

An illustration of regions in South Africa

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List of Acronyms

CSIR	Council for Scientific and Industrial Research
DBSA	Development Bank of Southern Africa
DHT	District Health Trust
DMs	District Municipalities
DMA	District Municipal Areas
DWAF	Department of Water Affairs
FET	Further Education Training
GAP	Geospatial Analysis Platform
GDP	Gross Domestic Product
HSRC	Human Science Research Council
LMs	Local Municipalities
MLL	Minimum Living Level
MMs	Metropolitan Municipalities
MPA	Marine Protected Areas
NSDP	National Spatial Development Perspective
OECD	Organization of Economic Cooperation and Development
PCAS	Policy Coordination and Advice Unit, The Presidency
SACN	South African Cities Network
SANBI	South African National Biodiversity Institute
TPA	Terrestrial Protected Areas
UFI	Urban Functional Index

Glossary of Terms

Dependency Ratio - The dependency ratio is indicative of the number of people dependent on those working, and can be divided into aged dependency and child dependency.

Deprivation Index - The deprivation index is a measure of relative deprivation across districts within South Africa. According to the District Health Trust: District Health Barometer 2007: "the deprivation index is a composite index of deprivation using Stats SA Census and household survey, recalculated to a district level. The index shows that the socio-demographic variables that have the greatest influence of deprivation in the SA context are: Lack of access to piped water, race, living in a shack or traditional dwelling, lack of access to electricity or solar power, living in a female headed household, being a child under 5 years, living in a household whose head has no schooling and being unemployed"

Employment - An activity in which a person is engaged for pay, profit or family gain or a combination of any of the three (Stats SA, Census 2001). Total employment as referred to in the Human Settlements Atlas includes: Formal employment: Employment that takes place in a business or organisation registered in any way, or in the public sector, or in a non-governmental organisation. A person in formal employment can be self-employed, an employer, an employee or a working family member. Informal employment: Employment that takes place in a small or micro business not registered in any way, e.g. making things for sale, or rendering a service privately. A person in informal employment can be self-employed, an employer, an employee or a working family member.

Gini coefficient - A low Gini coefficient indicates a more equal distribution of income amongst society, with 0 corresponding to perfect equality, while higher Gini coefficients indicate more unequal distribution, with 1 corresponding to perfect inequality.

Gross Domestic Product (GDP) - The total value of goods and services produced within the boundaries of a country in a defined period.

Gross Value Added (GVA) - Gross value added (GVA) is the difference between output and intermediate consumption for any given sector/industry. That is the difference between the value of goods and services produced and the cost of raw materials and other inputs which are used up in production.

Household - A household is a group of persons who live together and provide themselves jointly with food and/or other essentials for living, or a single person who lives alone (Stats SA, Census 2001).

Mesoframe / Mesozone - The CSIR's SA Mesoframe refers to a demarcation of South Africa into just less than 25 000 "mesozones" (or Standard Local Economic Areas), on average 50 km² (or roughly 7 by 7km) in size, and nested within important administrative and physiographic boundaries (CSIR, 2007. Geospatial Analysis Platform Version2)

Minimum Living Level - The measurement refers to the monthly amount a person would require to afford basic goods and services in order to survive.

Population - This term refers to the total number of people (i.e. individual persons).

Urban Functional Index (UFI) - An index 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.

1. Introduction and overview

It is axiomatic that for countries to achieve their development goals and objectives, an understanding of how welfare is created and how to cope with and possibly address spatial disparities is seminal in order to ensure that policy responses can be tailored to the specific circumstances and dynamics of sub-national territories. The simple logic driving this thinking is that sub-national territories are not uniformly good at everything displaying tremendous heterogeneity in their patterns of economic development, social exclusion and environment and resource use and the forces and factors shaping their evolution. Spatial unevenness and place based factors impacting on an areas development prospects can be assessed in a number of ways and at various scales. For example, The Presidency, with the support of the CSIR has just completed detailed and comparative district and provincial development profiles as part of the Territorial Review project (The Presidency, 2010). These profiles consist of a wide range of socio-economic and environmental data analysis to inform regional analysis and comparisons based on provincial, district and local municipal area boundaries.

This report complements these comparative profiles and provides a concise illustration of, or 'glance' of, broader regional dynamics in South Africa. For purposes of this discussion the term region is used generically to refer to sub-national territories and spaces and not administrative boundaries. From this perspective functional regions can be defined as sub-national territories constructed on the basis of select features and criteria.

As such, an illustrative overview and selected readings of the socio-economic and environmental data is provided from a regional perspective rather than on the basis of administrative boundaries. The idea being that the inter-relationships and spatial distribution of key national and regional scale socio-economic and environmental features and attributes do not manifest themselves neatly within administrative boundaries. To better understand the linkages and inter-relationships, these spatial features have to be assessed in their own terms and interconnections rather than through the limiting lenses of political and administrative geographies.

In an effort to move beyond administrative boundaries the report is organised around five themes using a selection of features and interrelationships that influence, and in some instances may actually have a bearing on not only the competitiveness, but also the resilience and vulnerability of regions. The themes are:

- Theme 1: Regions with substantial natural assets - The theme identifies regions of importance to uphold ecosystems, biomes and protected areas, as well as areas that are suitable for human occupation and livelihood. The section also includes a reading of areas in the country where natural resources play a role in terms of economic significance.
- Theme 2: Regions as actors of national growth – In this theme economic activity, growth, concentration and agglomeration factors are explored at a national level. National growth is also linked towards population trends and regional innovation.
- Theme 3: Regional assets and key drivers of regional growth – Regional development and growth are viewed in terms of regional assets and disparities, as well as regional economic activity and growth.
- Theme 4: Regional well-being and vulnerabilities - Including a conceptual illustration of the well-being of regions (health, education etc), accessibility to services, regional disparities and high levels of socio-economic vulnerabilities, as well as an identification of environmentally sensitive areas.
- Theme 5: Uniquely South African regional typologies, characteristics and challenges, pointing towards predominantly urban or rural characteristics within the context of traditional land ownership and apartheid spatial legacies still impacting regions.

