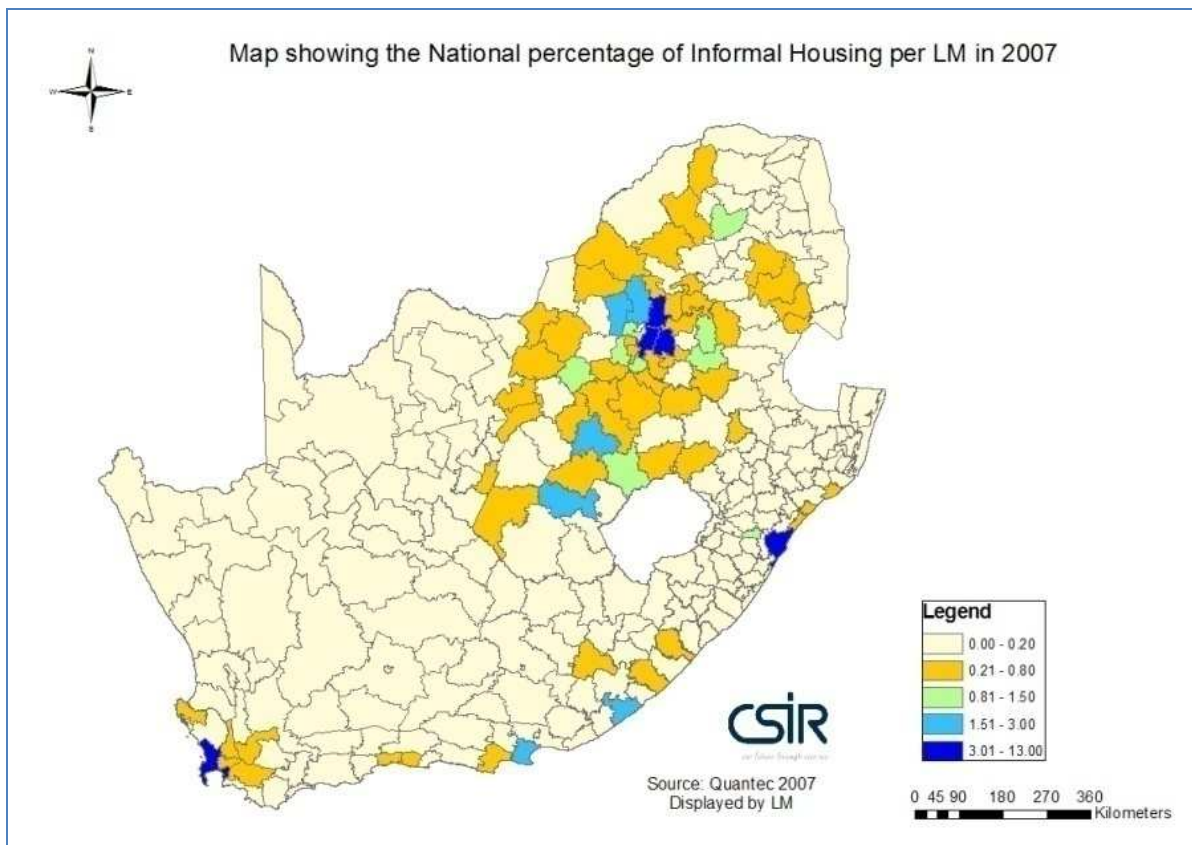
costs and the cost of transporting goods to the nearest market town, port or international logistics hub highlights the cost disadvantage of long-distance transport between Gauteng and the port cities and reflects the combined cost of transporting goods to all three destinations. Taking rise in fuel and oil prices and resource scarcity, there seems to be a need for a streamlined and upgraded freight logistics system along the main corridors that connect South Africa's main economic concentrations and ports of entry.¹²

e. Advances in Service Delivery

The analysis supports claims that the last decade bears testimony to major advances in service delivery. However, it also becomes clear that backlogs and pressures for service delivery are increasing in the cities, city-region areas and those towns that fulfil typical regional services roles. Whereas migration and growth trends can typically be related to economic drivers, the analysis suggests that there might also be a relation between migration and access to public services.

In an analysis of municipal service provision (largely infrastructure related) for the period 1996-2007 (Stats SA) a number of key trends, in many ways following the same pattern in terms of spatial manifestation, have been evident.

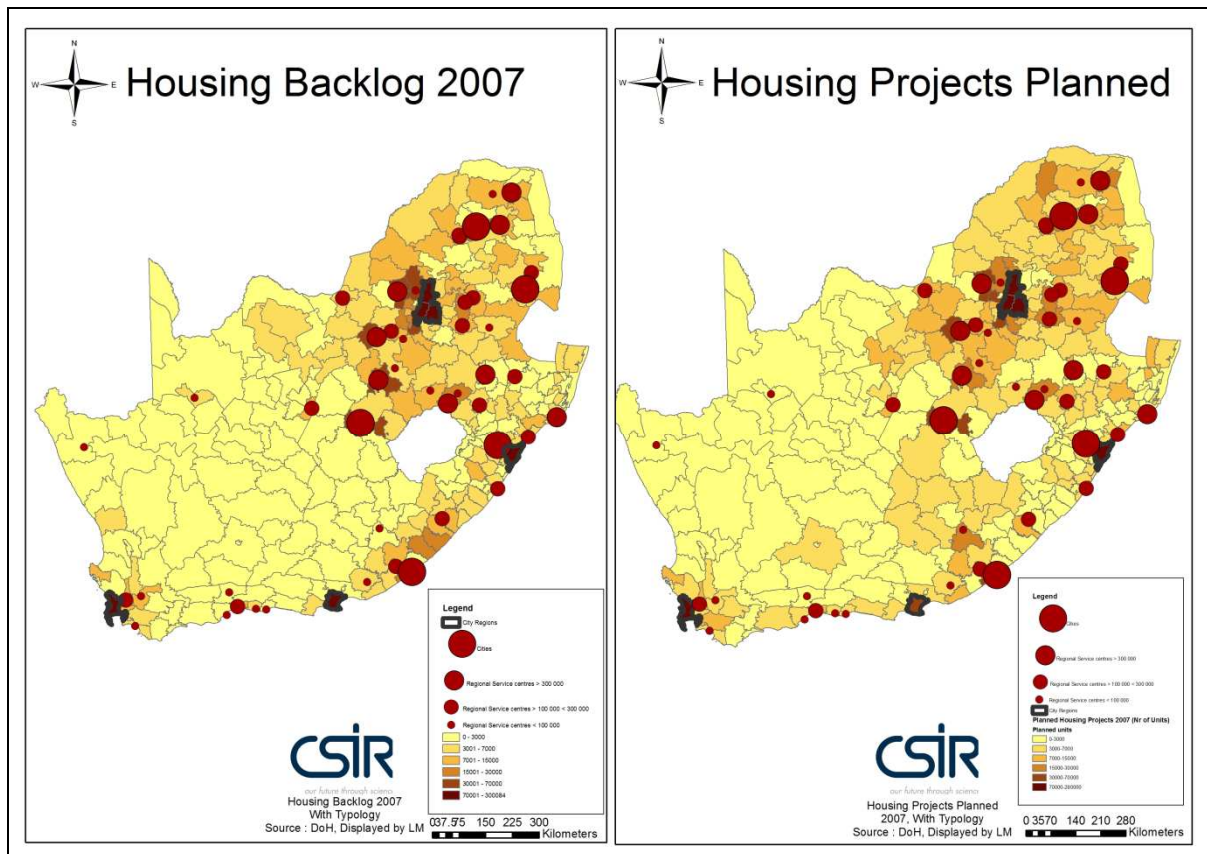
Map A23: Informal Housing 2007



Although the largest concentration of informal housing occurs in the six metros (together they accounted for just over 49% of all informal housing in the country in 2007), significant pockets of informal housing are found at a municipal level, most in the vicinity of important secondary towns – the location indicate significant clustering in a band around Gauteng which includes areas of some of the former Bantustan areas (Stats SA, 2007 – see Map A23). The areas where the biggest amounts of informal housing are prevalent, housing backlogs, planned projects and the areas of people in poverty obviously correspond in space – with large concentrations in the city regions (Map A24).

¹² CSIR Built Environment. 2006. The Third Annual State of Logistics Survey. Pretoria, RSA.

Map A24: Housing Backlog and Planned Housing Projects 2007



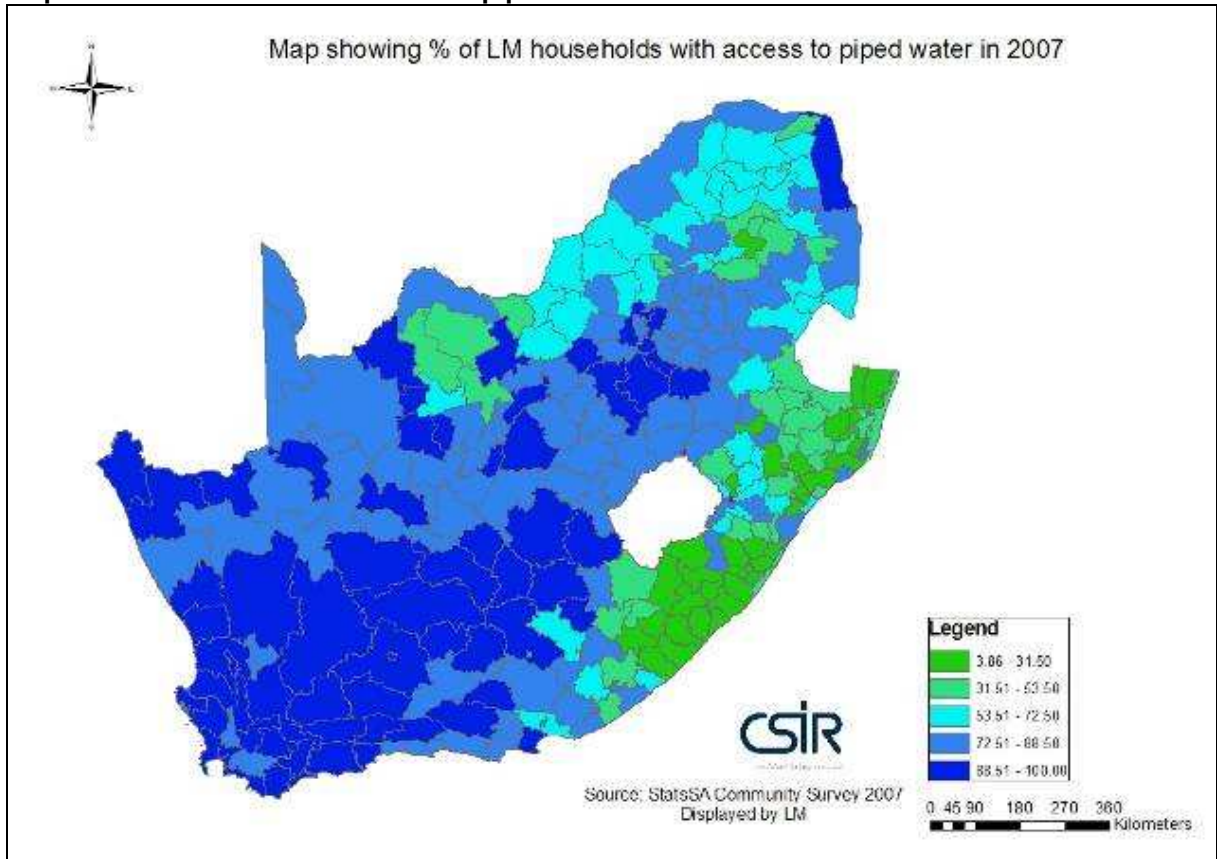
In spite of significant impacts in some districts e.g. between 1995 and 2007 (Stats SA) – huge backlogs are still remaining in the metro areas, the areas also carrying the biggest increases in population and significant economic growth (see Annexure D). This is the case for:

- Access to water (Maps A25 and A26);
- Access to electricity (See Annexure D); and
- Access to refuge removal (see Annexure D).

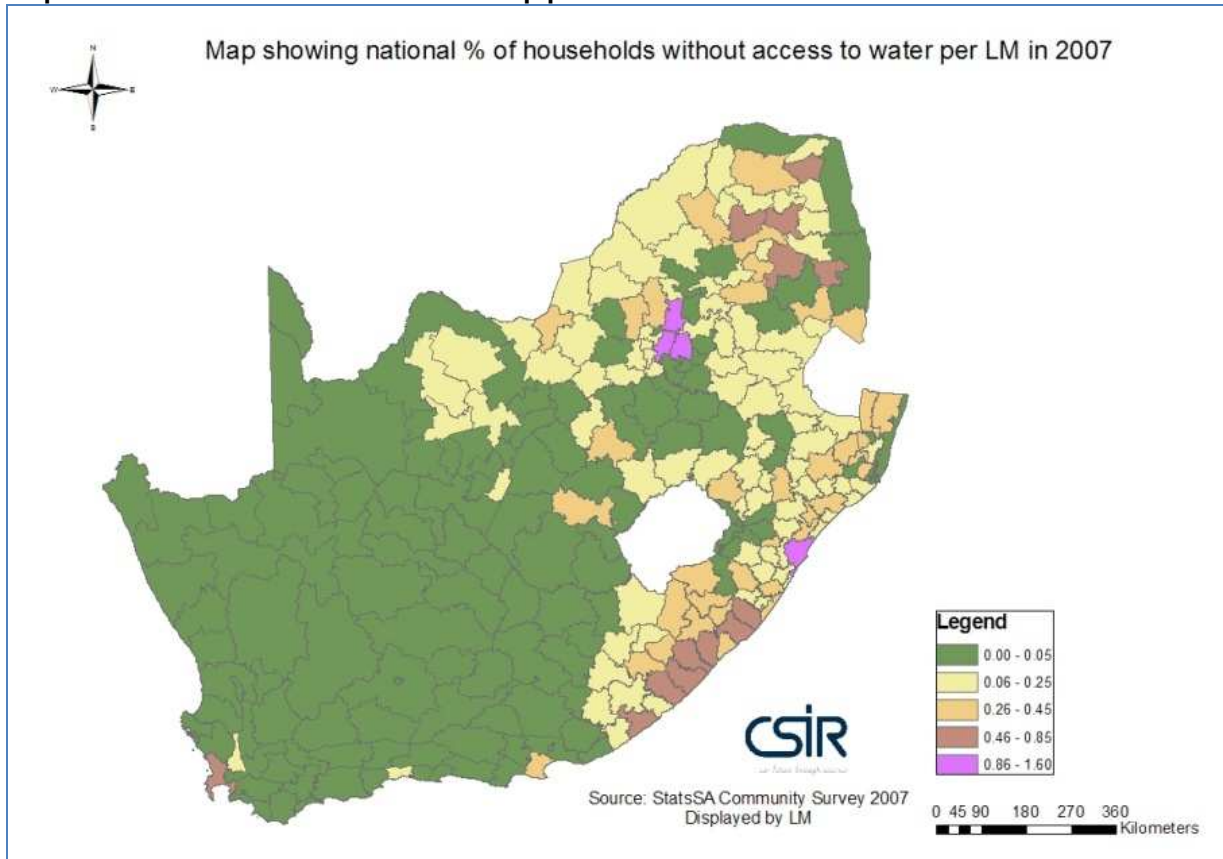
The relative large proportion of regional population within densely populated districts, especially in former Bantustan areas, that still require access to services is also evident. The Eastern Cape and KwaZulu-Natal dominate the districts whose households have the lowest access to piped water. In a district and metro comparison (Stats SA, 2007) it became evident that metropolitan areas such as Johannesburg appear in the top twenty areas of water need. It is interesting to note that the type of categories used affect placing significantly. The definition indicates access to piped water. If the definition was changed to piped water within 200m, a metropolitan area such as Johannesburg would compare even worse and would feature as number 10 on the list instead of 19th and eThekweni third (as opposed to 17th) (Annexure D).

South Africa has made huge strides in providing electricity to more than 2.5 million households between 1995 and 2007 (Stats SA). In spite of significant impacts in some districts between 1995 and 2007 it is evident from the spatial distribution of the levels of access to electricity that huge backlogs in terms of access to electricity still exists in the metro areas. These trends are probably increasing and a key aspect standing out is that the biggest advances and biggest needs are often evident in the same areas, with the biggest inroads being made in less populous districts.

Map A25: Households with access to piped water 2007



Map A26: Households without access to piped water 2007



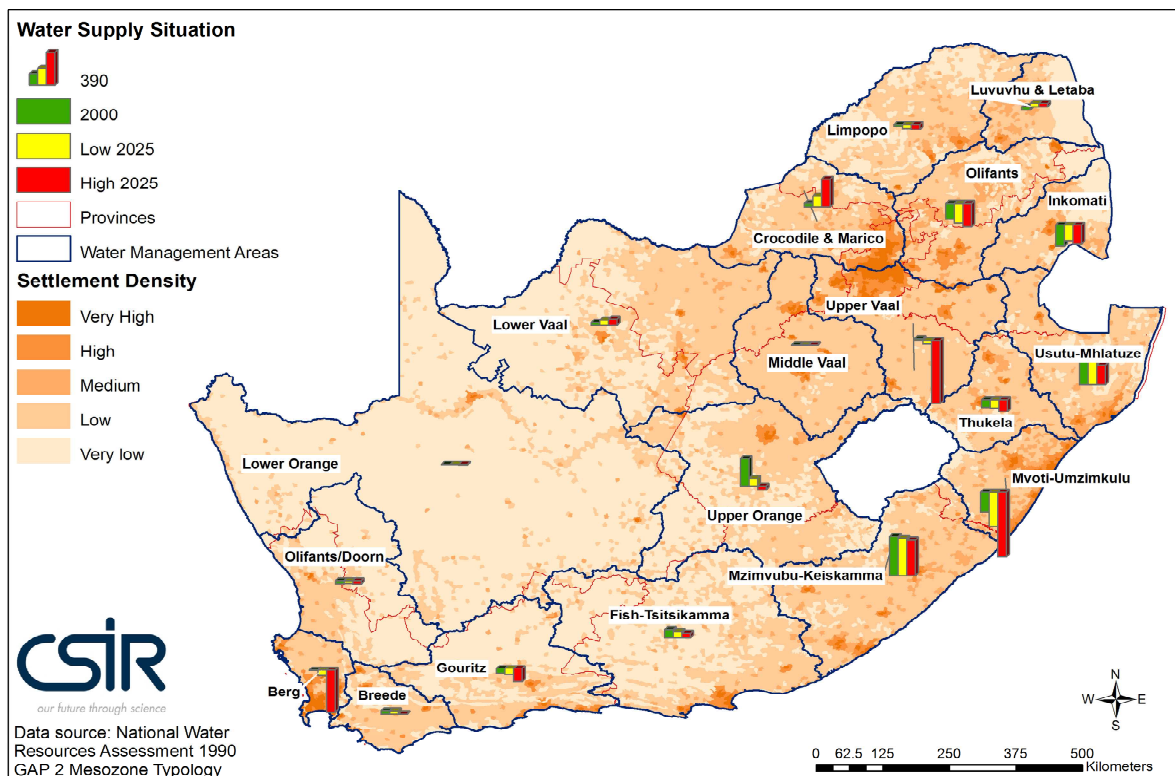
The relative large proportion of the population within densely populated districts, especially in former Bantustan areas, that still requires access to refuse removal services is strikingly evident (see Annexure D). The impact of landownership, high costs of water borne and other infrastructure within the vastly spread out settlements within the Eastern Cape, KwaZulu-Natal and parts of Limpopo and Mpumalanga, as well as in settlements in arid parts of the country, on financial viability of municipalities and on natural resources has to be explored, together with the use of alternative technologies.

f. Pressures on Natural Resources

Continued and concentrated economic and population growth, are said to be reaching critical proportions in terms of the pressures on interdependencies with and implications for natural resources, eco-systems and development for sustainable futures. This is not only because of growth pressures, but probably even more so because of the way in which this growth is managed and quality of life pursued. Analysis of water availability, biodiversity and land capability shows evidence of these pressures, not only in areas characterised by urbanisation, but also within densely populated rural areas.