Section 2 of the report explains the project background and purpose, whilst Section 3 provides an indication of the groundwork on which the data and analysis is based. A summary of the key attributes informing the respective regional illustrations in Section 4 is set out where relevant in View format. Section 5 focuses on providing a conclusion and highlights some possible next steps with regard to spatial and regional analysis.

2. Background and purpose

Regional development is a multidimensional concept and as argued by Nijkamp¹ is determined by a multiplicity of factors including natural resource endowments, quality and quantity of labour, sector, structure, physical infrastructure, entrepreneurial culture, public support systems and so on. Although regional development may be defined in various ways, it is generally concerned with the geographic distribution of welfare and its evolution and is, therefore, ultimately aimed at addressing two dominant questions: Firstly, how regional welfare and prosperity is created, and secondly, how to address inter-regional and inter-spatial disparities to achieve better spatial outcomes. Regional development therefore aims to trigger endogenous development dynamics by identifying the competitive assets and competencies entrenched in different regions and facilitating their valorisation.

The spatial interactions that occur, within, and between, the mosaic of functional regions nested within a hierarchy of regions often have a major influence in regional development. Regions are not tightly bounded spaces, but porous territorial formations whose notional boundaries are straddled by a broad range of network connections. They are constructed in relation to particular criteria that attempt to combine key locational assets that give the territory a functional quality – hence the reference to functional regions.

Much has been written about the notion of functional regions, some from a very ‘economistic’ perspective and other, more recent work within ‘new regionalism’ which emphasises the softer, perceptual, regional identity notions of functional regions. Functional regions can typically be described as regions defined by specific functions or functional characteristics such as ecological regions (catchment areas), transportation regions, economic regions (agglomerations of economic activities), labour market regions, and trade/shopping/commuting regions².

Given that regions understood in this way do not correspond neatly to local and provincial boundaries, the purpose of this report is to shed light on the nature of South African regions through an illustrative discussion of some key spatial interactions and resulting functional regions. As mentioned in the introduction, the comparative understanding on the basis of administrative boundaries at district level is provided by the companion piece to this report, viz the district profiles developed as part of the Territorial Review. This document augments the district profile work, but from the perspective of the broader notion of functional regions. Such regional analysis, considering spatial relational interactions could thus aid in providing illustrative views of various functional regions.

The possibility to augment the district level analysis with more targeted spatial analysis typically enables an illustrative view of functional regions that are organised around (i) a node, or focal point, with the surrounding areas linked to that node through networks (i.e. transport networks), systems, associations, and activities; and (ii) around specific natural features that do not necessarily act as nodes, but which still directly influence the nature and characteristics of the surrounding area.

The aim of this report is not that of constructing or defining such functional regions per se. It rather provides a foundation to further explore the notion of functional regions both from an economic sense as well as from a perceptual/cultural lens.

3. Groundwork and related analysis

Together with the Territorial Review Profiles (The Presidency, 2010), an overview of the spatial distribution of key attributes of regions, can contribute to illustrate opportunities, assets and challenges for regional development, enable an exploration of differences and similarities between, and within districts, and provide an enhanced understanding of regional dynamics within South Africa.

¹ Peter Nijkamp, 2007, *Regional Development as Self-Organised Converging Growth*, A paper presented to the International Policy Workshop in Berlin on Spatial Disparities & Development Policy in preparation for the World Development Report 2009

² OECD, 2002. *Redefining Territories: Functional Regions*. OECD Publication Service. Paris.

The data sets informing the analysis are largely contained within:

- The Territorial Review data set and system (The Presidency, 2010), in the form of comparative district level and provincial level data sets (See Annexure A); The Geospatial Analysis Platform, version 2006 with updated 2007 data in the form of more detailed data sets enabling spatially specific and relational spatial analysis (see Annexure B); and
- The comparative district level trends analysis contained in the National Spatial Trends Overview, (SACN *et al*, 2009).

This analysis contained in this report also builds on and can be read in conjunction with more detailed and existing conceptual displays of regional spatial analysis, such as:

- The economic significant areas and areas in need (NSDP, 2006);
- The identification of functional urban areas (National Spatial Trends Analysis, 2009); and
- The livelihoods classification of municipal areas (South African Human Settlement Investment Potential Atlas, 2009 - forthcoming).

4. Regions at a glance

4.1 Regions with substantial natural assets

Every part of South Africa obviously plays a significant role in contributing towards providing a sustainable habitat and in the upholding of ecosystems and biomes. Some of these areas are characterised by a specific role, i.e. being earmarked as protected area, in order to ensure the future sustainability of ecosystems, or by serving as habitat suitable for human occupation and livelihood. Many regions in South Africa are also marked by significant endowments of natural resources. In some of these regions such endowments and natural resources also make a significant contribution to regional and national economies.

In this section a selected illustration of some of these regions at a national level will be provided, with the specific view of illustrating the significant role that different areas and regions play in terms of their natural assets and highlighting the importance of such considerations in development planning and investment decisions. The more detailed spatial and regional manifestation of these key features is discussed at a national level in the National Spatial Trends Overview: Annexure E (SACN, *et al*, 2009) and at a provincial and district level in Section 7 of the Territorial Review Profiles (The Presidency, 2010).

The section merely provides an overview of such areas and regions. It does not explore the critical and numerous challenges and impacts of aspects such as climate change, long term sustainability, increased demands on resources and energy, etc.³

³ For more detailed and extensive discussions in this regard see for example the South African Risk and Vulnerability Atlas (DST, 2010) and the National Biodiversity Strategy and Action Plan (DEAT 2005).

4.1.1 Ecosystems, biomes and protected areas

Regions that play a key role in providing for areas (and biomes) rich in terms of biodiversity are of critical importance in terms of long term regional and national sustainability. The wealth of species and their contribution to long term socio-economic, as well as ecological resilience of the region are part of the heritage of every citizen and a source of economic wealth and human well-being.