What is evident from an analysis of available water resources (DWAf 2004) is the dependency of the Gauteng City Region and other cities on water transfers and the huge costs of unfocussed development in providing access to water services in arid regions (Map A27). This raises questions regarding aspects such as payments for ecosystems, system interdependencies, as well as costs for e.g. down-stream pollution.

Map A27: Water Supply Scenarios

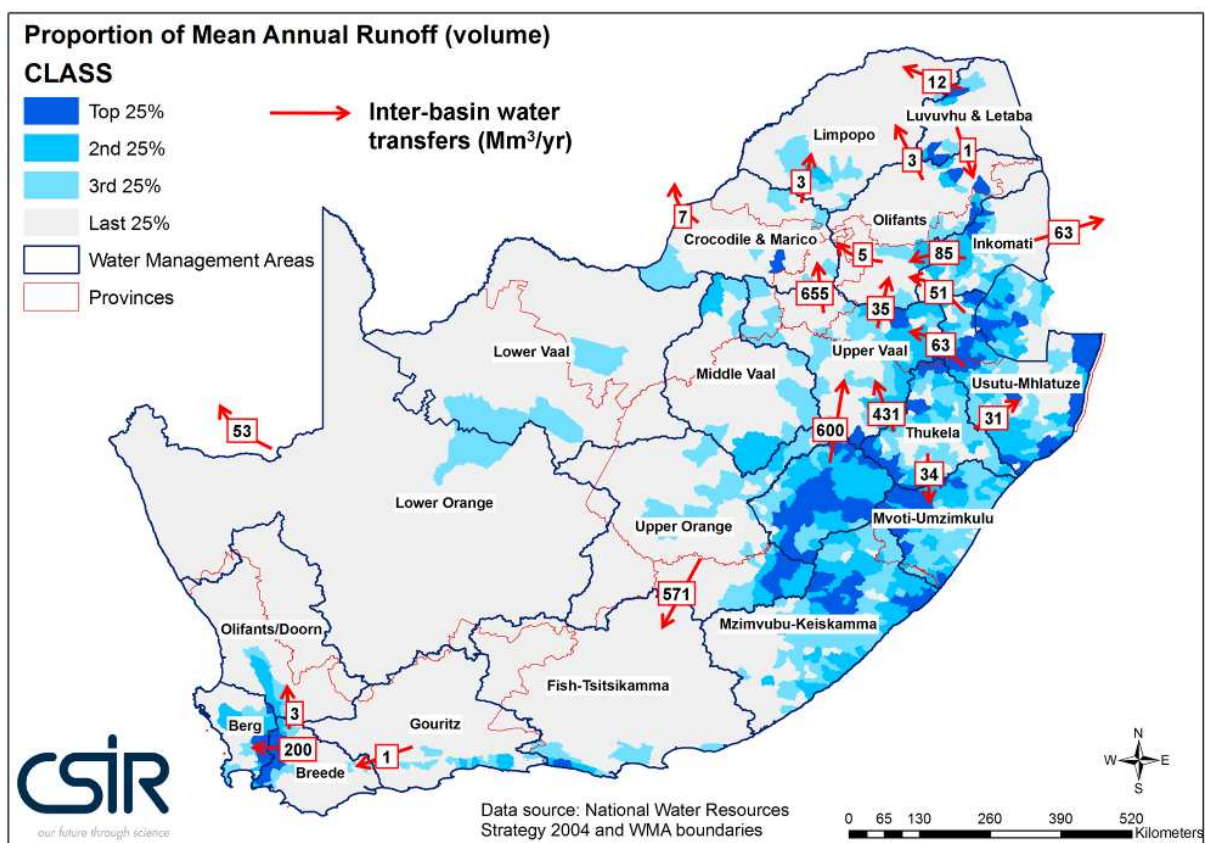


The bar graphs on Map A27 clearly show that most Water Management Areas (WMA) are using nearly all the available water, some are in a severe deficit situation already and only a few have more than is needed (Annexure E). Since water is the basis for most economic development, this will limit the development options in these highly impoverished areas and thus the options for generating wealth and reducing the trend toward urbanisation. The maintenance and operating costs of these transfer systems are also substantial. Clearly the major metropolises can contribute significantly by ensuring that they

manage their water resources efficiently and effectively by minimising leakage and instituting measures that limit demand such as water pricing.

Large volumes of water are already transferred around the country (primarily at taxpayer's expense). The largest transfers are the more than 1 billion m³ of water per year, from the Thukela and Mvoti-Keiskamma WMAs to the PWV/Gauteng region via the Upper Vaal WMA, including the secondary transfer of water to the Tshwane metropole in the Crocodile-Marico WMA. There are also large transfers to the Fish-Tsitsikamma WMA (mainly for irrigation) and to the Berg River WMA. Combined with the water situation assessment the figures emphasise that these transfers are already insufficient and that the situation will get worse (Map A28). Another, and important, implication of these resource mismatches is an ever increasing imbalance between resource allocations to different areas and the foregoing of opportunities for development in areas with dense, poor and rural populations in favour of areas that are already receiving a huge proportion of the resources. The water-transfer systems also require substantial investments to keep them working efficiently. Cities have an important role to play by being foci of economic growth and being able to support dense populations on insufficient land to meet their own resource needs (which will undoubtedly continue to grow). The key issue is whether or not the cities, city regions and major towns will continue to source the natural resources they require in a manner that sustains the resources of the areas that provide them (Annexure E).

Map A28: Water runoff and transfers



In most cases the high yielding catchment areas are situated in sparsely inhabited mountain ranges, exceptions being the dense rural settlements and high population densities in parts of the former Transkei, the upper Tugela River system and the Zululand coastal plain (compare figures). Much of the northern coastal plain is under irrigated sugar cane which places huge demands on the available water resources (Annexure E) as do the aluminium refineries in Richards Bay. Water is a key lever for alleviating poverty and increasing food security as most of the densely inhabited rural areas have relatively low and variable rainfall. Communities living on subsistence farming are highly vulnerable to the impacts of that variability on crop production.

Another key aspect is the scarcity of land for cultivation and food production, with limited availability of high potential land. The impact of unrestrained/unfocussed built-up development/growth in areas surrounding city regions, as well as the impact of unrestrained built-up development/spread of housing/over grazing/erosion etc in 'rural' areas, needs to be seriously considered (see Annexure E).

With regards to biodiversity, the grasslands and the coastal lowland vegetation of the Western Cape are the most threatened (see Annexure E). There are two main sources or pressures on land which result in the loss or degradation of natural vegetation and its biodiversity. These are pressures for development which result in land conversion to agriculture or to urbanisation. The other is in rural areas with high densities of poor people where they have little option but to over utilise and degrade their natural resources. Both pressures result in a significant loss of biodiversity and contribute to the very numbers of threatened plant and animal species in South Africa.

The increased impact of the increases in service delivery and still growing demand for services need to be considered, especially in terms of huge carbon and waste footprints (see the vast areas still in need for services such as refuse removal in Annexure D). The requirement to increase electricity provision in South Africa, for service access as well as continued industrial growth, together with the possible impact of peak oil prices, fuel freight movement and commuter dependence, places huge burdens on energy use. It is obvious that rural areas cannot sustain pressures of large numbers of the population attempting to be self-sufficient or 'live of the land'. 'Productive, sustainable, just and liveable cities' can only emerge when South Africans recognise that 1) they depend on rural environments that are also 'productive, sustainable, just and liveable' and 2) that this requires redressing the current imbalances in some way. There might be some value in exploring the 'node, corridor, region' approach that allows use to deal better with the realities of limited natural resources and to develop a new urban-rural compact based on greater equity and on sustainability.

From the overview of trend data, it is obvious that the centres and major nodes and corridors play a big role in terms of impact, people, economy, services and the natural environment, drawing attention to possible disconnects and failings in how development initiatives engage with these realities. For sustainable development and increased quality of life (health, soil, air, water and energy) for the whole of the South African population, the importance of acknowledging 1) the pressures on the major centres, as well as the diversity of pressures on various regions and areas, and 2) recognising that human development initiatives (including social, economic and infrastructure initiatives) are not disconnected from their specific contexts nor from the realities of the limits on water and other natural resources (including fossil-fuel derived energy), is evident.

PART B: A Reading of the Key Socio-economic and Environmental Characteristics, Trends and Challenges as they apply to the Range of Settlements in South Africa

In the more nuanced and temporal reading of spatial data and information as set out in Part A, some of the key socio-economic and environmental characteristics, trends and challenges in the South African landscape, were highlighted. As indicated, the analysis inter alia, suggests an increased concentration of population within an interconnected system/network of settlements and functional regions.

From the overview analysis it became evident that these trends and spatial dynamics are not only pointing to a pattern of concentration but are also having (and will most probably continue to have) quite a significant and diverse impact on the respective types of settlements and functional regions in the country. In the light thereof, as well as in order to determine the significant implications for governance and service delivery challenges to inform the National Urban Development Framework process, it was deemed important to conduct the analysis, as far as possible, on a settlement specific level. The analysis in Part A and in Annexure A-F includes a reading of the characteristics, trends and challenges per district and local municipality boundaries, as well as more nuanced spatial reading. In Part B, the latter more nuanced spatial analysis has, where possible, been narrowed down even further in order to provide a reading of the key socio-economic and environmental characteristics, trends and challenges as they apply to the range of settlements in South Africa.

In order to achieve the above, Part B is structured to:

- Introduce the methodology underlying the identification of specific settlements and categories of settlements for the purpose of conducting the settlement specific analysis (a more technical description is set out in Annexure H), as well as a brief comparative description of the various types of settlements, as based on functional characteristics¹³; and
- Provide a brief summary of the characteristics, diverse roles and challenges related to each of the respective types of settlements as identified. This is based on the national overview and the nuanced spatial analysis. The focus is specifically placed on those spaces and types of settlements that face critical development challenges of an order and magnitude that is of national and regional significance.

a. Identifying a Network of Settlements with Different Functional Characteristics

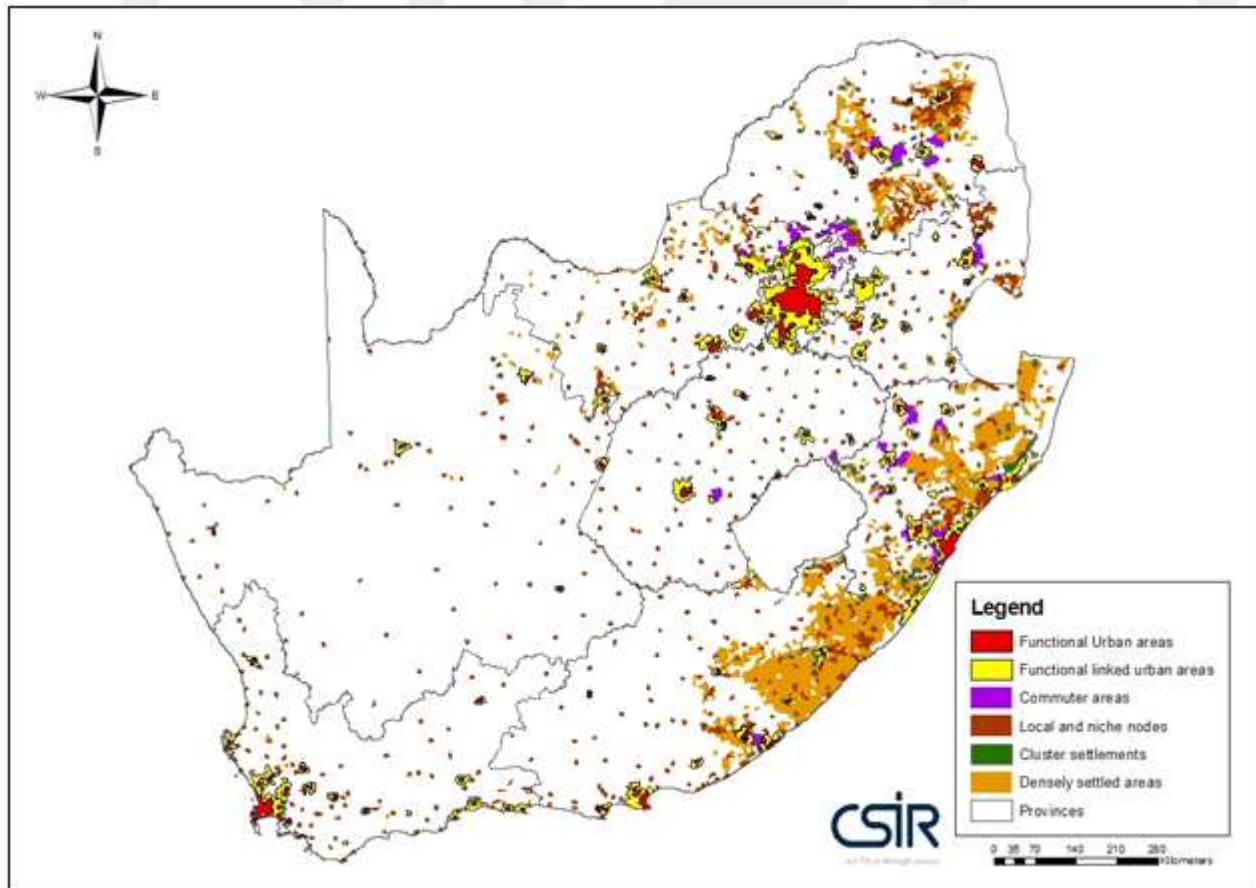
In order to conduct such a settlement specific analysis, the first challenge was obviously to identify the range of specific settlements in South Africa, especially in such a way as to not fall into the trap of merely identifying and analysing cities and major towns. Due to the Apartheid history and the subsequent range of settlement types, (where size of population, size and nature of the economy and the hierarchy of service functions do not correspond logically) a mere hierarchical categorisation of settlements in South Africa is not necessarily a useful approach.

For the purpose of identifying specific settlements the Functional Urban and Rural Typology as developed by Naude et al (2008) was found extremely useful and has been utilised as basis (see Map B1 and Annexure H). In this typology, instead of starting off at the usual identification of cities and towns, the complete land area of the country has been analysed and all built up areas and settlements in the country have been identified and selected in terms of their physical location (made possible by utilising the geospatial analysis platform – GAP2). The Functional Urban and Rural Typology is not based on the Stats SA classification of what has traditionally been regarded as urban or rural. The typology rather acknowledges the wide range of settlements and nodes that play critical functional roles within so-called urban and rural areas/regions. In this Functional Urban and Rural typology, the following settlements have been identified:

- the core built-up areas/settlements that can be regarded as ‘functionally urban’ (based on a range of indicators *inter alia* including population, as well as access to services, employment, income – see red areas on Map B1);
- dense settlements (yellow areas on Map B1) and commuter areas (purple areas on Map B1) that are functionally linked to the above ‘functionally urban’ core areas;
- a range of dense settlement nodes that do provide some services, but to a much lesser extent and has limited access to economic and employment opportunities (local and niche nodes, dark brown on Map B1); and
- a range of dispersed rural settlement areas, which constitute non-nodal spread-out settlements in former Bantustan areas, typically on traditional land and with limited accessibility to functional nodes/settlements (green and orange on Map B1).

¹³ Following the findings of this exercise, it is evident that this particular categorisation could obviously also be re-fined, extended and amended or re-organised, informed and guided by the reason/purpose of the specific ‘reading’ of the space economy. The purpose of this analysis is NOT to propose a new typology or classification index for cities, towns and settlements in South Africa. Such an effort should obviously be an inclusive process, at least taking cognisance of the wide range of stakeholders and experts within this discourse, the historic development of the South African space-economy, as well as recognise the extensive body of international and national knowledge in the field.

Map B1: Functional Urban and Rural Typology (Naude et al 2008)

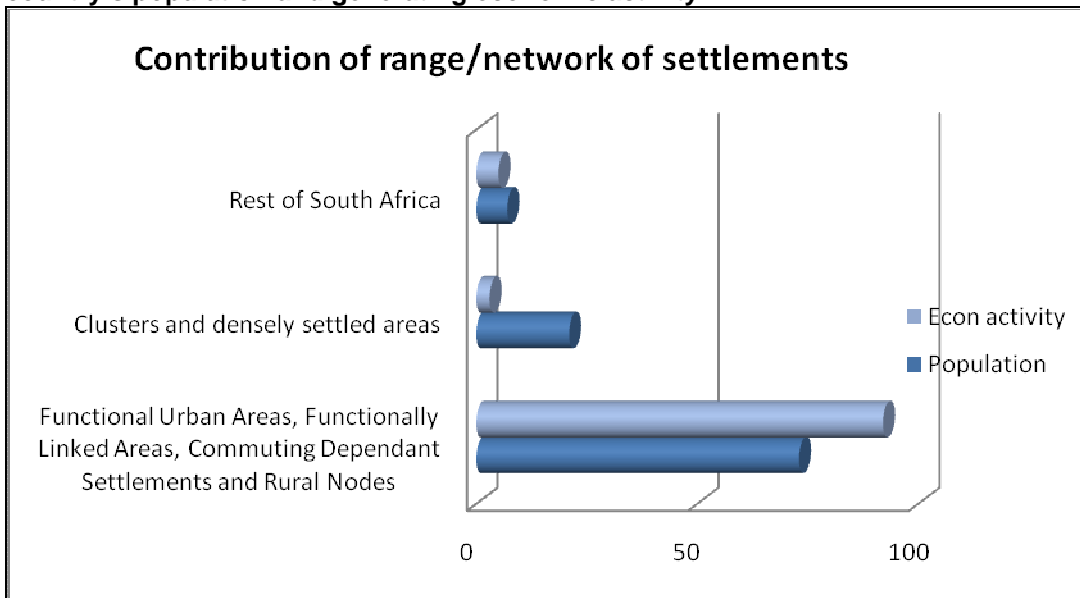


Source: Adapted from Naude, A. and Mans, G. 2008.

It is evident from the analysis and the growth, concentration and migration trends, that the network of settlements and functional regions provides access to livelihoods, services and economic opportunities for a big proportion of the South African population. It is also obvious from the analysis and overview that this wide range of settlements are closely connected to their functional regions and straddles the so-called urban and rural landscape, as they include city regions, cities, a range of towns and even dense settlements in rural areas. These settlements can be regarded as crucial building blocks of the South African landscape. The dis-aggregation of data (CSIR, GAP2 – Global Insight, Stats SA and DBSA data – see Annexure H) suggests that by 2004 (see Figure B1):

- More than 90% of all economic activity in the country was generated in this range of settlements and more than 70% of the population is housed in the network of settlements. The strong trends of townward and city migration suggest that these figures have in all probability been increasing; and
- 21% of the South African population was housed in the category of 'dispersed rural settlement areas' – which are densely settled areas in former Bantustans, without significant service centres. Even though these settlement areas are mostly located in regions where strong out-migration trends seem to be prevalent, these areas are still illustrating net-growth because of high numbers in population and high levels of natural population growth (GAP2).

Figure B1: Contribution and significance of the network of settlements in terms of housing the country's population and generating economic activity



Source: Based on GAP2, 2004 Population and GVA data used as indicators.

In order to explore the characteristics of, as well as spatial dynamics and trends impacting on the different kinds of settlements in more detail, certain types or categories of settlements have been identified in terms of their functional role, characteristics and the way in which the trends seem to impact on them. The purpose of this categorisation (see Map B2) is aimed at providing an overview reading (definitely not the only or in any way a definitive reading) of the role and function of different settlements within the interconnected network of settlements. This reading can start to highlight some implications, pointers and questions to be addressed in national and regional development policy and planning processes.

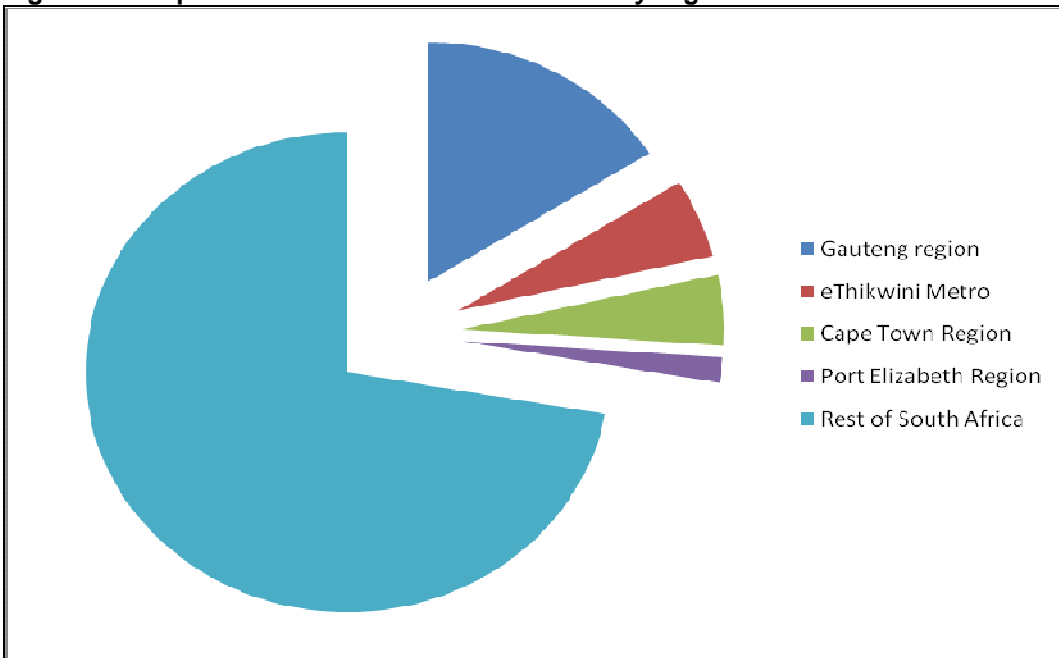
As a starting point, size of the population, size and nature of the economy, as well as comparative urban functional index (as described in Annexure C and Part A above) were utilised. The conjuncture between the extreme size of population (all above 1 million), size and nature of the economy (high level of economic activity, multi-nodal and diverse economies) and urban functional index clearly placed the Gauteng, Cape Town, eThekweni and Nelson Mandela Bay city-region areas¹⁴ in a category of their own (see Figures B2 to B5), with Nelson Mandela Bay lagging significantly behind the first three areas. This category is termed '*city regions*' for purposes of the analysis.

Another category with a relative high conjuncture between a very high order of urban functional index (more than 11 and in the same category as the nodes in many of the city-region areas), size of the population (more than 400 000), size and nature of the economy (high levels of economic activity, as well as diverse and multi-nodal economies), have been identified as the Bloemfontein, Nelspruit, East-London, Polokwane and George city areas¹⁵ (see Figures B3, B4 and B5). Places in this category, termed '*cities*' for the purposes of analysis, are also all marked by high levels of urbanisation and population growth.

¹⁴ The Functional Urban and Rural Typology (Naude et al, 2008) has been used to delineate the physical settlement boundaries. These areas do not correspond with that of metropolitan, district and local municipal or official city-region boundaries.

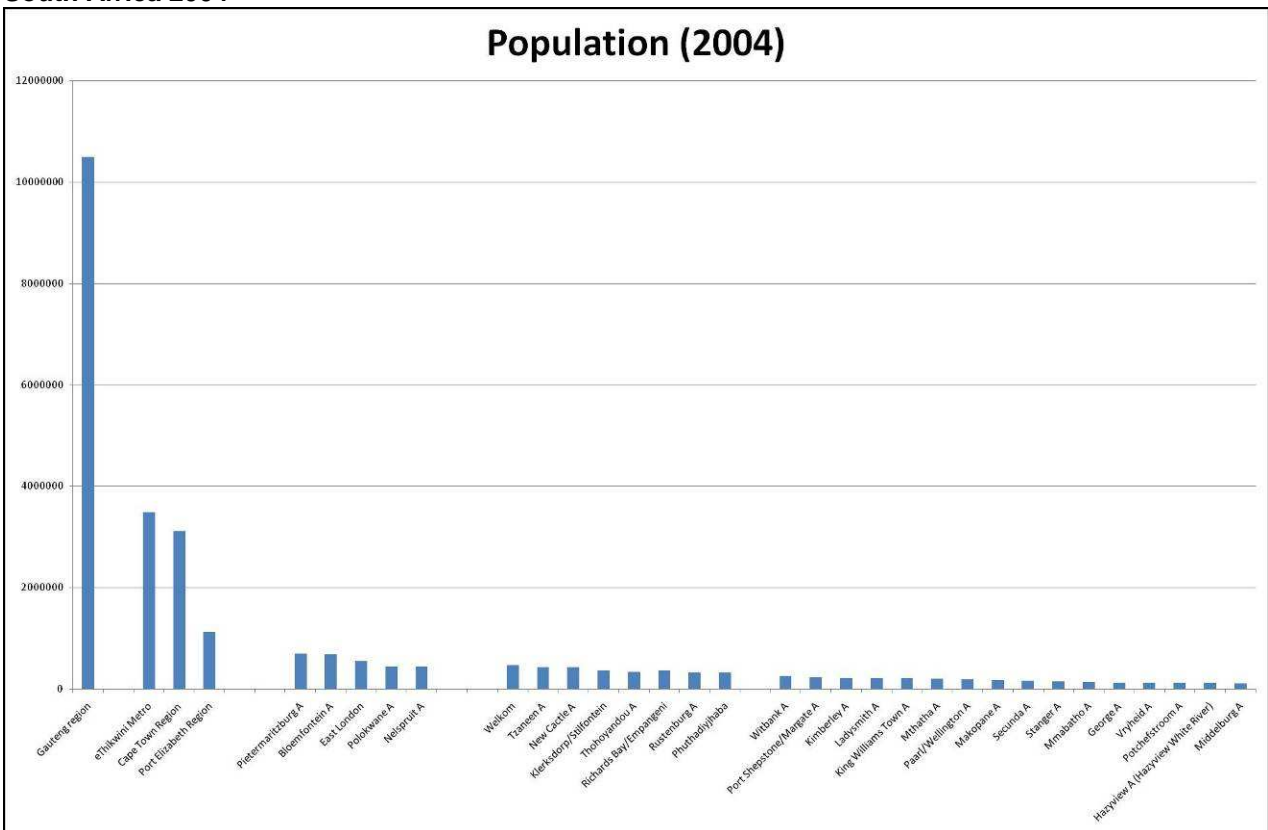
¹⁵ The Functional Urban and Rural Typology (Naude et al, 2008) has been used to delineate the physical settlement boundaries. These areas do not correspond with that of local or district municipal boundaries.

Figure B2: Population distribution between the city-region areas and the rest of South Africa 2004



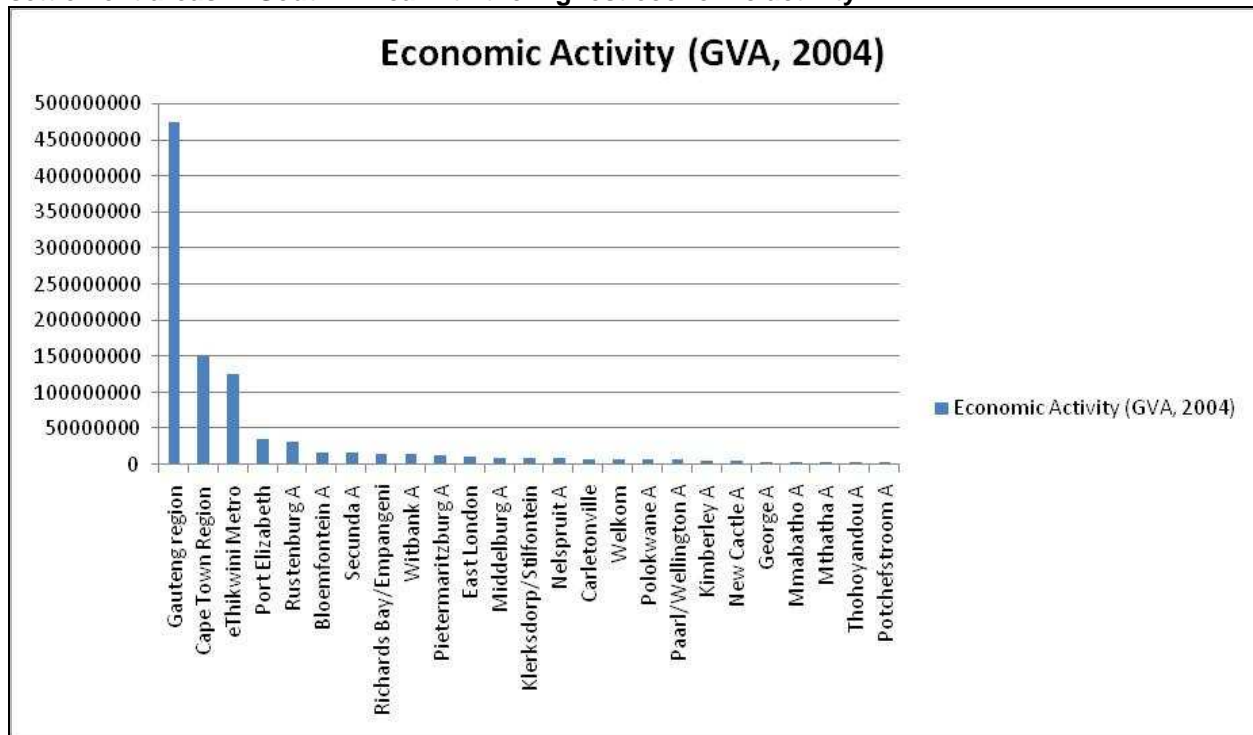
Source: Based on GAP2, 2004 Population and GVA data used as indicators.

Figure B3: Population distribution compared between the most highly populated settlement areas in South Africa 2004



Source: Based on GAP2, 2004 Population and GVA data used as indicators.

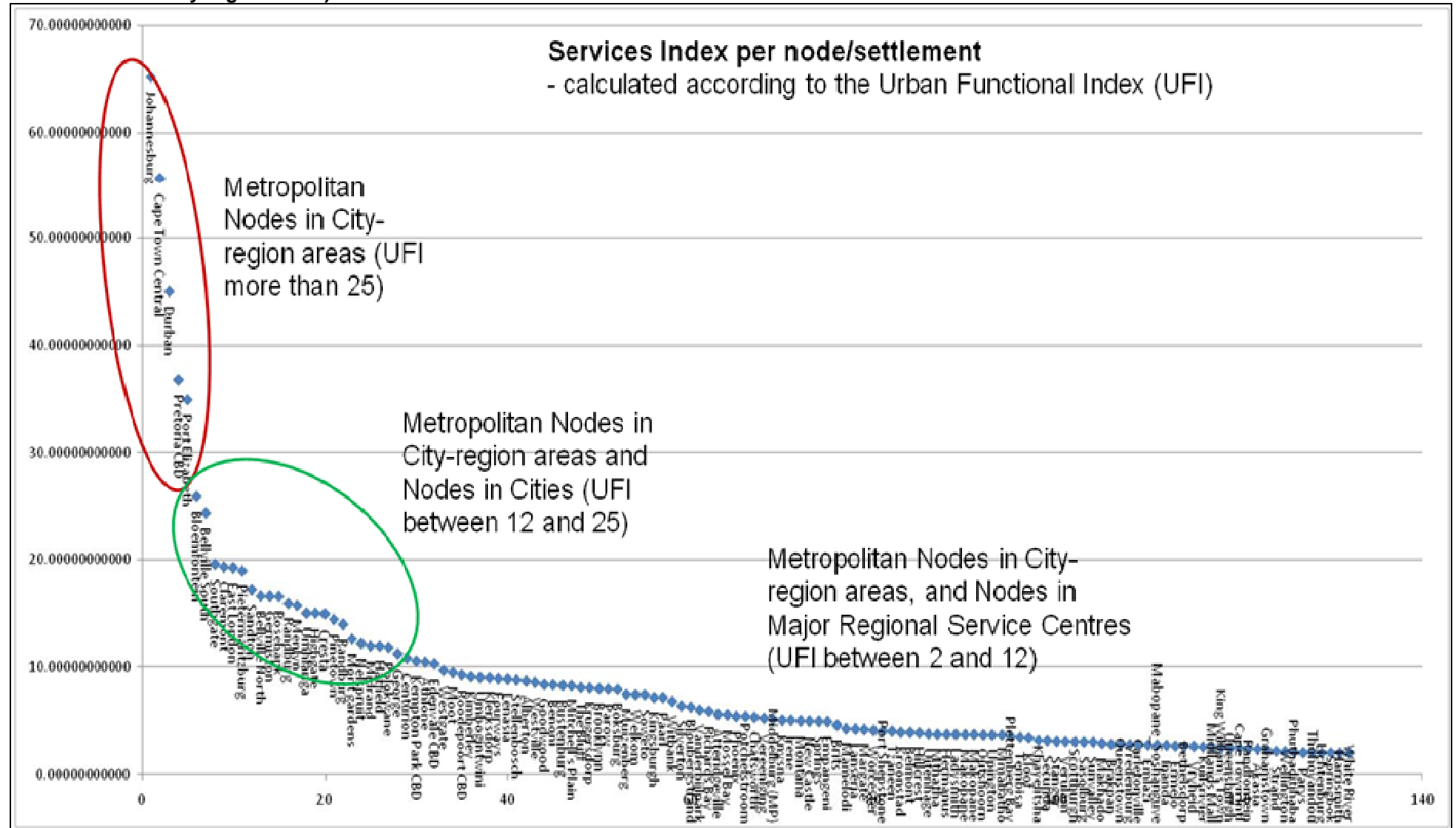
Figure B4: A comparison of economic activity (using GVA, 2004 as indicator) between the 25 settlement areas in South Africa with the highest economic activity



Source: Based on GAP2, 2004 Population and GVA data used as indicators.

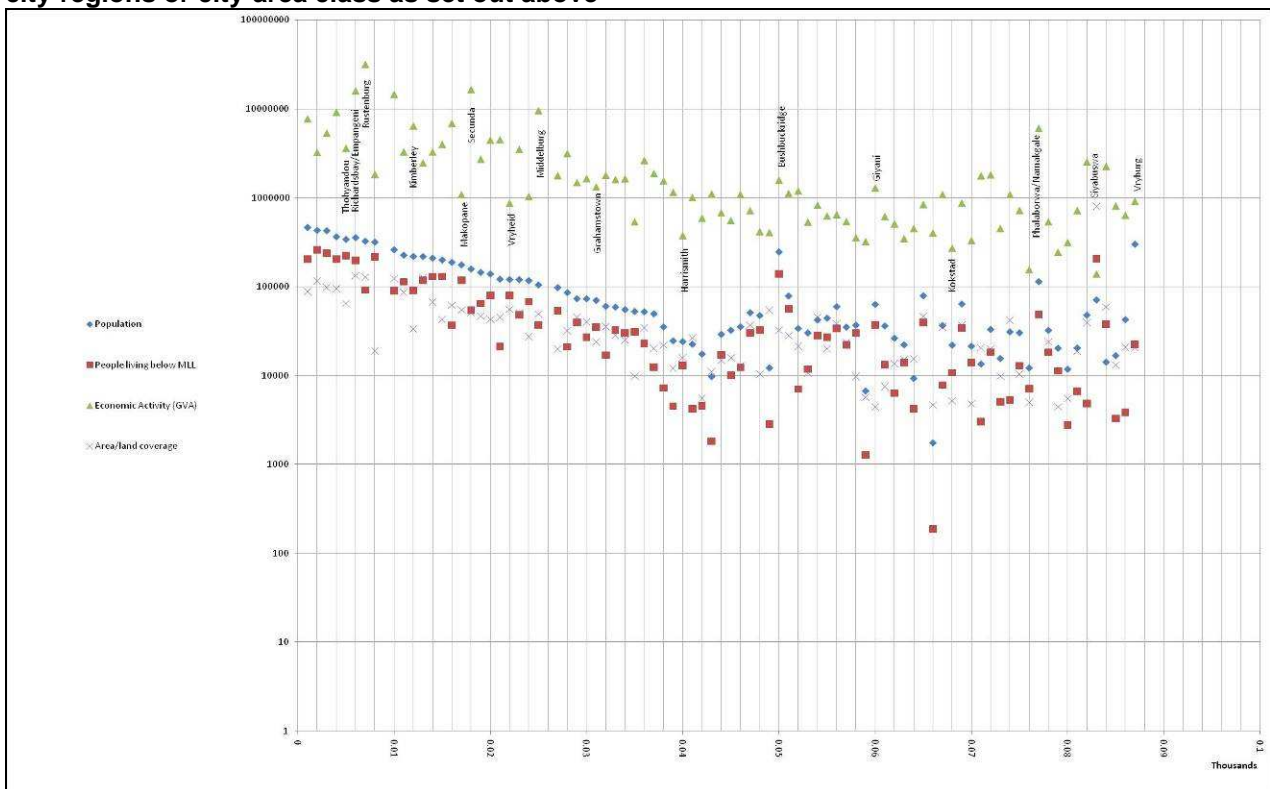
However, a reading according to size of economy and size of population indicated that beyond the city-region areas and cities, as set out above, there were very little conjunction/correlation between size of population, size of the economy and the functional index of the respective settlements (Figure B6). In this case the functional urban index was used to determine settlements that play a significant/major role as regional service centres within their respective hinterlands, regardless of the economic and size distortion brought about by the Apartheid spatial legacies (see Figure B5). The urban functional index data seems to suggest a quite significant break for settlements with an urban functional index above two (this break has also been picked up in an independent data analysis conducted in GAP2 (see CSIR, 2007 for the analysis of Medium and Higher Order Towns). Within this category large divergence exists in terms of size of population (ranging between 500 000 and 60 000 people per town/centre), size of the economy, role in and nature of hinterland, as well as nature of the economy which definitely calls for a more nuanced sub-categorisation in terms of characteristics (see Table B1). However, all centres in this category, from the data and spatial analysis, seem to play significant roles in their respective hinterlands and have, for the purpose of the analysis, been termed '*major regional service centres*' (see Map B2).