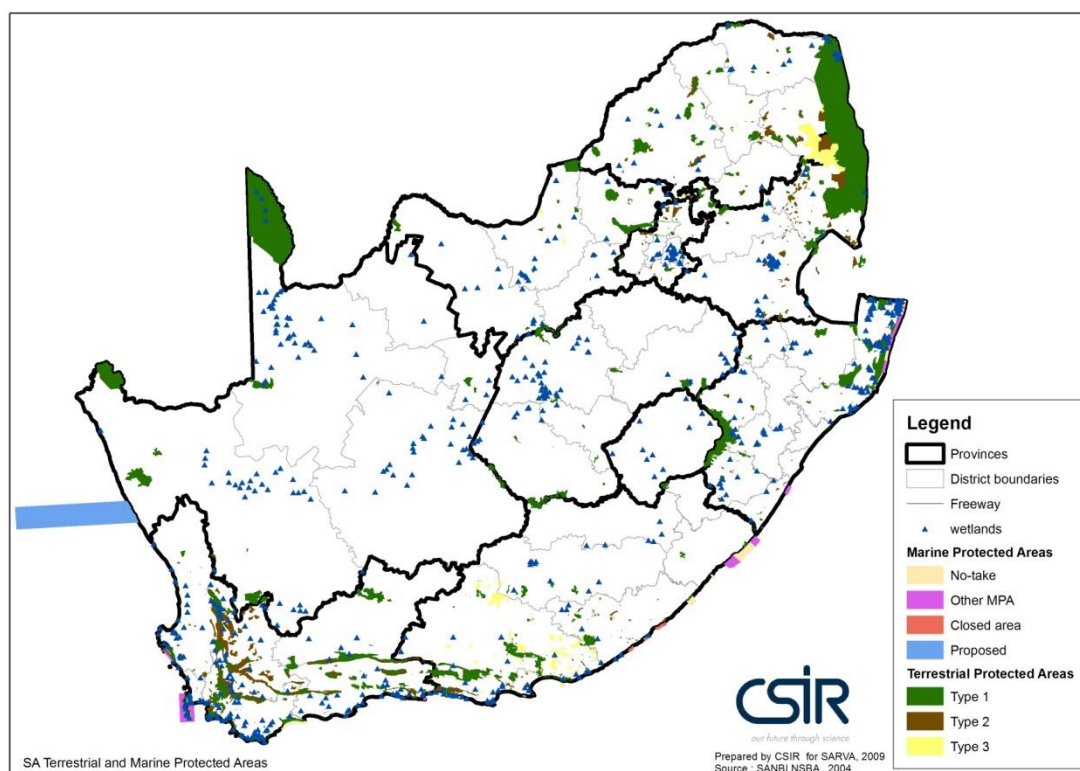
Such areas are typically distinguishable by aspects such as their conservation status, the extent and nature of protected areas they are home to and the key role their natural features play in acting as reservoirs for key natural resources, such as water and biodiversity.

An illustration of areas and regions included in this overview are:

- A. Regions with important terrestrial and marine protected areas (See View 4.1.1A);
- B. Areas to be conserved because of their vegetation importance and threats to their biodiversity (View 4.1.1B); and
- C. Areas that have to be considered due to the key role they play as significant water catchment areas (Views 4.1.1C(i) and (ii)).

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.1.A: Regions with important terrestrial and marine protected areas



Source: National Spatial Biodiversity Assessment (SANBI), 2004. For a more detailed district specific analysis see Section 7 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

Other relevant sources: The South African Risk and Vulnerability Atlas <http://rava.qsens.net> and Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The map provides an indication of areas in South Africa that are protected because of their importance and vulnerability, as habitat for fauna and flora. The Terrestrial Protected Areas include:

- Type 1: National parks and provincial nature reserves, local authority nature reserves & DWAF forest nature reserves;
- Type 2: Mountain catchment areas, wildlife management areas, private nature reserves, national heritage sites, DWAF forest areas, SANDF property, bird sanctuaries & botanical gardens; and
- Type 3: Protected game farms, private game reserves & conservancies.

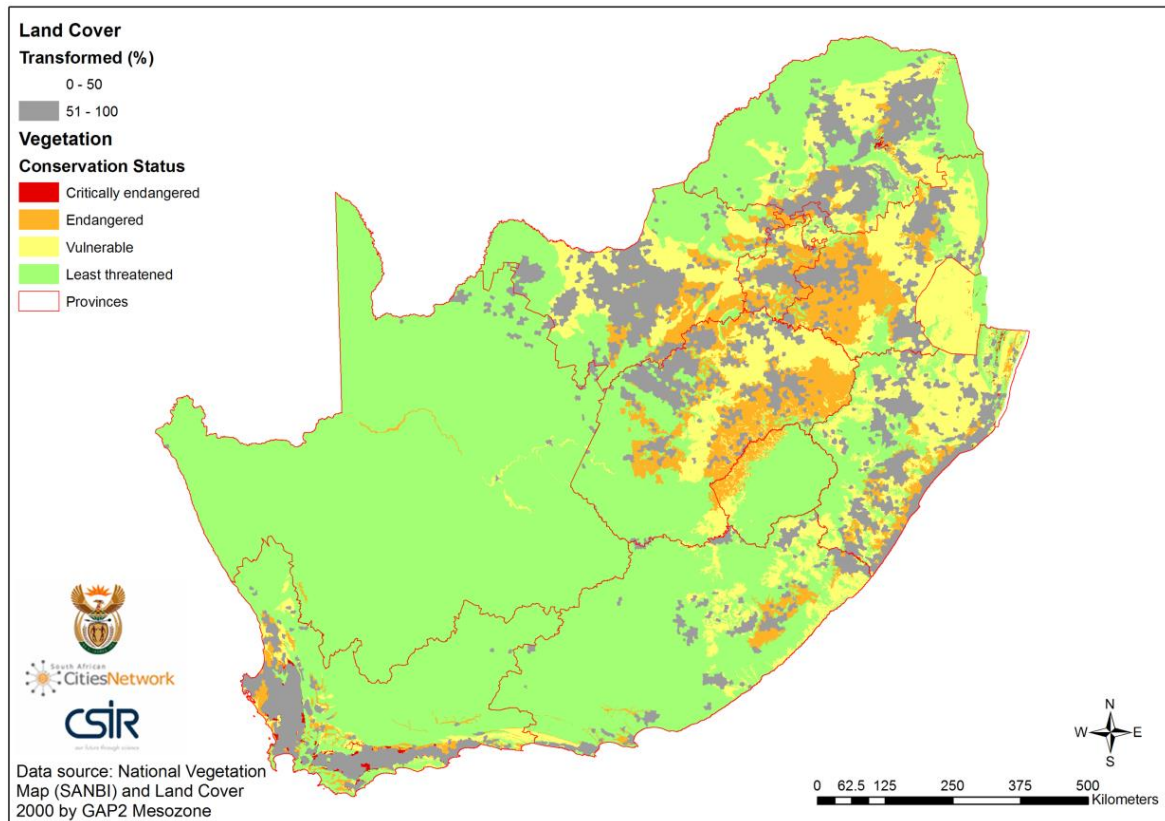
The Marine Protected areas include:

- No-take areas: where no resource extraction is permitted;
- Other Marine Protected Areas: areas in which some level of extraction is permitted, e.g. fishing from the shore
- Closed areas: Closed marine areas; and
- Proposed areas: Proposed marine protected areas, not yet proclaimed.

Implications: South African regions are characterised by a wealth of species, biomes and an extraordinary wide range of invaluable fauna and flora – some of which are protected for sustainability and future well being. Many of these areas are under threat of both so-called urban and rural development activities (Also see section 4 of this report). The consideration of these protected areas is of critical importance, not only as assets in terms of regional development, tourism and ecosystems services, but as crucial considerations for long term sustainability.

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.1B: Areas to be conserved because of their vegetation importance and threats to their bio-diversity



Source: National Spatial Trends Overview; Annexure E (SACN *et al.*, 2009) - based on the conservation status of the different vegetation types in the national vegetation map (Mucina and Rutherford 2006, Driver *et al.* 2004) and the extent of transformation based on the 2000 National Land Cover dataset (ARC & CSIR 2000). Other relevant sources: The South African Risk and Vulnerability Atlas <http://rava.qsens.net/> and Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

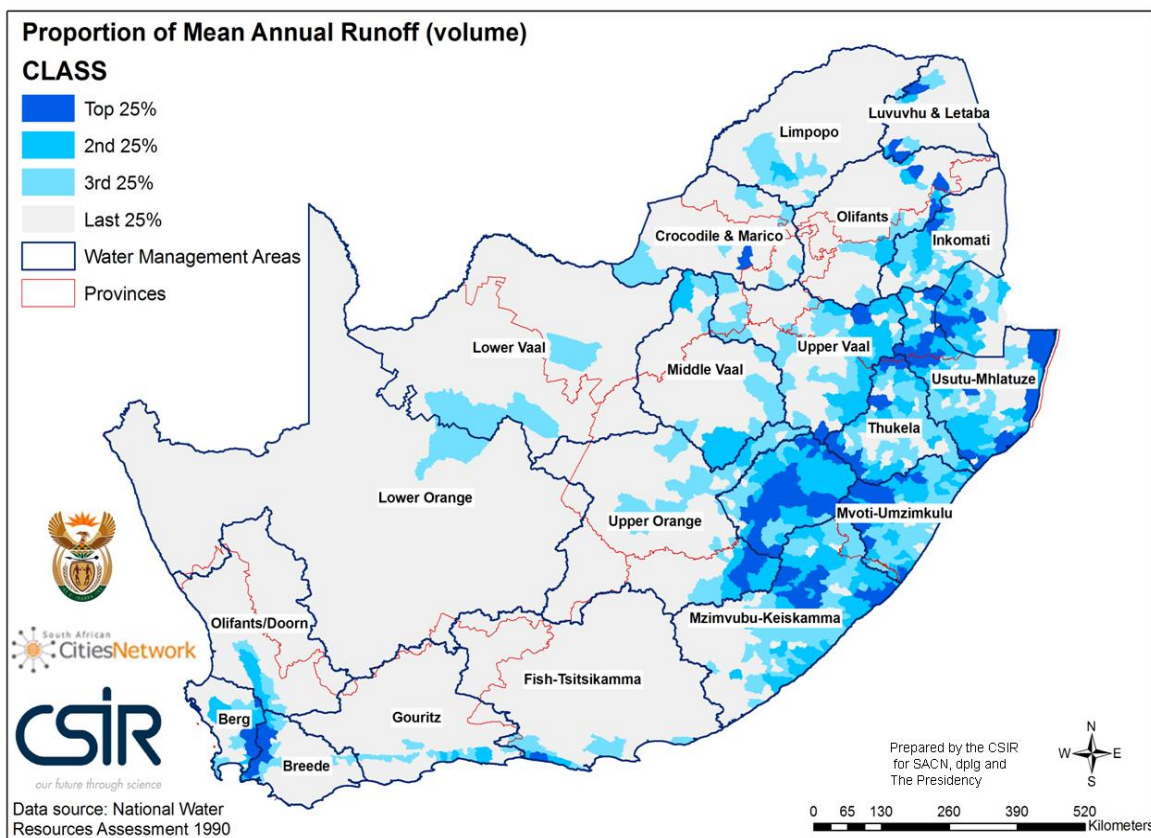
Short description: Overall the grasslands (northern, central and western parts of the country) and the coastal lowland vegetation of the Western Cape are the most threatened. Conservation status classes are defined as follows where each vegetation type has a conservation target of a certain percentage in protected areas

- Critically endangered – 0% to target % remaining (i.e. < target %);
- Endangered – 60% to target % remaining;
- Vulnerable – 60% to 80% remaining; and
- Least threatened – 80% to 100% remaining.

Implications: The regions under pressures as evident from the above map, largely correlate with: (a) areas of economic development with concomitant expansion of built-up land – typically metropolitan areas and other urban development in the central and northern parts, as well as along the coastal regions; and (b) areas characterised dense settlements of large numbers of people, with limited economic activity and livelihood possibilities (see Section 5) – typically densely settled rural areas, in the eastern and northern parts of the country, reflecting the footprints of the former Bantustan areas. The implications of the vulnerability of these areas and natural resources requires consideration, especially in terms of settlement planning, land management, service delivery options, rural development, tourism and regional development in general. Long terms sustainability is directly effected.