Figure B5: A comparison of the service functions, using the Urban Functional Index as spatially allocated to the range of nodes (all metro-area nodes are in the described city-region areas) in South Africa with an index of above two



Source: Based on GAP2, 2004 Population and GVA data used as indicators.

Figure B6: Relational illustration of size of population, people living below minimum living level, economic activity and land area for the range of settlements with population less than 500 000, a services index above one (Urban Functional Index – see Figure B5) and that does not fall within the city-regions or city-area class as set out above



Source: Based on GAP2, 2004 Population and GVA data used as indicators.

Referring back to the national overview analysis related to trends in terms of population growth, migration and concentration, it is worthwhile noting that all the above settlements seem to play a significant services (public and private) function, seem to be relatively accessible to employment, income and livelihood generating possibilities, and are found to be characterised by continued natural population growth, as well as pressures caused by urbanisation or town-ward migration.

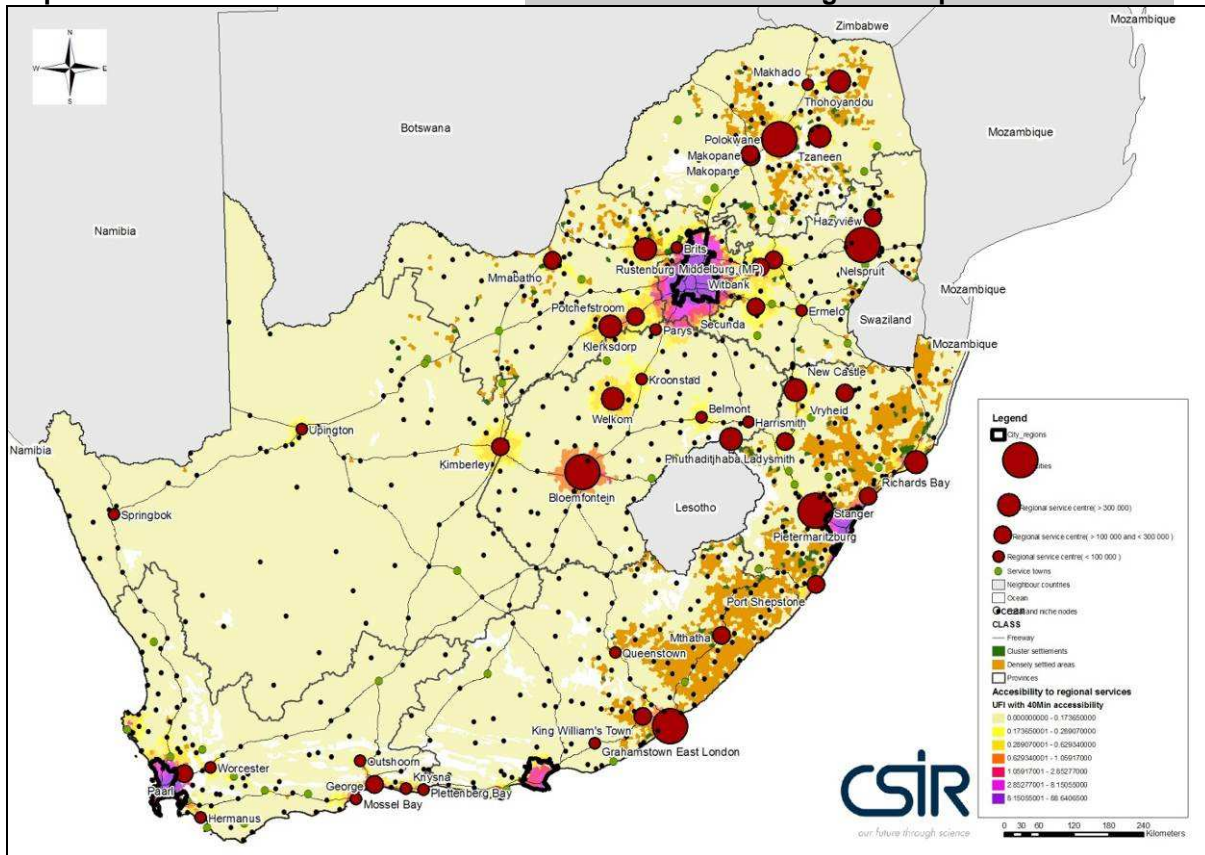
The remaining set of settlements, settlements with urban functional indexes of less than two, and mostly settlements that have relative small population sizes (except in the case of dense settlements such as Bushbuckridge – see Figure B6) in their functional areas, diverse economies and diverse more local roles. This implied identifying (see Table B1):

- the settlements that do have a relative strong service role within a particular sub-regional/local area (selected as areas with an Urban Functional Index of between one and two) – termed ‘*service centres*’ in the analysis;
- the settlements that provide a very local service (such as serving the surrounding agricultural area) or specific niche services (such as tourism) – typically areas with an urban functional index between zero and one. These settlements have been termed ‘*local and niche towns*’ for purposes of the analysis; as well as
- all the rural nodes and dispersed settlements that do play a critical role in housing a large part of the population, but without providing the necessary and expected government and private sector services – mostly settlements in the former Bantustan areas and termed ‘*clustered and dispersed settlements*’ for the purposes of the analysis.

Once again referring back to the national overview analysis related to trends in terms of population growth, migration and concentration, it is worthwhile noting that all the latter categories of settlements seems to display quite diverse and very context specific characteristics, seemingly with pressures for migration in those settlements located on key access routes and corridors (see Map B2).

It is important to note that the above characteristics and categorisations are not definitive and should be regarded as a broad national overview, providing a platform that should be further explored to identify specific nuances and challenges for urban management, as well as regional and rural development.

Map B2: Network of Diverse Settlements TO BE REPLACED – Legend simplified & corrected



Source: Settlement typology as developed by the CSIR for the SACN, 2008.

b. The Different Settlements and Key Socio-economic and Environmental Characteristics, Trends and Challenges

Based on the above analysis, in order to provide a summary snapshot of a few comparative indications of functional characteristics and spatial trends and dynamics, the wide range of settlements identified across South Africa are thus described according to the following categorisation (as set out comparatively in Table B1 and Map B2):

- City regions** (purple on Map B2): Typically multi-nodal city areas that with their functional linked areas are home to more than one million people each. These areas have significant and diverse economies; play a significant role in the national spatial economy and provide key linkages for international collaboration and competitiveness. This includes the Gauteng city-region area, as well as the coastal city-region areas of Cape Town, eThekweni and Nelson Mandela. The term 'city region' used here is to describe the functional area and its magnitude and not necessarily a particular administrative/policy unit as determined in a locally initiated process currently underway in the respective areas. City regions stand out as areas that with their functional hinterlands are home to more than 38% of the national population. Their growing and diverse economies generate more than 66% of the national economy and form the backbone of South Africa's competitiveness internationally (see Table B2).
- Cities** (black dots on Map B2): Referring to places that, with their functionally linked areas, house a population more than 400 000 people, have significant and multi-nodal economies and play a significant role in their respective regions in terms of service delivery and the economy. These places all have relatively high service indexes (urban functional index of more than 12), have relative high economic growth rates and are attractors of population growth and migration. This includes the functional areas of Polokwane, Bloemfontein, Nelspruit, East-London and Pietermaritzburg. These places face growing challenges in terms of poverty, job creation, service delivery and housing – even though the per-capita income for these areas are relatively high compared to that of the rest of the country.
- Major regional service centres** (red dots on Map B2): Medium and higher order towns that can be characterised as major regional service centres because of the role that they play as prominent

service centres within particular hinterlands. These places are characterised by relatively high service indexes (in this case between two and 10). The category typically includes big (in terms of population) towns in densely settled areas (such as Mthata and Toyando) as well as towns in resource rich areas (such as Rustenburg, Middelburg and Secunda) or towns playing key service functions within more isolated areas (such as Upington and Springbok). These towns differ substantially in size of population and economic activity, and are towns that typically draw population for either service or economic opportunities, even though in lesser scale than cities and city regions;

- **Service centres:** Smaller towns that are mostly fulfilling the role of service centres within a local area or region. These towns are usually associated with a particular range of services (in this case with service indexes (UFI) between one and two). Exceptions in this category are the former Bantustan towns of Bushbuckridge, Giyani and Siyabuswa, towns with a service index below one, but with populations of more than 130 000 each. Towns in this grouping are fulfilling a service function for communities within their direct vicinity (e.g. Giyani) or for a broader community on particular corridor/access routes (e.g. Estcourt or Malmesbury);
- **Local and/or niche towns** (black dots on Map B2): Small towns that fulfil the function of local and/or niche towns, and/or a particular niche role such as tourism (i.e. Clarens). These settlements are typically smaller in terms of population and economic activity. In some cases characterised by high economic growth rates (even though from a small base, such as Prince Albert), or high population growth (typically places on access routes such as Alice). In some areas these towns seem to bear evidence of decline (associated with economic stagnation/population decline in the surrounding area). An example of the latter could be Koppies in the Free-State province; and
- **Clustered and dispersed settlements** (brown areas on Map B2 and Map B3): This includes 1) rural nodes and clusters, which are typically clusters of settlements with very limited service roles; and 2) densely settled rural areas/dispersed rural settlements which characterise the former Bantustan areas and are often under traditional land ownership. These settlements are outstretched and house significant numbers of people (especially poor people) in the eastern coast (former Transkei and Ciskei areas), the northern KwaZulu-Natal areas, as well as the northern areas (located within the Limpopo and Mpumalanga provinces). These settlements are typically located in areas illustrating out-migration, as well as net population growth because of natural growth and large population numbers, with very little economic activity and especially on the east coast limited access to services and livelihood opportunities.

The analysis suggested a number of typical key socio-economic and environmental characteristics, trends and challenges for the respective settlements, as highlighted below. The overview also clearly illustrates the importance to support and place this broad national analysis within the context of specific, local and more nuanced, as well as a much more relational and integrated analysis.

Table B1: An indication of the network of settlements in terms of selected functional and spatial characteristics and trends

[Red text depict indicators that signify serious pressures/management threats/risks; Orange text is used to depict aspects holding potential threats; Green text depicts well performing indicators/positive aspects)

SETTLEMENT TYPES	POPULATION – Size, poverty, dependency, growth and migration	ECONOMIC ACTIVITY – Size, sector focus and diversity, GDP/CAPITA, growth/ decline, access to employment	FUNCTIONAL SERVICES – Comparative index and service area, access to services	ACCESS TO BASIC SERVICES – Progress, backlogs and remaining GAPS	NATURAL RESOURCES – Dependency and vulnerability
City-Region areas	<p>More than 1 million people in multi-nodal urban complexes, large functionally linked and peri-urban hinterlands</p> <p>Largest numbers and concentrations of people living under minum living level</p> <p>High pressures due to natural growth</p> <p>High pressures due to in-migration, urbanisation</p> <p>Increasing dependency ratios</p> <p>Increasing numbers of youth and pressures on social services</p> <p>High numbers of unemployment</p>	<p>Diverse economies</p> <p>GDP/CAPITA</p> <p>Highest employment rates and access to employment</p> <p>Highest access to household income</p> <p>Highest numbers of unemployed</p> <p>Extreme pressures on labour markets to cope with increasing numbers of economically active population</p> <p>Continued economic growth</p> <p>Highest poverty GAP</p> <p>Highest income inequalities</p>	<p>High services index in all metropolitan nodes (2-80)</p> <p>Severe pressure to continue playing critical role in providing access to government and private sector services</p> <p>Highly accessible and with large service areas</p> <p>Responsible for most of RSA imports and exports</p> <p>Extreme pressure in terms of logistical, transport and fuel costs</p> <p>High congestion and internal accessibility costs</p>	<p>Large numbers of population provided with access to water, electricity, refuge removal and information and computer technology (ICT) infrastructure</p> <p>Largest backlogs ito number of people without access to water, electricity and refuge removal</p> <p>Increasing gap in service delivery due to natural growth and in-migration</p>	<p>Current access to water sources in place – mostly because of water transfers</p> <p>Huge water dependency for future and with increased urbanisation</p> <p>Biodiversity vulnerability</p> <p>Huge impact on carbon imissions, waste and energy</p>
Cities	<p>400 000 – 1 million in multi-nodal urban complexes with relatively large functionally linked hinterlands</p> <p>Large numbers of people living under minum living level</p> <p>Pressures due to natural growth</p> <p>Pressures due to in-migration</p> <p>Increasing dependency ratios</p> <p>High numbers of unemployment</p>	<p>Diverse economies</p> <p>GDP/CAPITA</p> <p>Reasonable employment rates and relative access to employment</p> <p>High access to household incomes</p> <p>High numbers of unemployed</p> <p>Continued economic growth</p> <p>High income inequalities</p>	<p>High services index (2-25)</p> <p>Critical role in providing access to government and private sector services</p> <p>Accessible and with large service areas</p> <p>Responsible for a small % of RSA imports and exports</p> <p>Pressure in terms of logistical, transport and fuel costs</p>	<p>Large numbers of population provided with access to water, electricity, refuge removal</p> <p>Relative good access to information and computer technology (ICT) infrastructure</p> <p>Backlogs in terms of number of people without access to water, electricity and refuge removal</p>	<p>Current access to water sources in place</p> <p>Water dependency for future and with increased urbanisation</p> <p>Biodiversity vulnerability</p> <p>Impact on carbon imissions, waste and energy</p>

SETTLEMENT TYPES		POPULATION – Size, poverty, dependency, growth and migration	ECONOMIC ACTIVITY – Size, sector focus and diversity, GDP/CAPITA, growth/ decline, access to employment	FUNCTIONAL SERVICES – Comparative index and service area, access to services	ACCESS TO BASIC SERVICES – Progress, backlogs and remaining GAPS	NATURAL RESOURCES – Dependency and vulnerability
Major Regional Service Centres	Big towns in former Bantustans with large numbers of dispersed rural settlements in the vicinity	<p>Population more than 100 000.</p> <p>A large percentage of the population living under minimum living level</p> <p>High pressures due to natural growth</p> <p>Lowering pressures due to out-migration</p> <p>High but decreasing dependency ratios</p> <p>Extremely high number and high % of population that are unemployed</p>	<p>Economies largely dependent on Government and Community Services Sector</p> <p>Extremely skewed GDP/CAPITA</p> <p>Extremely low access to employment</p> <p>Relative high access to household income due to the large number of people in the vicinity of such towns</p> <p>Extremely high numbers and % of population are unemployed</p> <p>Continued economic decline</p>	<p>Services index relatively high but not at all in relation to number of people in town/area (2-11)</p> <p>Limited and under-utilised role in providing access to government and private sector services</p> <p>Usually not that accessible and with large areas and population depending on limited range of service</p> <p>Responsible for a small % of sub-regional trade</p> <p>Pressure in terms of logistical, transport and fuel costs</p>	<p>Large numbers of population provided with access to water, electricity, refuse removal</p> <p>Limited access to information and computer technology (ICT) infrastructure</p> <p>Backlogs in terms of number of people without access to water, electricity, sanitation and refuse removal</p>	<p>Current access to water sources not secured</p> <p>Water dependency for future and with increased urbanisation</p> <p>Biodiversity vulnerability, decreasing land capability</p> <p>High impact on carbon emissions, waste and energy</p>
	Medium-big towns in resource rich hinterlands	<p>Pressures due to urbanisation and in-migration</p> <p>Increasing dependency ratios</p> <p>Growing numbers of unemployed and employed, skilled and unskilled economically active population</p>	<p>High levels of economic activity</p> <p>Economies based on natural resources</p> <p>GDP/CAPITA relatively high</p> <p>Reasonable employment rates and relative access to employment</p> <p>Continued economic growth (i.e. Rustenburg, Secunda, Witbank) OR Economic decline (i.e. Klerksdorp/Stilfontein)</p>	<p>Relative high services index (2-11)</p> <p>Critical role in providing access to government and private sector services</p> <p>Accessible and with large service areas</p> <p>Responsible for a small % of RSA imports and exports</p> <p>Pressure in terms of logistical, transport and fuel costs</p>	<p>Large numbers of population provided with access to water, electricity, refuse removal and information and computer technology (ICT) infrastructure</p> <p>Backlogs in terms of number of people without access to water, electricity and refuse removal</p>	<p>Current access to water sources varying</p> <p>Water and energy dependency for future and with increased urbanisation</p> <p>Biodiversity vulnerability</p> <p>Impact on carbon emissions, waste and energy</p>

SETTLEMENT TYPES		POPULATION – Size, poverty, dependency, growth and migration	ECONOMIC ACTIVITY – Size, sector focus and diversity, GDP/CAPITA, growth/ decline, access to employment	FUNCTIONAL SERVICES – Comparative index and service area, access to services	ACCESS TO BASIC SERVICES – Progress, backlogs and remaining GAPS	NATURAL RESOURCES – Dependency and vulnerability
	Small-medium sized towns in relatively isolated hinterlands	<p>Small-medium sized towns in relatively isolated hinterlands</p> <p>Pressures due to town-ward migration</p> <p>Relative high levels of dependency</p> <p>Low per capita income</p>	<p>Regional services economies</p> <p>Varying and context specific economies</p> <p>Economic stagnation or decline</p> <p>Limited employment opportunities and limited access to livelihoods</p>	<p>Relative high services index (2-11)</p> <p>Critical role in providing access to often limited range of government and private sector services</p> <p>Vast distances</p> <p>Pressure to logistical, transport and fuel costs</p>	<p>Huge pressures on service delivery to housing</p> <p>Backlogs to number of people without access to water, electricity and refuse removal</p>	<p>Current access to water sources varying</p> <p>Water dependency in arid hinterlands</p>
	Service Centres	<p>Population and town size vary widely</p> <p>Lowering pressures due to out-migration</p> <p>Relative high unemployment rates</p> <p>High dependency ratios in bigger sized places</p>	<p>Fulfilling a service function for the vicinity</p> <p>Limited economic activity in most towns (exception resource rich towns)</p> <p>High economic growth or Economic decline</p> <p>Varying and context specific economies</p>	<p>Local service role: services index (UFI between 1-2)</p> <p>Disjuncture between town size (population) and service function in Bushbuckridge, Giyani and Siyabushwa (UFI less than 1)</p> <p>Diverse and context specific economies and economic trends</p>	<p>Often challenges with integration of former Apartheid towns and diverse service standards, as well as financial viability of municipalities</p>	<p>Context specific risks and vulnerabilities</p>
	Local and Niche Settlements	<p>Small towns and villages</p> <p>Lowering pressures due to out-migration</p> <p>Town-ward migration and pressures on towns on key access routes, increased unemployment</p> <p>Relative high dependency ratios</p>	<p>Limited economic activity</p> <p>High economic growth or Economic decline</p> <p>Varying and context specific economies</p>	<p>Small towns that fulfil the function of local/or niche towns, particular nich roles such as tourism</p>	<p>Often challenges with integration of former Apartheid towns and diverse service standards, as well as financial viability of municipalities</p>	<p>Context specific risks and vulnerabilities</p>

SETTLEMENT TYPES	POPULATION – Size, poverty, dependency, growth and migration	ECONOMIC ACTIVITY – Size, sector focus and diversity, GDP/CAPITA, growth/ decline, access to employment	FUNCTIONAL SERVICES – Comparative index and service area, access to services	ACCESS TO BASIC SERVICES – Progress, backlogs and remaining GAPS	NATURAL RESOURCES – Dependency and vulnerability
Dispersed Rural Settlements	<p>Rural nodes and clusters</p> <p>Clusters of settlements with very limited services and poor service centres</p> <p>21% of SA population</p> <p>32% of people from SA living under MII</p> <p>High levels of natural growth</p> <p>Out-Migration levels high</p>	<p>Limited access to formal and informal economic activity</p> <p>High unemployment rates</p> <p>High dependency ratios</p> <p>Declining economies</p>	<p>Limited access to services</p> <p>Low/No service index</p> <p>Pressure in terms of logistical, transport and fuel costs</p>	<p>Large numbers of population provided with access to water, electricity, refuse removal and information and computer technology (ICT) infrastructure</p> <p>Backlogs in terms of number of people without access to water, electricity and refuse removal</p>	<p>Current access to water sources in place</p> <p>Water dependency for future and with increased urbanisation</p> <p>Biodiversity vulnerability</p> <p>Impact on carbon imissions, waste and energy</p>

City Regions and Cities

The **profoundness of the city-region areas**, not only in being the home to a significant proportion of the South African population and in providing them with access to livelihood opportunities and services and cities, but also in driving the South African economy, is clearly evident from the analysis of trends and spatial dynamics. An analysis of the functional city-region areas (as defined for purposes of this analysis – see Table B2) based on the disaggregated 2004 data (CSIR, GAP2) indicates that the four city regions house close to 40% of the South African population and make up more than 65% of the country's economic activity.

Table B2: City Regions and Cities

Criteria for typologies	Settlement/Place	LM_name	DCNAME	Prov_name	Population	People<MinLiv	Econ Activit	Area (Há
Global City Region	Gauteng region			Gauteng	22.18	13.61	39.18	1.32
					22.18		39.18	1.32
Coastal City Regions	eThekweni Metro			Kwazulu-Natal	7.35	5.08	10.20	0.27
* Population above 1million	Cape Town Region			Western Cape	6.57	3.10	12.37	0.19
* multi-nodal, diverse economies	Port Elizabeth			Eastern Cape	2.36	1.89	2.92	0.12
Coastal City Regions					16.28	10.07	25.48	0.58
Cities	Pietermaritzburg A	The Msunduzi Local Mur	UMgungundlovu Dist	KwaZulu-Natal	1.46	1.36	1.12	0.10
* Service Functions very high (UFI>11, Class 1 according to UFI index - same as coastal city regions & Gauteng areas)	Bloemfontein A	Mangaung Local Municip	Motheo District mun	Free State	1.43	1.15	1.43	0.12
* Population more than 400 000	East London	Buffalo City Local Municipi	Amatole District mui	Eastern Cape	1.16	1.15	0.95	0.08
* Multi-nodal & HUGE hinterland dependancies & in-migration	Polokwane A	Polokwane Local Municipi	Capricorn District m	Limpopo	0.93	1.15	0.56	0.13
	Nelspruit A	Mbombela Local Municipi	Ehlanzeni District m	Mpumalanga	0.92	0.94	0.70	0.11
Cities					5.90	5.76	4.76	0.55
TOTALS					44.36	15.83	69.43	2.45

The **significance of the Gauteng city region** and its functionally linked areas is clearly evident – not only in comparison with the other city-region areas and cities, but within the country as a whole. The Gauteng city region plays a crucial role in that it houses almost a quarter of the country's population (the analysis suggests more than 22%) and generates almost 40% of the national economy (CSIR, GAP2, 2004).

Within this context the **evidence of increasing population growth**, estimated at 2.6% for the period 1996-2007 (StatsSA data from Quantec) and concentration (in Johannesburg metro alone there are 1.25 million more people in 2007 than there were in 1996) definitely suggests that the national and regional significance of the Gauteng city-region area is a reality that will continue to be a part of the southern African development landscape.

The city regions and cities are all characterised by significant total population growth between 2001 and 2007, especially in the metropolitan areas of Gauteng (City of Johannesburg, Ekurhuleni and Tshwane), City of Cape Town and eThekweni. This equates to a growth of over 4.3 million people. Other areas of significant growth include the cities of Polokwane, Nelspruit, Pietermaritzburg, Bloemfontein and Bloemfontein area (Motheo DM). It should be noted that these figures are probably much higher as migration from outside the country's borders is not reflected here. The steep growth in the average main metro population (2,9%) is way above the national average of 1,8 % over the 11-year period. Interesting to note is that amongst these areas, the City of Cape Town's population boosts ahead at an average rate of 3,2%, above that of the Gauteng metro average of 2,6% over the same period.

The impact of these growth rates is even more significant taking that it seems to go hand in hand with an **increasingly more youthful character** of the city-region areas. The data suggests that 71.2% of all youthful (0-14) population growth in the country (1996-2007, Quantec) actually took place in the metropolitan areas (with the exception of Nelson Mandela Metro which shows a relative decline in this group).

Evident is the **role of city regions and metro areas in the economy and within economic growth**. The metro and city-based economies are much more diverse than the economies in other regions. For the national and regional economies to be sustained (and taking into account South Africa's dependency on oil imports) it is crucial that South Africa remains part of the international economy, as well as develop sustainable regional economies. The metro and city-based economies are much more diverse than the economies in other regions. The city regions and metro areas are also almost solely responsible for international trade as measured through exports and imports.

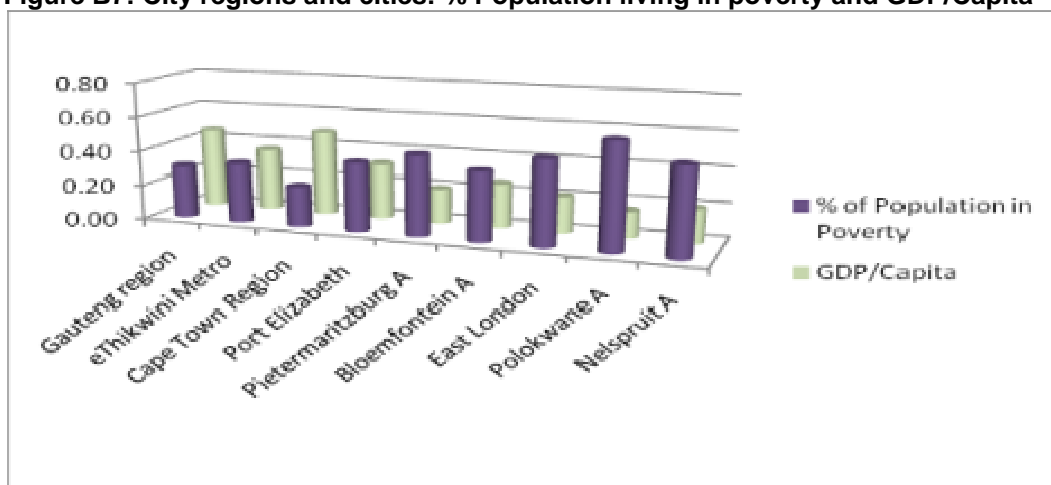
The city regions are also the places signifying above average **increases in the economically active population**, with the major metropolitan areas alone accounting for almost 50% of the national growth in

the economically active population category (1991-2007, Quantec), with the cities of Nelspruit, Bloemfontein and Pietermaritzburg also illustrating significant growth. The importance of these areas in terms of economic development and livelihood creation is further illustrated by the 2,8% average growth of the city region economically active population – significantly higher than the national average of 1,8% over the 11-year period 1996 to 2007. Again, the Gauteng city region dominates growth in the 5-year period 1996 to 2001 (4,3% against a national average of 3,6%), whereas the Cape Town city region leads the pack in the 6-year period 2001 to 2007 (3,0% compared to a national average of 2,1%). However, this illustrates the pressure that city regions such as Gauteng and Cape Town are under to create jobs at a rate higher than the national average in order to absorb increasing numbers of work-seekers in their city-region boundaries.

The data also suggests a strong increase of the Black population within the economically active component of the population in the metropolitan areas. Almost 50% of all **growth of the Black population in the country since 1996 seems to have been within the city regions**, with five of the metros alone accounting for 48.4% of this growth, amounting to an actual increase of more than 3.4 million in the Black population (1996-2007, Quantec) within the city-region areas.

The data also suggests that the city regions and cities, even though amongst the most prosperous regions in the country (with the six metropolitan areas housing 68% of South Africans in the high-income category according to the StatsSA 2007 community survey), are **home to a significant number of the country's population living in poverty**. Strong concentrations of people living below minimum living level are found in the city-region areas and cities, with 34% of all people in the low-income category (StatsSA 2007 community survey) concentrated in the six metropolitan areas alone. The biggest poverty seems also to be in the metros and cities (see 2004 analysis, NSDP, 2006), while the metropolitan areas are also amongst the main grant receiving municipalities (e.g. those receiving the biggest share of the national social grant allocation). Whilst dependency ratios are still relatively lower in the city regions and cities than in some of the populous districts especially within the Eastern Cape and KwaZulu-Natal, there is an interesting (and probably alarming) trend of increasing dependency ratios in some of the metros and cities because of the change in age structure of these areas.

Figure B7: City regions and cities: % Population living in poverty and GDP/Capita

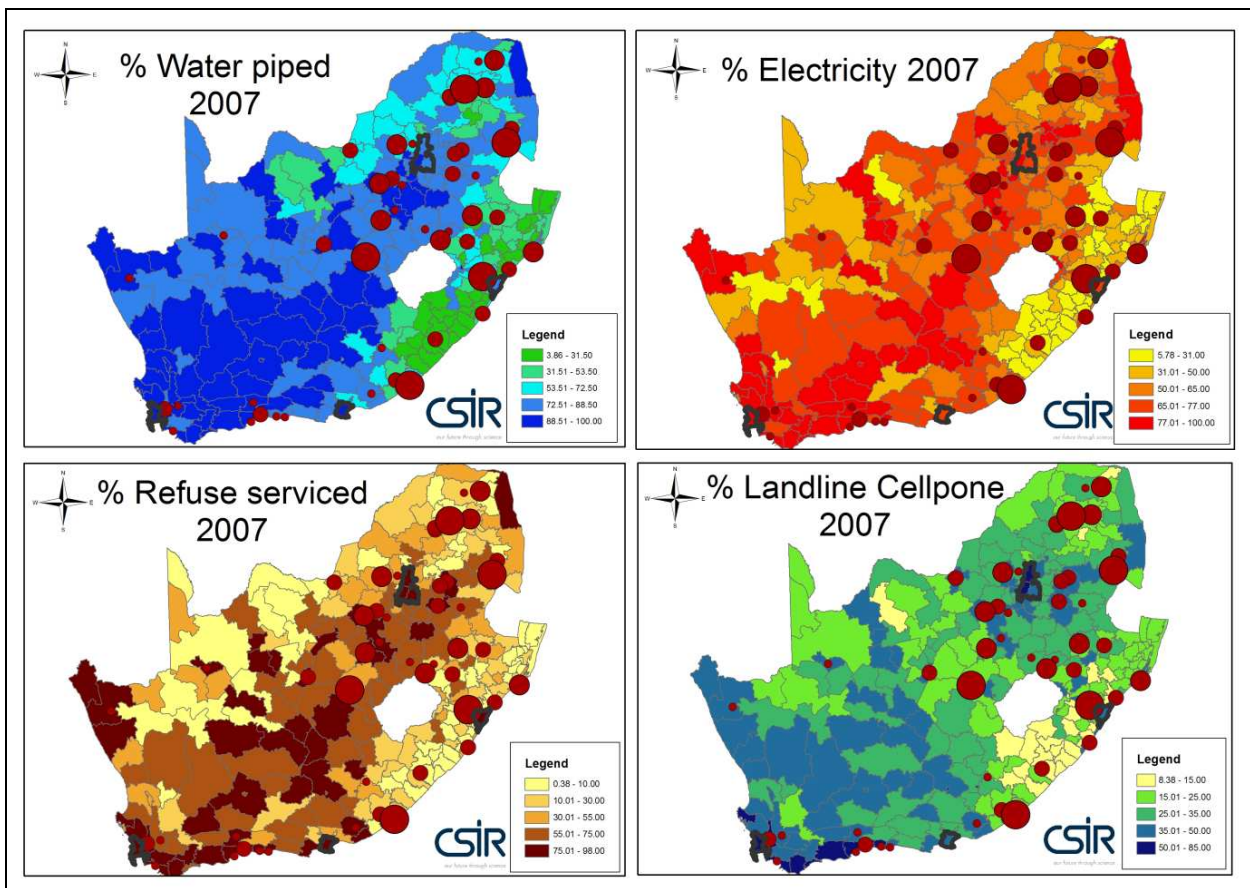


Source: GAP2, Using people under minimum living level (2004), GDP/capita (2004) as indicators.

In spite of significant impacts in **service delivery** within some district and metropolitan areas e.g. between 1995 and 2007 (Stats SA) – huge backlogs are still remaining (and probably increasing) in the metro areas, the areas also carrying the biggest increases in population and significant economic growth. This is the case for access to water, electricity as well as refuse removal (See Map B3).

What is evident from an analysis of available water resources (DWA 2004) is the **dependency of the Gauteng city region and other city regions on water transfers**. This raises questions regarding aspects such as payments for ecosystems, system interdependencies, as well as costs for e.g. down-stream pollution. Urbanisation in these areas can also be regarded as one of the main sources or pressures on land which result in the loss or degradation of natural vegetation and its biodiversity. The implications of increased demands for electricity provision in the city-region areas, together with the possible impact of peak oil prices, freight and logistics costs, commuting dependencies and urbanisation necessitates serious consideration for alternative technologies and effective management of natural capital and resources.

Map B3: Access to services as relating to metropolitan and local municipalities housing City-regions, Cities, Regional Service Centres



In terms of **governance arrangements**, the **cities** in this category can all be regarded as cities with relative highly developed governance capacity and playing significant functions as administrative centres. It would make sense to relate this analysis to that of municipal capacity as conducted for SALGA, as this category of cities would typically be cities that will be able to obtain the proposed Level B1 status.

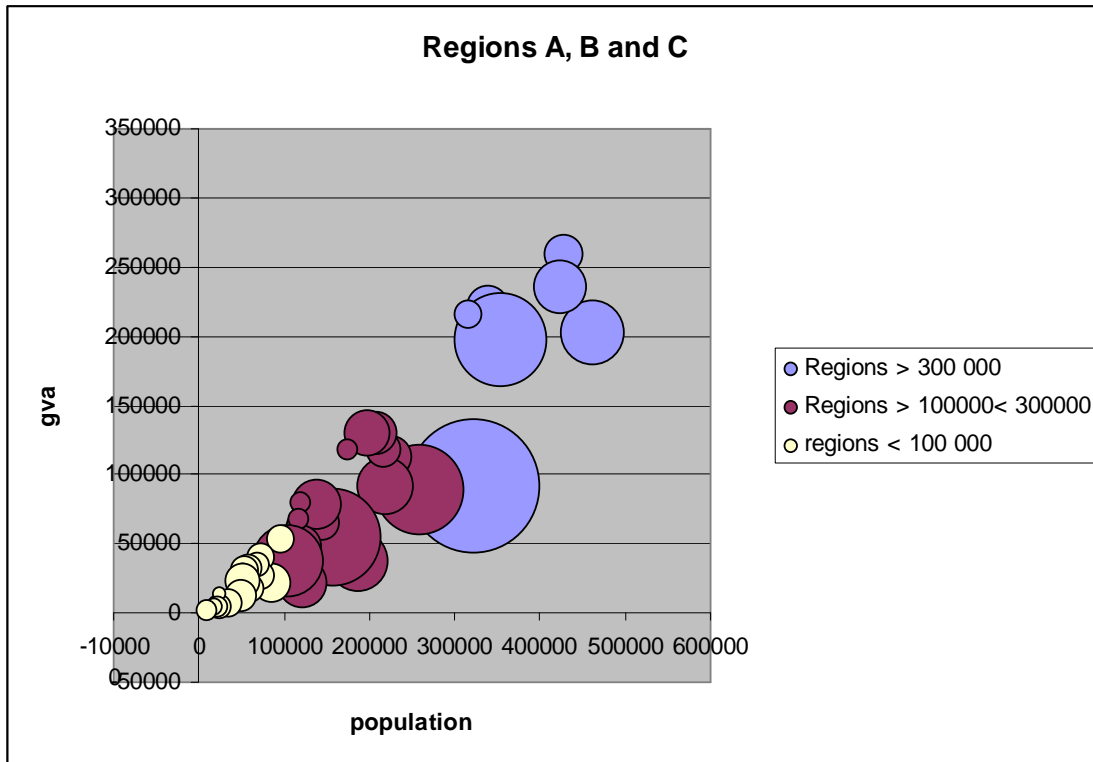
The **city-region areas** in most cases are comprised of relatively well capacitated metropolitan municipalities and district municipalities. However, a major concern is obviously how governance capacity, investment and arrangements respond to the challenges of service delivery, efficient infrastructure maintenance and investment and the integrated and sustainable functioning of these areas. The significance in the contribution to the economy of the country, housing significant percentage of the population and major impact on natural resources calls for integrated and unique seamless governance approaches and coordination across municipal and provincial, as well as sectoral boundaries in these areas.