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.1C: Areas to be conserved because of the key role they play as significant water catchment areas



Source: National Spatial Trends Overview; Annexure E (SACN *et al*, 2009). Developed from hydrological and spatial data from the National Water Resources Assessment 1990 (Midgley *et al*. 1994).

Other relevant sources: The South African Risk and Vulnerability Atlas <http://rava.qsens.net/> and Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The catchments are grouped into classes according to the proportion of the surface water flows (mean annual runoff in millions of m³) that they provide. The darker blue indicates those areas with the highest yields (whose total yield equals 25% of the runoff) and the grey indicates areas with the lowest yields. The high yielding catchments are concentrated in the eastern and southern parts of South Africa, Swaziland and Lesotho. About 12% of the area produces 50% of the runoff and there are extensive areas that yield very little of the surface runoff. A number of the densely populated areas and major urban centres (metropolises) are located in areas with inherently low yields, including the highveld.

Implications: The high yielding catchment areas (darker blues) should be managed particularly carefully to ensure that they continue to yield large volumes of high quality water. Management of these catchment areas typically would include invasive alien plant control operations (i.e. Working for Water and Van Wilgen *et al*. in press) and the rehabilitation and management of these areas, natural pastures and cultivated lands to keep the soil in good condition, minimise sediment loss and maintain the ecosystem service of water flow regulation (MDTP 2007). Areas depending on such areas for water provision will have to take cognisance of, and contribute to planned activities and management of water resources in the bigger water resource management areas.

4.1.2 Areas suitable for human occupation and livelihood

There are a number of areas in the country that are clearly distinguished by the national and regional significant role they play in terms of population distribution and habitability. The habitability of the South African land area has been illustrated based on the information as set out in Diagram 4.1.2A

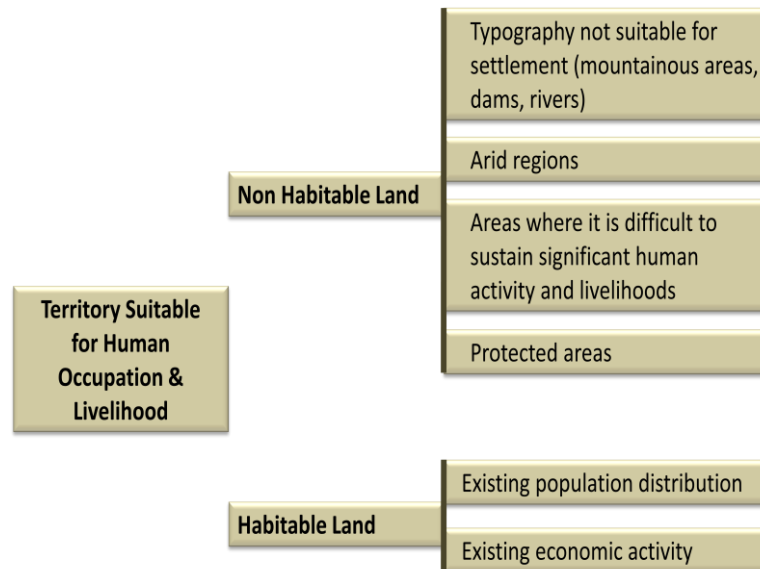


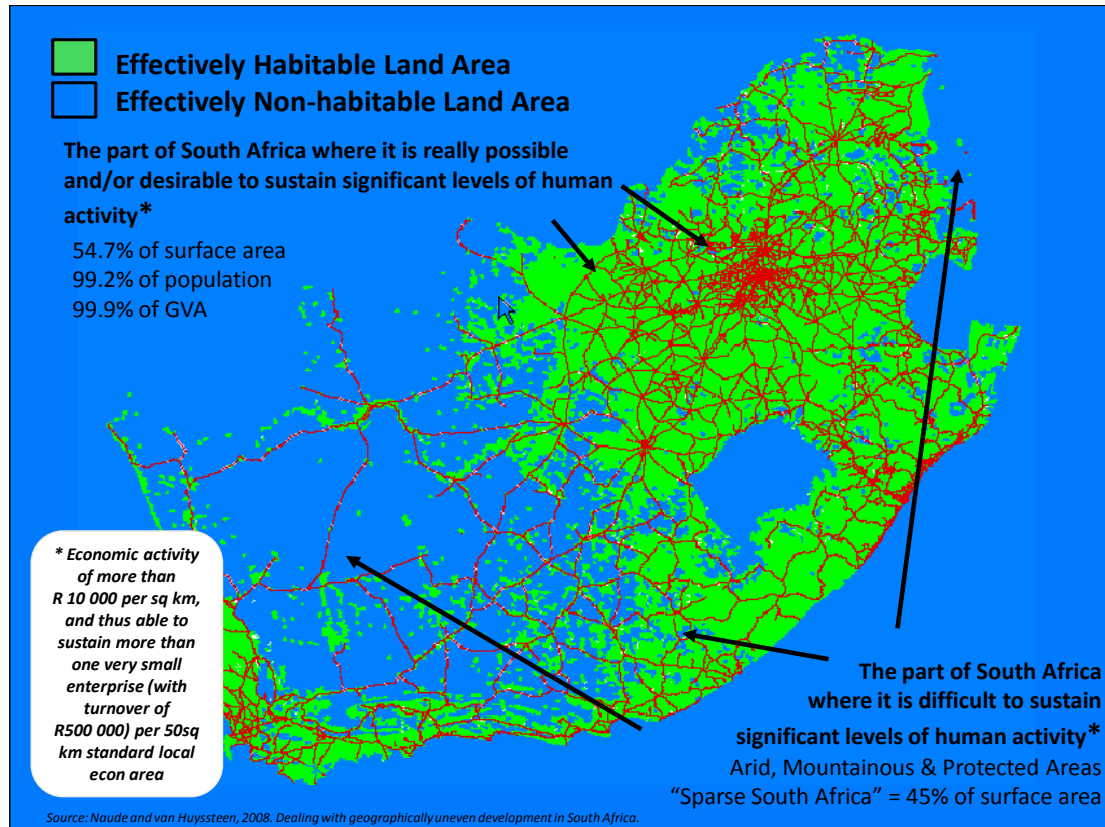
Diagram 4.1.2A: Territory Suitable for Human Occupation and Livelihood