Regional Services Centres

Towns that can be regarded as **regional service centres** within the context of this analysis differ substantially in size of population and economic activity (see Tables B1 and B3 for different ways of categorising and Figure B8 for comparisons). Regional service centres are towns that typically draw population for either service or economic opportunities, even though in lesser scale than cities and city regions (see the services index as illustrated in Figure B9 which could indicate this important function, even though substantially less than nodes in city-region areas and cities). They seem to be marked with **population growth**, regardless of growing/declining regional population.

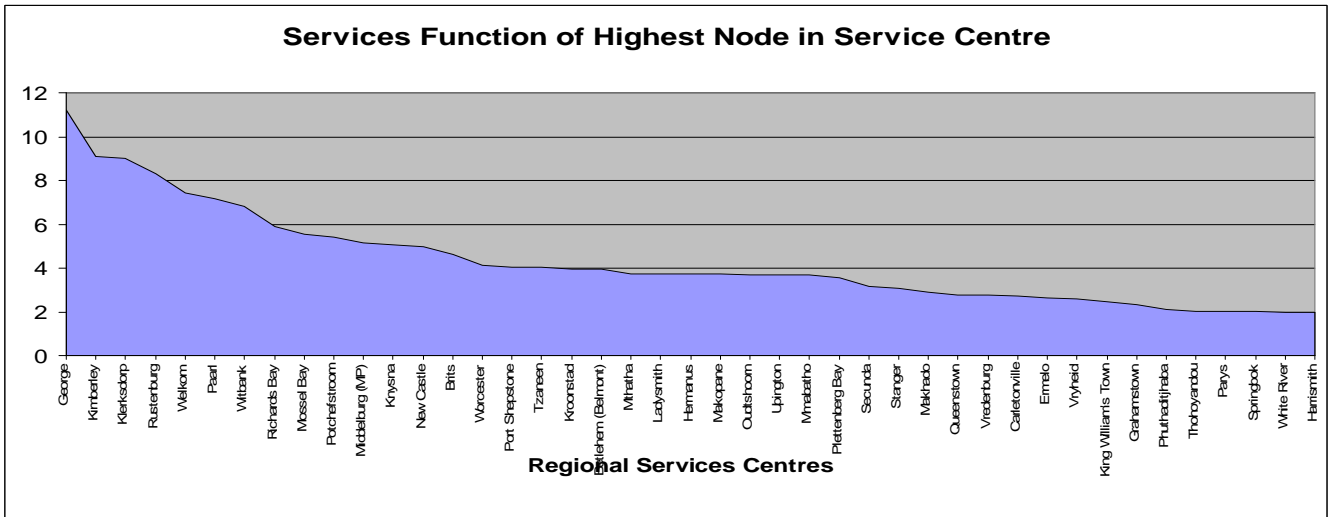
Increased concentration and agglomeration, importance of accessibility on major routes and corridors, as well as access to concentrations of economic activities, economic opportunities and livelihoods is evident. Migration and movement patterns indicate the importance of these regional service centres, not only in terms of the market or economic services role but also providing access to the government/public service centre role.

Figure B8: Regional Service Centres compared in terms of size of population, economic activity and people under minimum living level (bubble size)



Source: GAP2 (GVA, 2004), People under minimum living level and population (2004).

Figure B9: Regional Service Centres compared in terms of the size of the service function of the highest node within the settlement



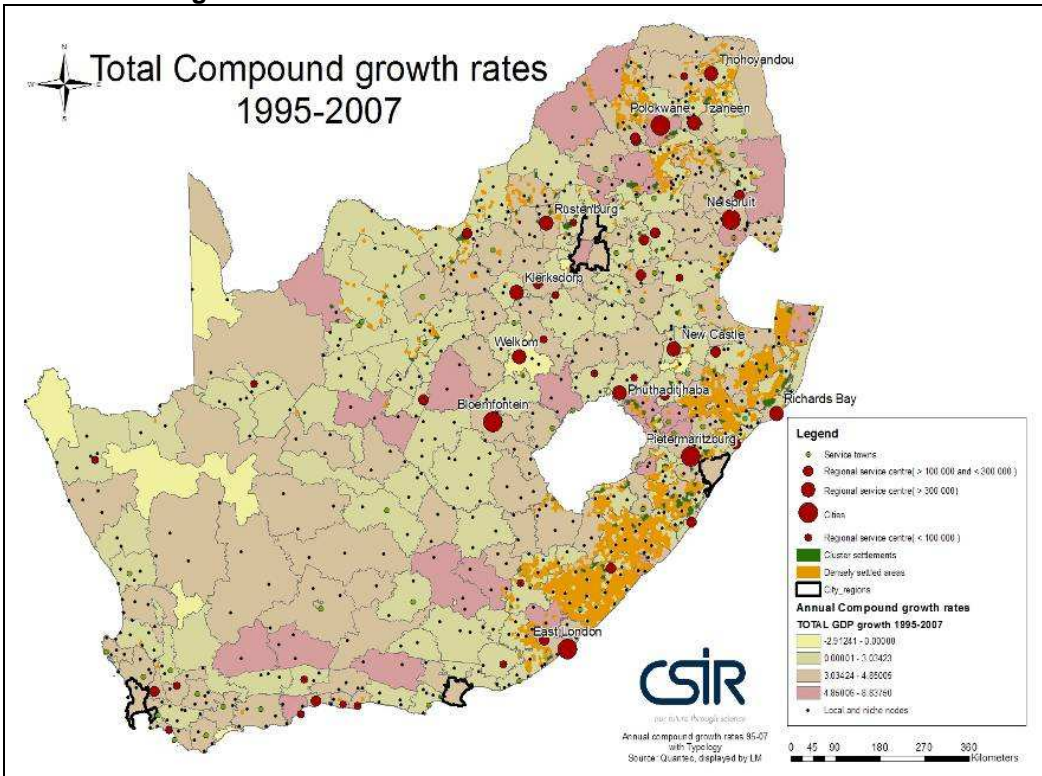
Source: GAP2, UFI Index (Stats SA) as spatially allocated.

Table B3: Regional Service Centres ranked according to Population Size

Criteria for typologies	FUNCTIONAL AREA	LM_name	PROV_2004 population	2004 people <MLL	2004 econ activity (gva)	Area	
Significant Regional Service Centres * Major Service Function Role in region & hinterland * UFI above 2 * Significant in dense OR sparsely populated hinterland * Most have significant numbers of poverty in relation to population * Broken down into 3 sub-classes in terms of population size: * To be added: Trends & Significance in LM&DM	(1) A: population above 300 000	Welkom	Matjhabeng Local Municipality FS	462465.00	202679.00	7711739	88128
		Tzaneen A	Greater Tzaneen Local Municipality LIM	428938.00	258567.00	3227789	115230
		New Cactle A	Newcastle Local Municipality KZ	424417.00	235326.00	5311251	98228
		Klerksdorp/Stilfontein	Matlosana Local Municipality NW	363356.00	202222.00	9141327	94744
		Thohoyandou A	Thulamela Local Municipality LIM	339793.00	220742.00	3598120	64270
		Richards Bay/Empangeni	Mtubatuba Local Municipality KZ	354879.00	196800.00	15909609	132584
	Rustenburg A	Rustenburg Local Municipality NW	323963.00	91118.00	31665459	127934	
	Phuthadijhaba	Maluti a Phofung Local Municipality FS	316268.00	215761.00	1821324	18996	
			6.37	6.91	6.37	0.61	
	(2) B: population between 100 000 - 300 000	Witbank A	Emalahleni Local Municipality MP	259432.00	88900.00	14595234	122928
		Port Shepstone/Margate A	Hibiscus Coast Local Municipality KZ	225636.00	112961.00	3266897	86052
		Kimberley A	Sol Plaatjie Local Municipality NC	218384.00	90848.00	6396806	33149
		Ladysmith A	Emnambithi-Ladysmith Local IKZ	217630.00	117576.00	2450779	126256
		King Williams Town A	Amahlathi Local Municipality EC	209136.00	129368.00	3253219	67127
		Mthatha A	King Sabata Dalindyebo Local EC	199059.00	129368.00	3976692	42371
		Paarl/Wellington A	Drakenstein Local Municipality WC	187480.00	36661.00	6833612	61478
		Makopane A	Mogalakwena Local Municipality LIM	175431.00	117721.00	1076714	54527
		Secunda A	Govan Mbeki Local Municipality MP	157429.00	53987.00	16488719	50854
		Stanger A	KwaDukuza Local Municipality KZ	144502.00	64404.00	2706745	46520
		Mmabatho A	Mafikeng Local Municipality NW	138709.00	78683.00	4432834	42768
		George A	George Local Municipality WC	121218.00	21048.00	4486536	45141
		Vryheid A	Abaqulusi Local Municipality KZ	120168.00	79125.00	862249	55205
		Potchefstroom A	Potchefstroom Local Municipality NW	119887.00	47890.00	3488948	50201
		Hazyview A (Hazyview White)	Mbombela Local Municipality MP	116826.00	67254.00	1023547	27224
		Middelburg A	Steve Tshwete Local Municipality MP	104383.00	37022.00	9534805	49117
			5.74	5.42	6.90	0.79	
	(3) C: population under 100 000	Kroonstad A	Moghaka Local Municipality FS	97445.00	53093.00	1765603	19905
		Worcester A	Breede Valley Local Municipality WC	85643.00	20948.00	3138835	31732
		Bethlehem A (Belmont)	Dihlabeng Local Municipality FS	73110.00	39135.00	1474203	45072
		Upington A	//Khara Hais Local Municipality NC	72969.00	26968.00	1637063	39883
		Grahamstown A	Makana Local Municipality EC	69916.00	34919.00	1313956	23905
		Oudtshoorn A	Oudtshoorn Local Municipality WC	60030.00	16953.00	1779650	35445
		Queenstown A	Lukanji Local Municipality EC	58808.00	32279.00	1590893	28180
		Ermelo A	Msuligwa Local Municipality MP	55136.00	29982.00	1627991	24907
		Parys A	Ngwathe Local Municipality FS	52555.00	30791.00	531618	9795
		Brits A	Local Municipality of Madibeng NW	52091.00	22873.00	2614081	34170
		Mossel Bay A	Mossel Bay Local Municipality WC	49467.00	12458.00	1862468	20161
		Knysna A	Knysna Local Municipality WC	35205.00	7233.00	1537202	21857
		Hermanus A	Overstrand Local Municipality WC	24571.00	4526.00	1147294	12015
		Harrismith A	Maluti a Phofung Local Municipality FS	24054.00	12968.00	372040	15833
		Plettenberg Bay A	Bitou Local Municipality WC	22493.00	4237.00	1000095	26545
		Springbok A	Nama Khoi Local Municipality NC	17459.00	4536.00	585590	5537
		Makhado A	Makhado Local Municipality LIM	9728.00	1821.00	1100308	10913
			1.82	1.51	2.04	0.33	
REGIONAL SERVICES CENTRES							
% of RSA TOTAL			13.92	13.84	15.31	1.73	

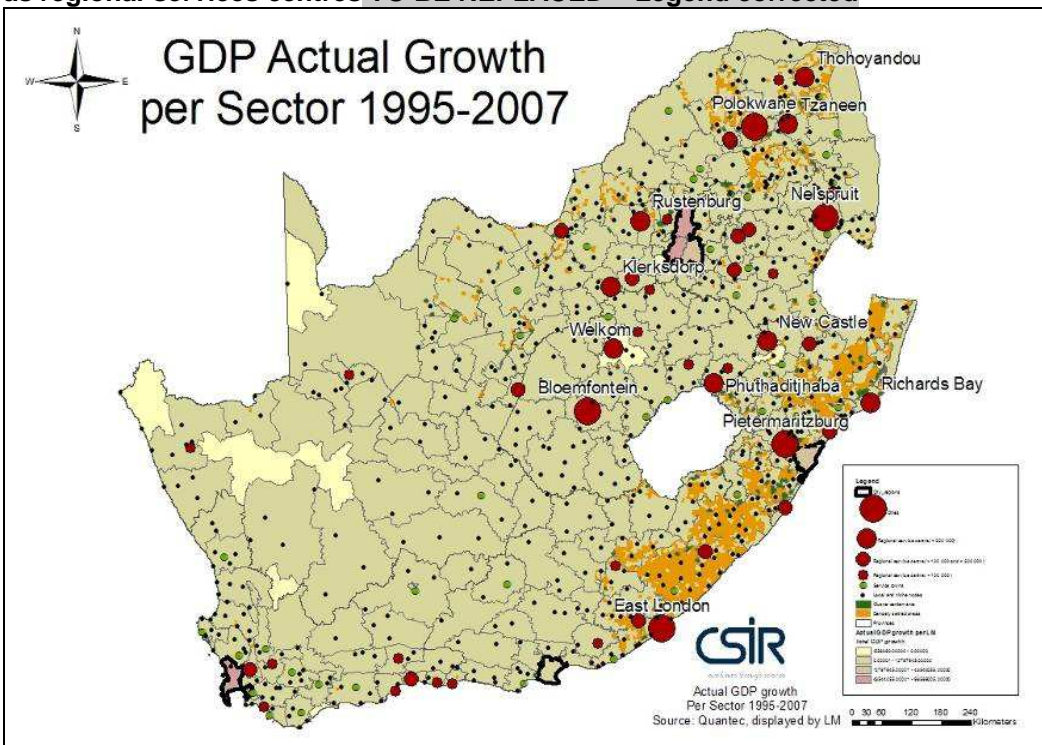
Most regional service centres experienced **economic growth** – even though varying substantially and mostly under the national average (see Maps B4 and B5). Economic decline is mostly evident in some traditionally resource-base economies, associated often with a decline and scale down of the mining industry and jobs. Growth is not always associated with job growth and some economies are largely dependent on government services. The impact of household income in creating economic and **livelihood opportunities** in regions with high numbers of population, usually former Bantustan areas and city regions, is obvious.

Map B4: Average economic growth rate as illustrated per municipality in relation to areas/settlement identified as regional-services centres



Source: Economic growth rate calculated by using 1995-2007 Gross Domestic Product/Local Municipality (Quantec data)

Map B5: Total actual growth as illustrated per municipality in relation to areas/settlement identified as regional-services centres TO BE REPLACED – Legend corrected



Source: Economic growth calculated by using 1995-2007 Gross Domestic Product/Local Municipality (Quantec data).

The diverse roles and interconnectedness of different regions, system of spaces and the respective towns, in this case termed regional service centres, seem evident. It seems that the **character of population and economy of regional service centres depends largely on the hinterland and function**. Amongst the so-called regional service centres, the following seems to be broad ways in which the hinterland influences the role and character of regional service centres evident, especially in relation to the following (also see Table B1):

- (1) **Regional Service Centres in regions where the primary sectors such as mining and agriculture** play a significant role in the district area. Depending on the resource economy, these towns are either economically growing, such as Bojanala (Rustenburg), Ekangala (Witbank/Middelburg) and Govan Mbeki (Secunda) or declining such as Welkom. These places are often characterised with higher per capita income, relative lower levels of dependency, increasing economically active population and in-migration and huge pressures to cope with service delivery, housing and diversification of the economy.
- (2) **Regional Service Centres that are relatively populous and in densely settled areas** (such as Mthata and Toyando), usually large towns and/secondary cities within high density areas where significant portions of the areas have been part of former Bantustan areas and host large numbers of people with less prominent and less diverse economic activity. These places are often characterised with low per capita income, high levels of dependency, decreasing economically active population and out-migration and huge pressures to cope with service delivery, housing and diversification of the economy.
- (3) **Regional Service Centres playing key service functions within more isolated areas** (such as Uppington and Springbok). These places are often characterised with low per capita income, high levels of dependency, huge pressures to cope with service delivery, housing and diversification of the economy.

Service delivery trends seem to be quite diverse in the regional service centres – with relatively low levels of needs in some areas, whilst high needs and growing backlogs (mostly due to natural growth) in the more populous regional service centres. The service needs and huge costs of infrastructure and services of dispersed communities typically place huge financial burdens on regional service centres. Financial viability of local authorities (municipalities) responsible for these centres, as well as the centres playing critical service functions in arid and sparsely populated areas, caused by high costs of infrastructure provision and maintenance, is a major challenge faced.

Pressures and interdependencies on natural resources, eco-systems and development for sustainable futures are also generally related to increased population, as well as the resource environment in which the regional service centres are located. The pressure on land capability and challenges seem to be quite harsh in the former Bantustan areas, as well as in the arid parts of the country.

These challenges hold some critical **governance implications**, such as the role and prominence of the regional service centres in providing access to livelihoods and services. This especially relates to the range of public services seem to suggest that there would be some of the better capacitated towns in this category that could typically be considered for taking more responsibility for service delivery with increased mandates according to the Type B1 and C1 functions as set out in the SALGA proposals for Local Government¹⁶.