The following illustrative regional descriptions provide an indication of areas that are of national significance because of their critical role as areas of human occupation and livelihood generation in South Africa:

- A. Regions characterised by relatively high and low population distribution and habitability (See View 4.1.2A) – depicting a pattern and regional developmental reality of limited habitable land in many parts of the country; and
- B. Regions housing high population concentrations and human settlements in the country (See View 4.1.2B) – confirming the regional patterns set out above and the high levels of concentration. This analysis has also been taken further at district and provincial level, focussing on illustrating population distribution in more detail, in Section 3 of the Territorial Review Profiles (The Presidency, 2010).

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.2.A: Regions characterised by relatively high and low population distribution and habitability



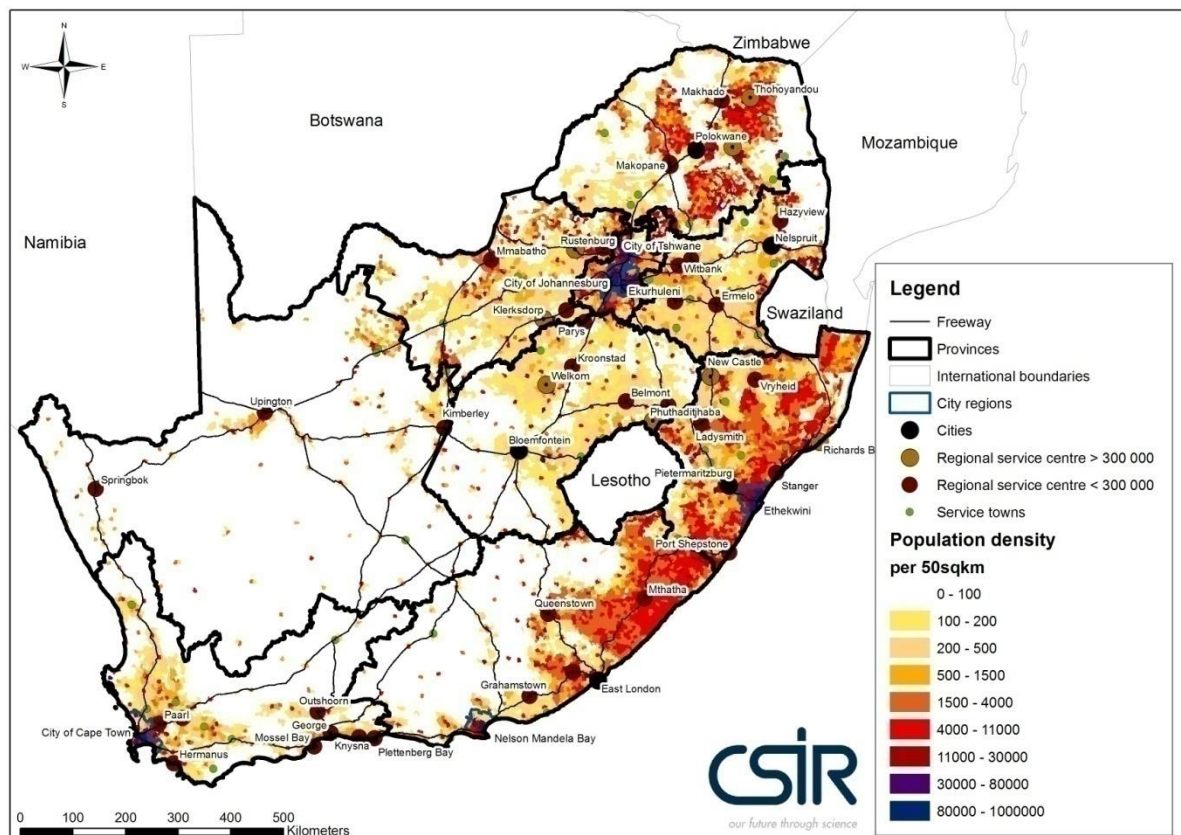
Source: Based on an analysis of geographically uneven development in South Africa (see Naudé and van Huyssteen, 2008), utilising 2004 population data disaggregated on the Geospatial Analysis Platform (GAP, 2006)

Short description: As a first step non-habitable land was identified and subtracted from the total land area. This analysis conducted of the South African land area highlighted that quite a high percentage of 45% of the total land cover can actually be described as "sparsely populated", made up by mountainous areas, areas that are under protection i.e. nature reserves and dams, as well as areas that can be described as arid areas. These areas are often also marked by very low economic livelihood potential. This particular analysis (based on 2004 population data) illustrated that 99.2% of the population, by 2004 lived on only 54,7% of the country's land area - highlighting those areas in the country where it currently seems possible to sustain livelihoods and human activity. As a second step these findings were also verified with the inverse – considering information that would typically provide an indication of habitable land, such as where population is currently distributed as well as existing levels of economic activity. A stark contrasting image comes to the fore, of regions with habitable land located along the southern and eastern coast lines, as well as in the central and northern parts of the country, and the large portion of non-habitable land, especially Karoo and Northern Cape areas.

Implications: Uneven development and the challenges associated therewith is an underlying reality in the South African regional development context, as in many other countries. The possible impact of climate change, especially in arid and semi-arid areas will have to be considered. The importance of targeted analysis and understanding spatial disparities to evaluate existing strategies and design high impact and contextually relevant targets and strategies in aid of development, is clearly evident. Implications in terms of the kind & types of investment required in different areas and long terms sustainability need to be explored and lessons learned from international efforts at addressing uneven development considered.