Services Centres, Local and Niche Towns

Service centres, as well as local and niche towns, are probably more evenly spread out through the country and differ substantially in terms of the local regions that they serve – both in terms of economic and population growth/decline. As indicated in the introduction, the **range of smaller towns** that seems evident from the analysis typically includes the following:

One: Towns with varying size populations and economies that are mostly fulfilling the role of **service centres** within a local area or region (see Table B4). These towns are usually associated with a particular range of services (in this case with service indexes (UFI) between one and two) and fulfilling a service function for densely settled communities within the vicinity (e.g. Giyani), for a broader but more sparsely populated community on particular corridor/access routes (e.g. Vryburg), or within resource rich hinterlands

¹⁶ As discussed within the Policy Process on the System of Provincial and Local Government, National Consultative Workshop (11-12 October 2007)

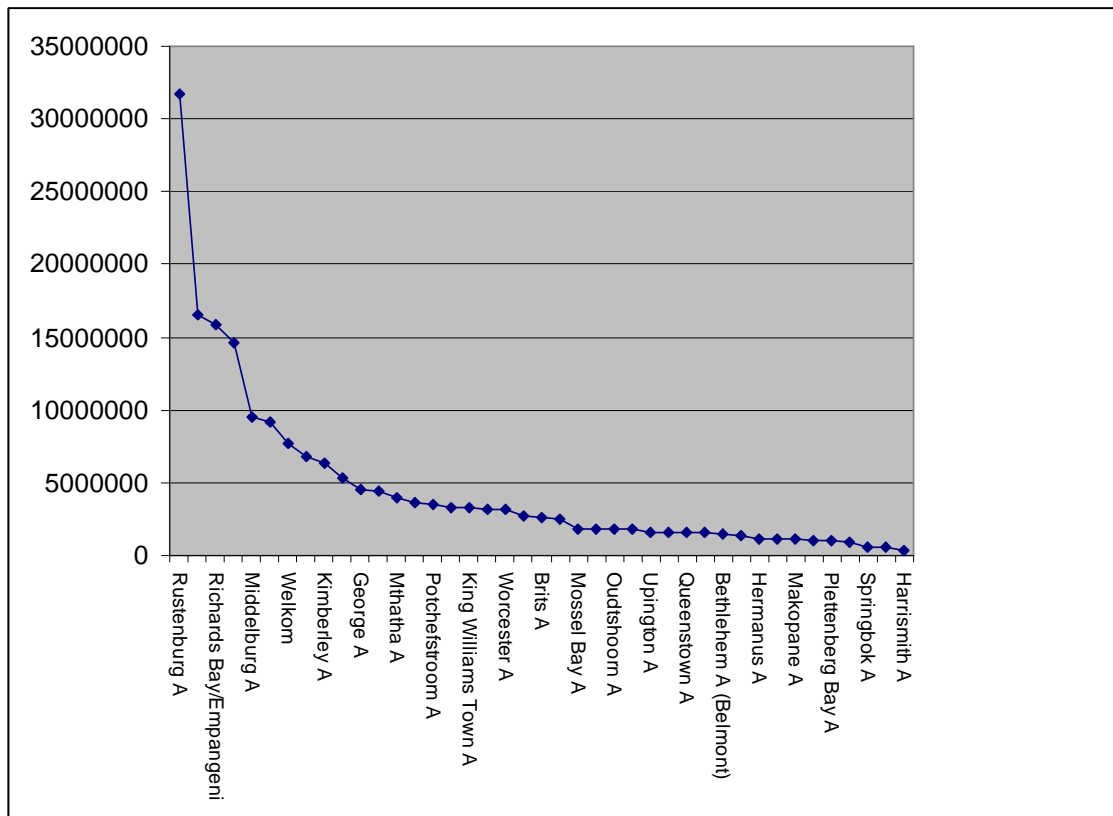
(e.g. Phalaborwa and Lephalale). The latter category is seemingly the towns with relative high levels of economic activity and per capita GVA (see Figure B10).

Two: Small towns that fulfil a **local service and/or niche function**. These niche functions could, for example, be nature and eco-tourism, such as in the case of Clarens, the art related tourism in Nieu-Bethesda, the wine and culinary related tourism of Franschhoek or even the rural lifestyle offered in the periphery of city regions by places such as Rayton near Pretoria, Riebeek-Kasteel near the City of Cape Town and Henley-on-Klip south of Johannesburg. These settlements are typically smaller in terms of population and economic activity. In some cases characterised by high economic growth rates (even though from a small base, such as the Karoo town of Prince Albert), or high population growth (typically places drawing migration from nearby areas and located on prominent access routes such as Alice on route to East London). In some areas these towns seem to bear evidence of decline (associated with economic stagnation and population decline in the surrounding area). An example of this could be Koppies, a typical service town for local farmers in the Free State.

It is obvious that the local regions, in terms of growing or declining population or economy, as well as movement patterns, would have a significant influence on these small towns. The scale of the data is not refined enough to make detail comparisons/deductions regarding trends in this regard. **Increased concentration and agglomeration**, and the relationship between the role and growth of small towns fulfilling the role of service and local centres, and their accessibility on major routes and corridors, and/or access to concentrations of economic activities, economic opportunities and livelihoods seem to be worthwhile exploring in more detail. The impact of household income in creating economic and livelihood opportunities in smaller towns within populous regions, such as former Bantustan areas and commuting areas in close proximity to city regions and cities, is obvious.

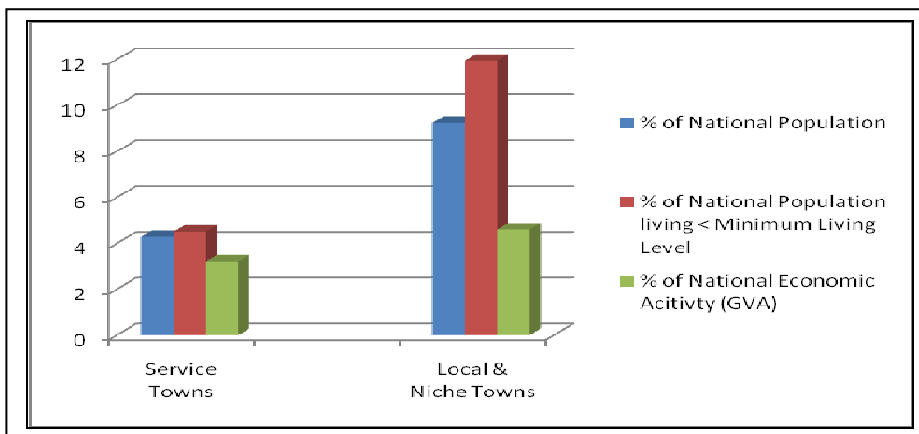
A more detailed analysis of trends in municipal and service delivery will be required to make any significant deductions regarding typical trends in terms of service delivery. The impact of dispersed settlements within service delivery (both maintenance and infrastructure investment) and financial viability of the respective local municipalities probably might be quite significant.

Figure B10: Service Centres compared in terms of the size of the economic activity (GVA in Rand Value, 2004)



Source: GAP2 (GVA, 2004).

Figure B11: Service Centres/Towns and Local and Niche Towns compared in terms of the size of the economic activity, population and people under minimum living level



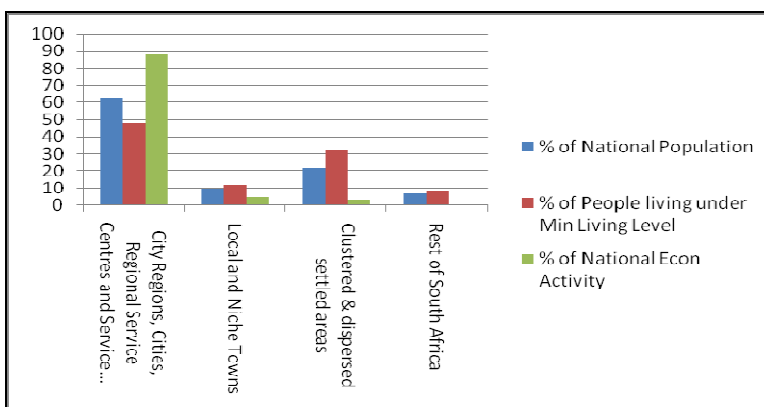
Source: GAP2 (GVA, 2004), People under minimum living level and population (2004)

Pressures and interdependencies on natural resources, eco-systems and development for sustainable futures are obviously related to increased population, as well as the resource environment in which the service centres are located. The state of natural resources in the environment is often critically aligned to the economic drivers of many of the small towns – especially those related to the agriculture and tourism industries.

Clustered and Dispersed Rural Settlements

As indicated, the settlement category termed **clustered and dispersed settlements** (see Map B5), in this analysis refers to 1) rural nodes and clusters, which are typically clusters of settlements with very limited service roles; and 2) densely settled rural areas/dispersed rural settlements which characterise the former Bantustan areas and are often under traditional land ownership. The clustered and dispersed settlements house 21% of the South African population and more than 32% of all people in South Africa living under the minimum living level (according to the 2004 analysis, GAP2) in densely settled areas in former Bantustans. These areas are often without significant service centres. Even though these settlement areas are mostly located in regions where strong out-migration trends seem to be prevalent, they are still illustrating net-growth because of high numbers in population and high levels of natural population growth (GAP2).

Figure B12: Clustered and dispersed settlement areas compared in terms of the size of the economic activity, population and people under minimum living level



Source: GAP2 (GVA, 2004; Population and People under minimum living level, 2004).

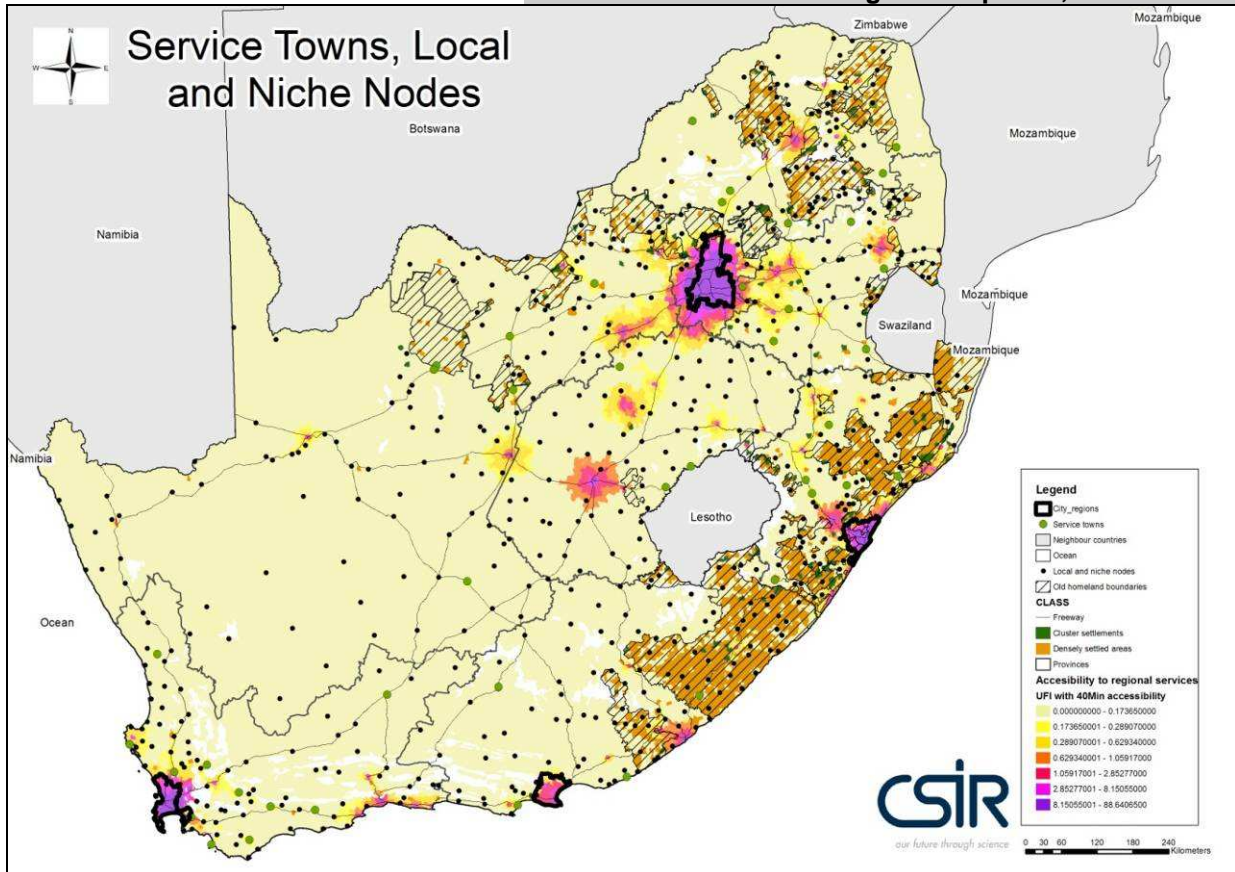
Table B4: Service Centres identified in the analysis and ranked according to Economic Activity (GVA, 2004)

* Centres with a population size of more than 100 000 have been marked

Settlement Area	Local Municipality	District Municipality	Province	Population 2004	Econ Activity (GVA, 2004)
Phalaborwa/Namakgak	Ba-Phalaborwa Local Municipality	Mopani DM	NP	113912	6031258
Saldanha	Saldanha Bay Local Municipality	West Coast DM	WC	47743	2520598
Standerton A	Lekwa Local Municipality	Gert Sibande DM	MP	14139	2240850
Lichtenburg A	Ditsobotla Local Municipality	Central DM	NW	32978	1800885
Lephalale A	Lephalale Local Municipality	Waterberg DM	NP	13461	1760505
BUSHBUCKRIDGE	Bushbuckridge Local Municipality	Ehlanzeni DM	MP	245339	1571548
Giyani	Greater Giyani Local Municipality	Mopani DM	NP	63016	1280629
Ceres A	Witzenberg Local Municipality	Cape Winelands DM	WC	33853	1186691
Butterworth A	Mnquma Local Municipality	Amatole DM	EC	78427	1112871
Jeffreys Bay	Kouga Local Municipality	Cacadu DM	EC	36569	1078676
Malmesbury A	Swartland Local Municipality	West Coast DM	WC	30960	1078246
Bela-Bela A	Bela-Bela Local Municipality	Waterberg DM	NP	35354	1076323
Vryburg A	Naledi Local Municipality	Bophirima DM	NW	299472	905279
Kuruman A	Ga-Segonyana Local Municipality	Kgalagadi DM	NC	63749	864719
Hartswater	Phokwane Local Municipality	Frances Baard DM	NC	78872	834355
Delmas	Delmas Local Municipality	Nkangala DM	MP	42086	819127
Swellendam A	Swellendam Local Municipality	Overberg DM	WC	16770	803450
Modimolle A	Modimolle Local Municipality	Waterberg DM	NP	30230	717264
Robertson A	Breede River/Winelands Local Muni	Cape Winelands DM	WC	20441	713841
Bethal A	Govan Mbeki Local Municipality	Gert Sibande DM	MP	50902	709818
Barberton A	Umjindi Local Municipality	Ehlanzeni DM	MP	29004	672735
Eshowe A	uMlalazi Local Municipality	Uthungulu DM	KZ	59472	641714
Vredendal A	Matzikama Local Municipality	West Coast DM	WC	42516	630249
Dundee A	Endumeni Local Municipality	Umzinyathi DM	KZ	44187	619854
Graaf-Reinet A	Camdeboo Local Municipality	Cacadu DM	EC	36134	610685
Beaufort West B	Beaufort West Local Municipality	Central Karoo DM	WC	32309	549838
Estcourt A	Umtshezi Local Municipality	Uthukela DM	KZ	35082	535195
Piet Retief A	Mkhondo Local Municipality	Gert Sibande DM	MP	32166	532172
De Aar A	Emthanjeni Local Municipality	Pixley ka Seme DM	NC	30115	528890
Grabouw A	Theewaterskloof Local Municipality	Overberg DM	WC	26267	505341
Lydenburg B	Thaba Chweu Local Municipality	Ehlanzeni DM	MP	15545	448694
Groblersdal A	Greater Groblersdal Local Municipa	Greater Sekhukhune DM	NP	9296	447969
Bothaville	Nala Local Municipality	Lejweleputswa DM	FS	47293	412890
Bredasdorp B	Cape Agulhas Local Municipality	Overberg DM	WC	12189	402529
Hoedspruit A	Maruleng Local Municipality	Mopani DM	NP	1748	397947
Ficksburg	Setsoto Local Municipality	Thabo Mofutsanyane DM	FS	36825	352765
Greytown B	Umvoti Local Municipality	Umzinyathi DM	KZ	22155	344138
Ladybrand A	Mantsopa Local Municipality	Motheo DM	FS	21368	328482
Gansbaai B	Overstrand Local Municipality	Overberg DM	WC	6706	318098
Riversdale B	Hessequa Local Municipality	Eden DM	WC	11770	311099
Kokstad B	Greater Kokstad Local Municipality	Sisonke DM	KZ	21957	268221
Port Alfred B	Ndlambe Local Municipality	Cacadu DM	EC	20290	241953
Moorivier B	Mooi Mpofana Local Municipality	UMgungundlovu DM	KZ	12168	153916
Siyabuswa	Dr JS Moroka Local Municipality	Nkangala DM	MP	70794	137611

Map B5: Clustered and Dispersed Rural Settlements

TO BE REPLACED – Legend simplified, towns added



This category of settlements also clearly illustrates the South African reality (and apartheid legacy) of **high density peripheral development where large numbers of people are settled with limited access to major formal and informal economic activity**. The 2006 analysis (Quantec) of employment per sector also indicates the low numbers of employment in the central parts of the country with relative low levels of population. However, a similar trend of low numbers in employment is also reflected in the populous districts of the Eastern Cape, KwaZulu-Natal and Limpopo.

Out-migration is significant from many traditionally densely populated districts on the Eastern Cape and KwaZulu-Natal coastal areas and Eastern Cape inland areas. However, natural growth still boosts the already significant portion of population, especially people living under minimum living level in these areas. It is interesting to note that some in-migration seems to be taking place in the Limpopo and KwaZulu-Natal northern border areas, as well as in regional service centres within the densely populated districts areas.

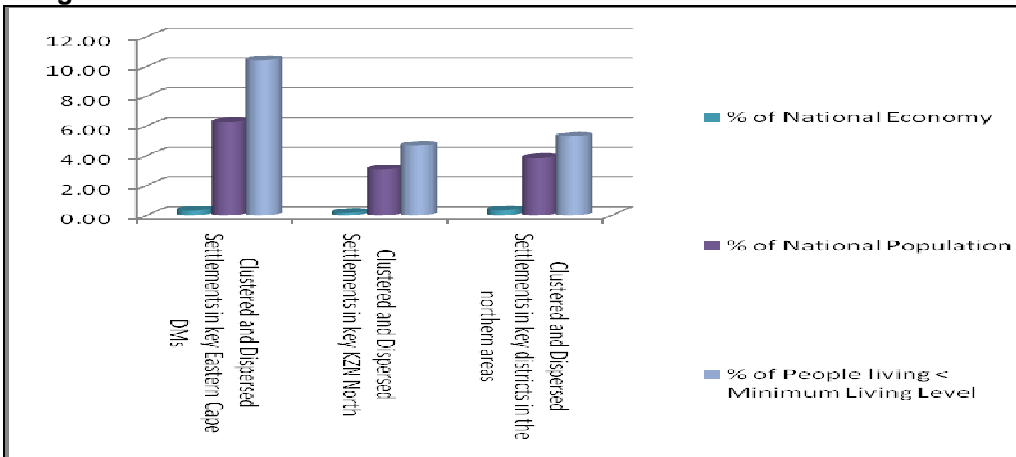
A significant change seems to be taking place in the profile of districts/regions with traditionally high numbers of people, poverty and dependency ratios in terms of youth, economically inactive population and grants. These areas (mostly former Bantustan areas with limited economic activity) are characterised by outward migration and a decline in young population. Dependency ratios are still high. In the Eastern Cape and Limpopo during the year 2007, still more than 70% of the provincial population were dependents (Stats SA from Quantec).