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.2B: Regions housing large population concentrations and human settlements



Source: Disaggregation of 2007 population figures (Stats SA, 2007 and Quantec, 2007) on the geospatial analysis platform (CSIR, 2006), as well as the settlement typology developed in the National Spatial Trends Overview report (SACN *et al*, 2009). For a more detailed comparative analysis see Sections 3 and 5 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010). Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: Within this analysis, areas with densities of more than 100 people per 50km² are highlighted, as well as population settlements (characterised by their population densities, levels of economic activity, as well as relatively higher levels of access to government and economic services). The regions and areas characterised by extremely low population densities as reflected in this analysis (where the white areas on the map illustrate population densities of less than 100 people per 50km²), largely corresponding with the patterns emerging from the regional illustration in Text Box 4.1.2.A. The more detailed and spatially targeted analysis of spatial patterns and trends, as interpreted through the settlement typology in this analysis, illustrated that in 2007, 70% of the South African population were housed within:

- metropolitan regions, cities and areas acting as commuting areas to them;
- high and medium order towns and service centres and their surrounding areas; as well as
- small and local towns and nodes.

Another 21% of the population were housed in dispersed rural settlement areas (depicted in red on the map - especially along the eastern coast and the northern and north-eastern parts of the country in the former Bantustans).

Implications: The regional illustration highlights the critical role and comparative significance of certain regions and areas in housing the country's population and providing access to livelihoods and services. These functional regions, typically characterised by high population densities and access to economic activity, both within so-called urban and rural areas, require specific consideration in terms of targeted service provision, investment, maintenance and governance responses. Population distribution patterns and trends largely correlate with habitability of regions and hold implications for the distribution of resources and services to ensure governance impact in terms of accessibility of services and improvement in quality of life.

4.1.3 Natural resources of economic significance

There are a number of regions in the country that play a crucial role in providing access to natural resources. These include resources such as water and various sources of energy, land capability in support of agriculture and food security, as well as mining resources. These resources are not only crucial because of their economic value, but most probably even more so because of their importance for long term national and regional sustainability.

Within this specific regional analysis, only a limited range of resources are considered, including water resources, mining resources (minerals, metals etc.), as well as land providing access to resources from agriculture, forestry and fishery.

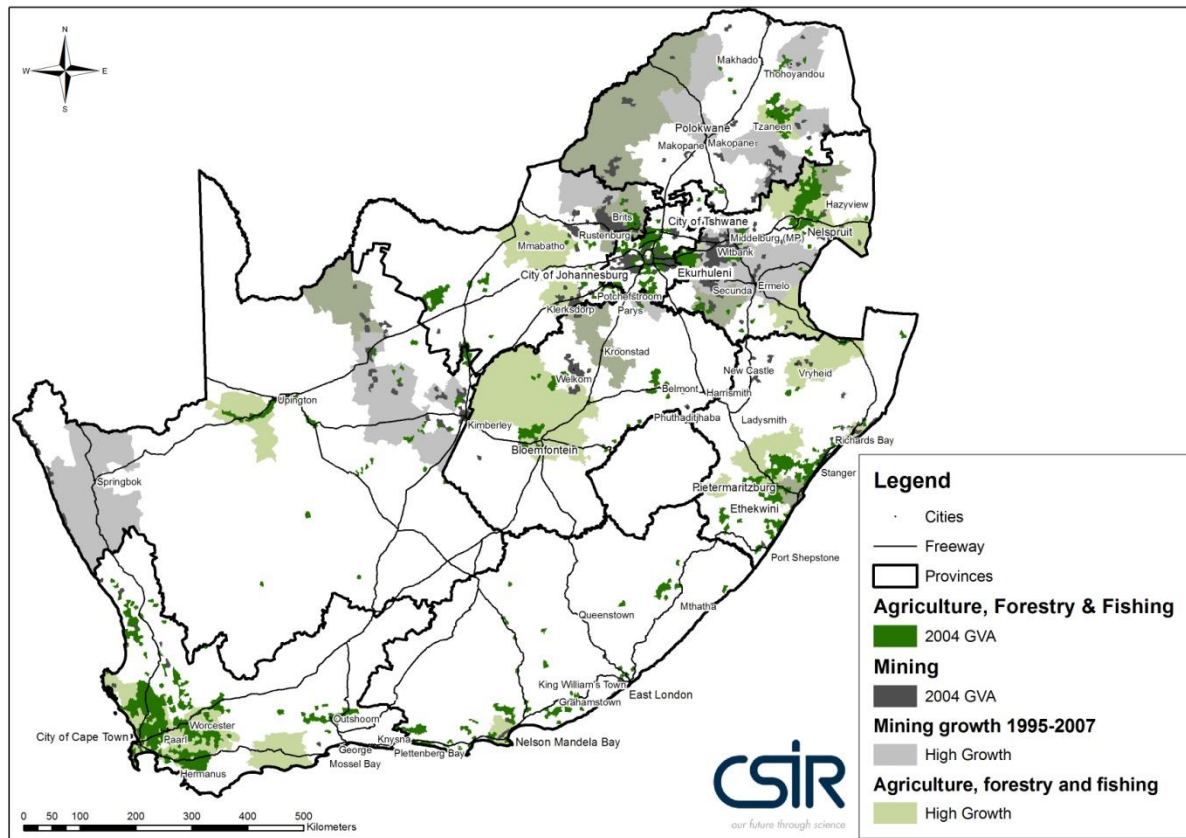
Other areas that could most probably be considered as potential regional assets in terms of their natural resources, are areas with high potential for alternative energy sources. A more detailed spatial depiction of potential for renewable energy use, including an analysis of bio-mass potential for both agriculture and wood, hydro potential as well as solar energy potential is set out in Section 7 of the Territorial Review Profiles (The Presidency, 2010). The harnessing of this potential obviously will depend on the required technology, institutional and industry support and capabilities.

An illustration of areas and regions that are of national significance due to their natural resource endowment, included in this overview are:

- A. Regions of natural resource significance, as illustrated by existing high levels of economic activity and recent growth within the mining, agriculture, forestry and fishery sectors (See View 4.1.3A); and
- B. Regions of natural resource significance, as illustrated by a spatial indication of relatively high mining and agricultural potential, as well as relatively high annual rain water runoff (See View 4.1.3B).