These settlements are outstretched. The **three prominent areas** within this group are (see Figure B13):

- (1) The **Eastern Coast** (Eastern Cape Province) – basically this is the former Transkei and Ciskei areas, characterised with almost no regional service centres, declining areas/regions in terms of the economy, natural population growth, out-migration trends, as well as high dependency ratios (Stats SA 1996-2007 data from Quantec). Districts in this area include the district municipalities of Ugu, Sisonke, Alfred Nzo, OR Tambo, Amatole and Chris Hani. The reality is that most of these areas are characterised by stark differences between the coastal development strips and nodes on the one hand and the inland areas on the other.

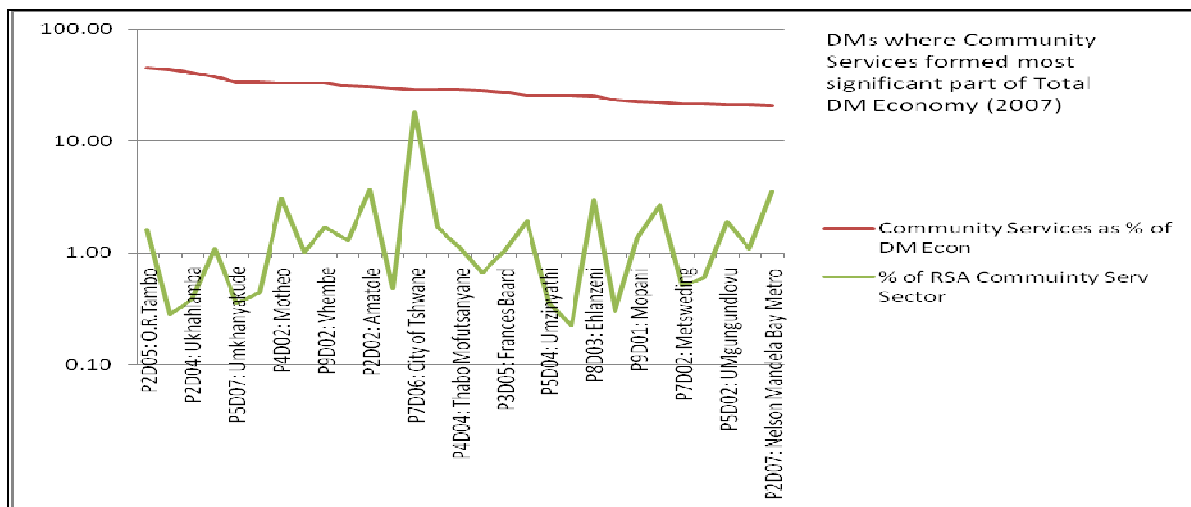
- (2) The **northern KwaZulu-Natal areas** – also located in former Bantustan areas. These districts, including Zululand, Umkhanyakude, Umzinyathi and Uthungulu are marked by an increase in population, mostly from natural growth but in some cases also by in-migration. The districts in these areas illustrate better prospects in terms of economic activity and growth, with especially the district of Uthungulu (Richards Bay area) illustrating an increase in economic growth and economically active population. As in the Eastern Cape the reality is that most of these areas are characterised by stark differences between the coastal development strips and nodes on the one hand and the inland areas on the other. The difference is, however, that these areas have a few relatively well-functioning service centres (Stats SA 1996-2007 data from Quantec).
- (3) The third area, prominent in this category, is that located in the **northern parts of the country** (Limpopo and Mpumalanga provinces). This would include clustered and dispersed settlements in the Limpopo areas around the N1 and N4 access routes and the Gauteng-Sekhukune corridor, including the districts of Vhembe, Capricorn, Greater Sekhukhune, Ehlanzeni, Mopani, Bojanala and Waterberg (Stats SA 1996-2007 data from Quantec). It is note worthy that these settlements seem more densely developed, and are within areas that are more easily accessible and illustrate some economic growth (especially related to natural resources).

Figure B13: Clustered and dispersed settlement areas in the various regions of the country, compared in terms of the size of the economic activity, population and people under minimum living level



Source: GAP2 (GVA, 2004; Population and People under minimum living level, 2004).

Figure B14: District municipalities largely housing clustered and dispersed settlements, compared in terms of the significance of the Community Services Sector within their own economies, and within the Sector as a whole



Source: GAP2 (GVA, 2004).

Where these settlements are associated with **declining economic areas**, it is most often district economies largely **dependent on government services**, even though these are relatively small contributions in terms of the national Gross Value Added Product (GVA) generated through government

services (see Figure B14). The district economies are also marked with little employment prospects and characterised with traditional land ownership.

In spite of a significant impact in terms of **service delivery** over the last decade, relative large percentages of population within the settlements/areas still lacking access to services – this also forms a substantive amount of people in South Africa without services (Stats SA, 1996-2007 from Quantec).

It is obvious that rural areas cannot sustain pressures of large numbers of the population attempting to be self-sufficient or 'live of the land'. 'Productive, sustainable, just and liveable cities' can only emerge when South Africans recognise that 1) they depend on rural environments that are also 'productive, sustainable, just and liveable' and 2) that this requires redressing the current imbalances in some way. There might be some value in exploring the 'node, corridor, region' approach in order to address the realities of limited **natural resources**, equity and sustainability.

PART C: Questions, Implications and Challenges

As indicated in the introduction, it can be argued that the South African government made significant progress over the last 15 years in establishing a democratic governance system and building governance capacity and instruments; addressing poverty and delivering services, etc. One of the key questions raised, however, is how can this be enhanced and be built upon in the next 15 years?

In recognition of government's key policy and governance imperatives on the one hand and key societal forces on the other, the process of revising the National Urban Development Framework and subsequently **this analysis, argue that it is important to take cognisance of national spatial trends and dynamics as the** challenges evident in the space economy, population distribution and state of natural resources have obvious implications for the following:

- Government in meeting its targets of shared economic growth, sustainable development and service delivery and increasing quality of life for South African citizens within their specific contexts;
- Developing and sustaining regional economies and livelihoods for the future;
- Sustainable development and meeting the grand challenges such as climate change and scarcity of natural resources;
- Institutional and management capacity, regional institutions and networks; and
- Informing developmental and investment frameworks.

In conducting a more nuanced reading of spatial and temporal data and information, the analysis attempted to identify trends that could potentially (and most probably already do) have significant impacts on governance and service delivery challenges. It contributed to the discourse by inter alia exploring major changes and trends in the space economy and system of settlements. In this it identifies and starts raising questions about the seemingly diverse characteristics and inter-connected roles of 1) the system of spaces, and very specifically the system of urban areas and nodes (settlements) ranging from dispersed settlements to small service centres and towns, up to the major centres and city areas, and 2) specific regions in the country.

The analysis suggests the consideration and relevance of context-specific government policy, programmes and priorities, such as diversified objectives and interventions, targeted and nuanced infrastructure investment in support of social, economic and environmental objectives, sustainable and effective service delivery, as well as intergovernmental prioritisation, resource allocation and implementation.

The analysis could probably be much more useful if also supported by additional (and in some cases already existing) explorations into reasons behind/causes for the significant trends and regional and nodal specific manifestations.

How government responds to these challenges, would obviously largely depend on whether these trends, such as continued urbanisation, will be acknowledged OR merely ignored, and secondly whether they are viewed as opportunities and red flags to refocus approaches to development and service delivery OR viewed as trends that could be 'turned around'.

In conclusion, from the analysis it is obvious that the city regions, the dispersed rural settlements, as well as the cities and major service centres/towns are crucial places where the future of people, the economy, service delivery and the natural environment will most probably be played off. It is evident that the roles and relationships between the centres/settlements and the regions are important. For government to meet service delivery demands in terms of quality of life and effective delivery for the largest number of people,

the analysis suggests a focus on maintaining quality services in city regions, cities, regional service centres and establishing service centres within the clustered and dispersed rural settlements. This will require the recognition that the regions and settlements (and nodes within these settlements) differ substantially in role and character, as well as in terms of the interventions and investments required to ensure sustainable development.

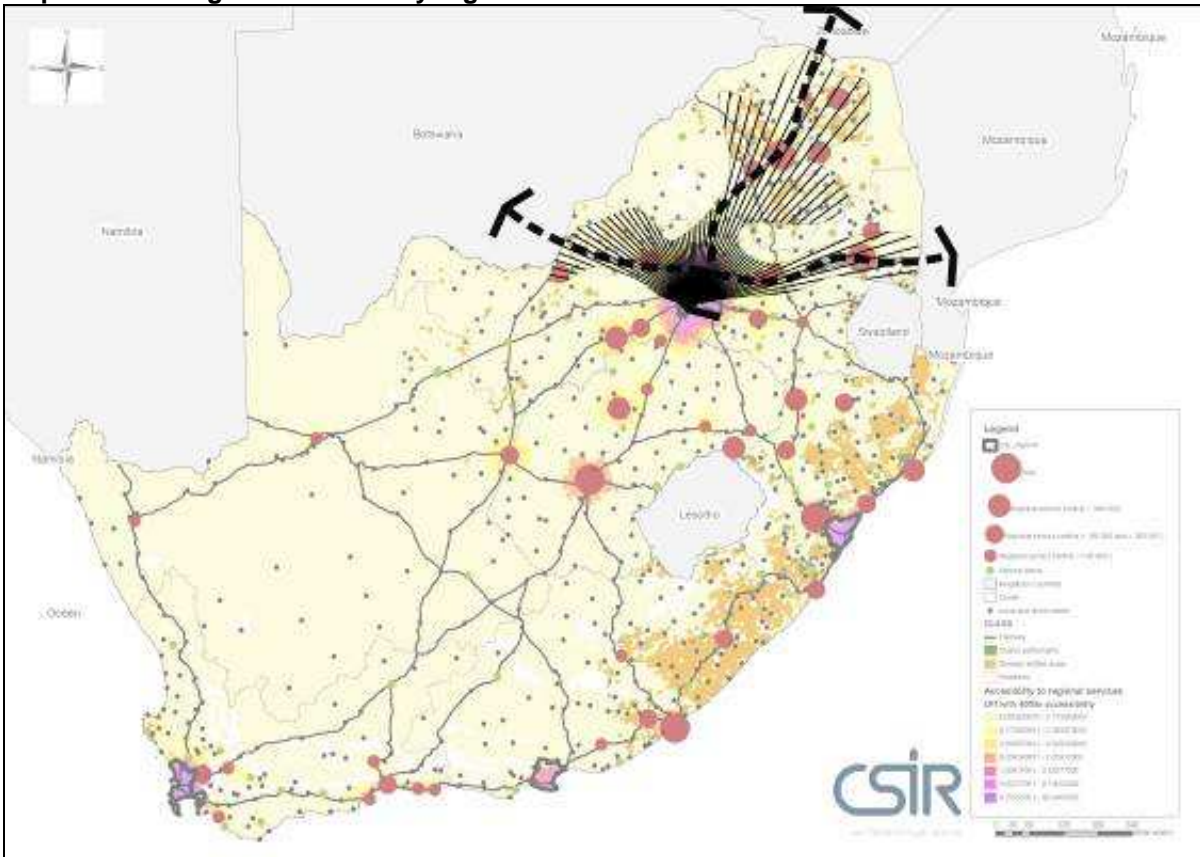
Viewing the data and trends in this context, strong evidence seem to be emerging that the future of South Africa and its citizens, and the crucible for government in delivering on its objectives, in many ways hinge on the future of:

- The Gauteng and coastal city regions – which the data (2004, GAP2) suggests are not only home of more than 38% of South Africans on less than 2% of the land area, the engines of the South African economy and fiscus (65% of all economic activity) but are also the generators of growth, jobs and livelihood opportunities. These places are characterised by continued urbanisation and population growth, as well as increased poverty and higher dependency ratios. However, they are also the places that form the gateway to Africa and a continued continental and international presence for South Africa (ports, export/imports, etc).
- The densely settled clusters and dispersed settlements in the former Bantustans (home of 21% of the SA population and 32% of people living under minimum living level – GAP2, 2004). Significant together with these clustered and dispersed settlements are especially the limited number of towns that provide a regional services role in these areas – places such as Mthata and Thohoyandou that are in spite of seemingly strong out-migration trends in the surrounding areas, carrying the brunt of town-ward migration, continued natural population growth and huge dependency ratios, with economies largely geared towards government and community services and limited employment opportunities.
- Together with the above, another key set of places that play a critical role in providing access to public services, as well as livelihood opportunities within South and southern Africa are the cities and towns that provide a significant regional service centre role (and seemingly also bearing evidence of increased urbanisation and town-ward migration) within either the resource rich areas (areas that are seemingly characterised by growth in the economy and population), or within the sparsely populated areas of the country (where such centres still seem to be characterised by population growth and increased concentrations of poverty). Data (2004, GAP2) suggests that these cities and regional service centres are home to almost 20% of the population and 20% of economic activity in the country and that such cities and regional service centres located on key regional access routes and corridors are marked by higher rates of growth, both in terms of population and economic opportunities.

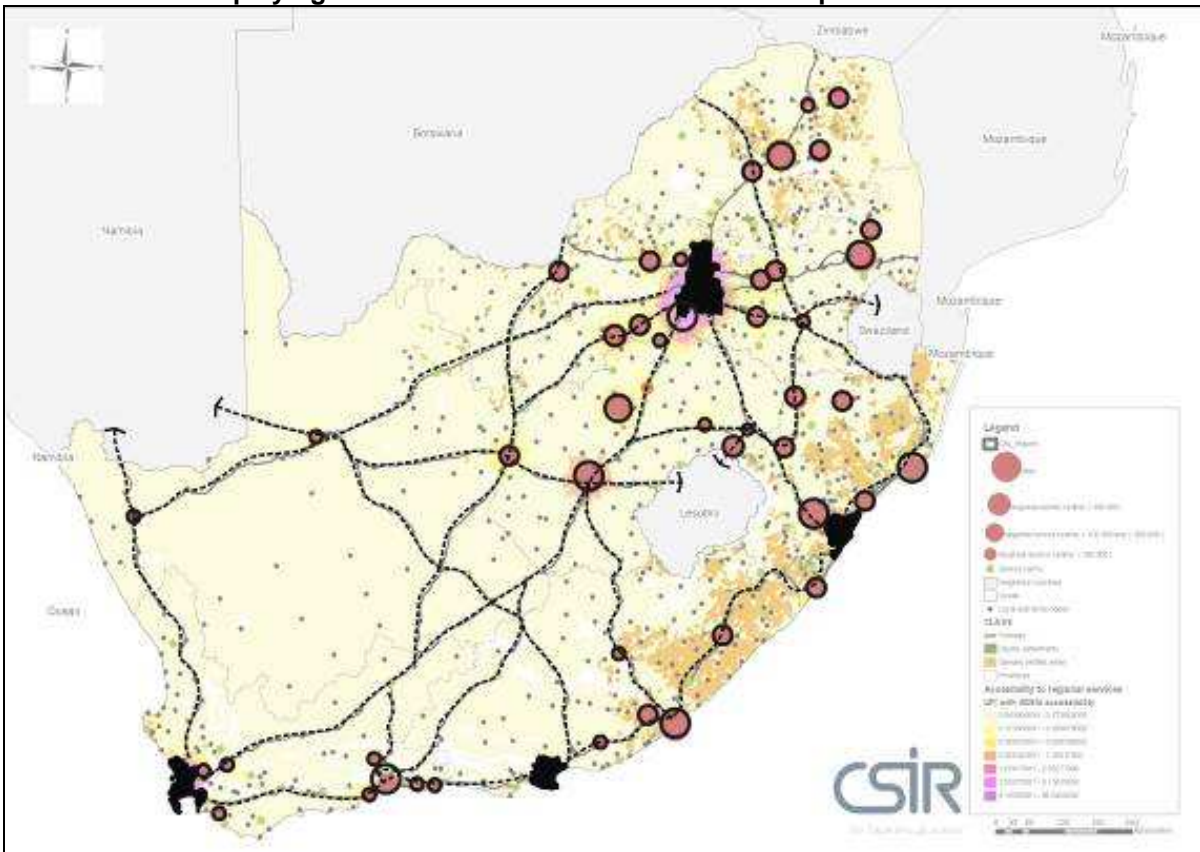
The analysis thus suggests that the places that are in many ways facing the biggest economic, service access, social and environmental challenges and hold the key to the future of the quality of life of the majority of South Africans and arguably the development of the country and the southern African region could be summarised as follows:

- The Gauteng and coastal city regions, key multi-nodal points of access to services and livelihood opportunities (Map C1);
- The Eastern Cape coastal and inland areas marked by dense rural settlements and limited number of regional service centre towns, as well as the dispersed settlements within the northern coastal regions (marked by slightly higher economic growth in the broader area – see Map C2);
- The northern access concentrations, marked by dense even though stronger concentrated rural settlements, and a range of regional service centre towns and cities, within areas of relative high regional accessibility and economic prospects (see Map C3); and
- The network of interlinked cities and regional service centres and cities, as well as local/niche towns playing critical services functions within their specific hinterlands (see Map C4).

Map C3: Gauteng and coastal city regions



Map C4: The network of interlinked cities and regional service centres and cities, as well as local/niche towns playing critical service functions within their specific hinterlands



The analysis highlighted key aspects for consideration. However, it is also evident that further work and research that will support and enhance government's policy and investment responses will be required in terms of the following:

- More detailed nodal and settlement analysis and comparison of trends;
- Projections and simulations in order to determine probable scenarios and future needs/demands;
- A more detailed understanding of the impact of external in-migration, pressures on services, impact of the lack of maintenance, as well as impact on energy and natural resources within the various regions and settlements;
- Interrogating the urban/rural classification currently used and exploring a more appropriate settlement identification/classification to inform decision making; and
- Communicating key messages and embarking on discussion with regards to possible implications of the suggested challenges with key decision makers and stake holders.

For government to meet service delivery demands in terms of quality of life and effective delivery for the largest number of people, the analysis suggests a focus on maintaining quality services in city regions, cities, regional service centres and establishing service centres within the clustered and dispersed rural settlements.

In conclusion, the analysis suggests that there is a need to ensure that the city regions and cities drive the economy and provides local access to livelihoods as well as international connection. It is important that these spaces and accessibility points can be sustained in terms of infrastructure, services and effective governance with a limited impact on natural resources. In addition hereto there is a clear need to 1) ensure that points of new growth (key regional service centres such as Richards Bay) are consolidated and 2) that a focus is placed on establishing service centres, diversifying the economic basis, as well as supporting job growth and service delivery in the clustered and dispersed settlements within the Eastern Cape, KwaZulu-Natal and northern corridor areas (Limpopo and Mpumalanga) – see Map C5.

Map C5: Critical settlements and functional regions