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.3A: Regions of natural resource significance, as illustrated by existing high levels of economic activity and recent growth within the mining, agriculture, forestry and fishery sectors



Source: Indicators selected are growth in absolute GVA figures for mining, agriculture, forestry and fishing (1995-2004). Spatial disaggregated data used - disaggregation of data (Stats SA, 2001 and Global Insight, 2006) on the geospatial analysis platform (data used in GAP, 2006 and NSDP, 2006). For a more detailed comparative analysis see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

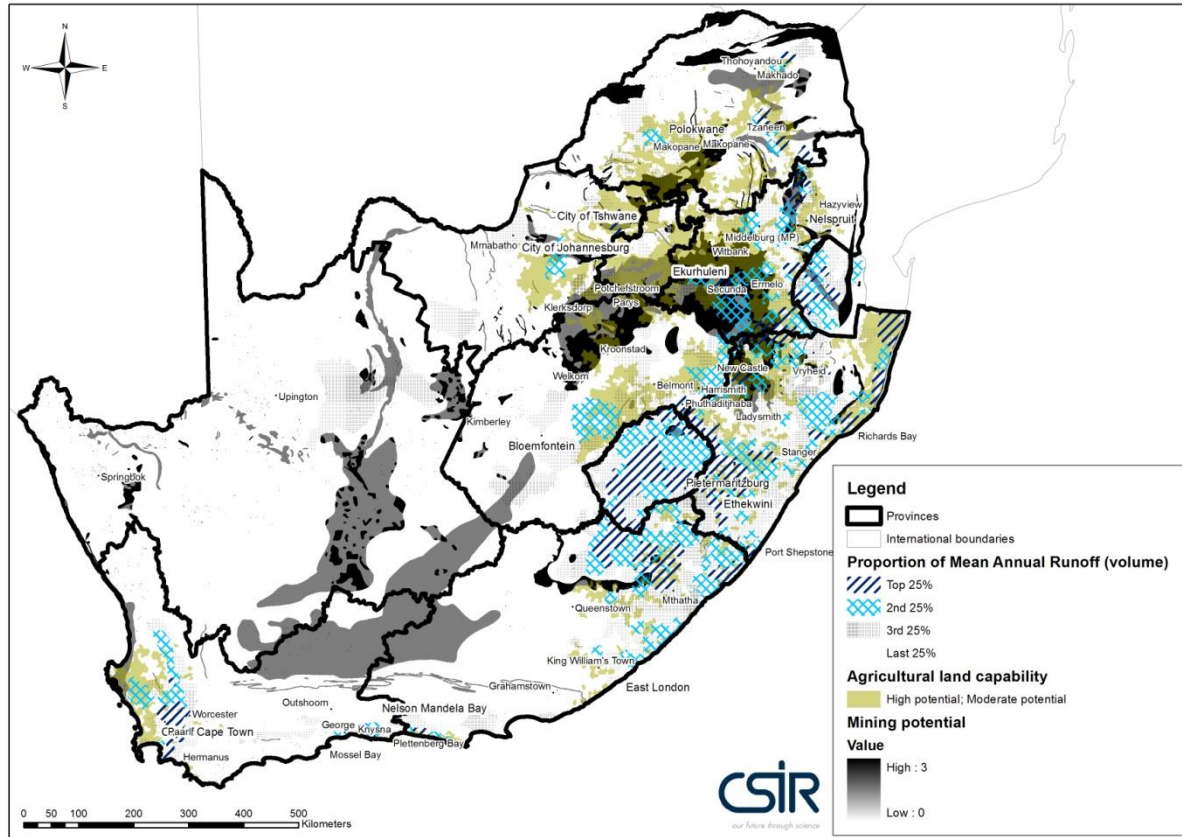
Short description: The map provides an illustrative indication of areas that contribute nationally by providing access to primary resources and opportunities for primary sector economic activities, such as mining resources, agriculture, forestry and fishery.

- The contribution in providing access to mining resources (hashed on map) have been identified by a selection of areas illustrating relative high levels of economic activity in the mining sector, where this economic activity has also grown since 1995-2007 compared to other areas in the country. This allows identifying areas where the economy in that sector is growing from a large economic base. These areas are largely located in the northern and central parts of the country (Limpopo, North West, Gauteng, Mpumalanga and Free State), with some resources also in the northern parts of the Northern Cape.
- The significance in facilitating economic activity in the agriculture, forestry and fishery sectors (green on map) have been identified by selecting areas illustrating relative high levels of economic activity in these sectors, where this economic activity has also grown since 1995-2007 compared to other areas in the country. This allows identifying areas where economic activity in that sector is growing from a large economic base, and areas that typically also make the biggest contribution to employment (and employment growth) in that sector. These areas are quite scattered through the country and seem to be significant especially in the Free State, Western Cape, Northern Cape, parts of Limpopo, Mpumalanga and KwaZulu Natal. With specific patches in North West and Eastern Cape.

Implications: The regional illustration highlights the critical role and comparative significance of certain regions and areas in providing access to economic activity related to accessibility of natural resources. This spatial distribution and growth patterns can provide an indication of where sector specific economic activity and employment opportunities are spatially concentrated and form a significant contribution to regional development.

REGIONS WITH SUBSTANTIVE NATURAL ASSETS:

View 4.1.3B: Regions of potential natural resource significance as illustrated by a spatial indication of relatively high mining and agricultural potential, as well as relatively high annual rain water runoff



Source: SANBI 2004, National Spatial Trends Overview (SACN *et al*, 2009), AGIS 2004 and CSIR mesozone

Short description: The illustration of regions of potential natural resource significance are indicative of:

- Areas that provide access to water resources to their own and other regions of the country (regions hashed dark blue and light blue). These scattered areas are typically the more mountainous areas and the eastern coastal as well as inland areas of the country;
- Areas that are characterised by a relatively medium-high potential for mining (light grey - black). These areas are largely located in the far northern parts of Limpopo, the northern Free State, south Gauteng and south-west Mpumalanga mineral belt, scattered areas in North West and Eastern Cape and central parts of the Northern Cape.
- Areas that are characterised by a relatively moderate to high potential for agriculture (light green) that is not necessarily explored. These areas are largely centred in the central part of the country, the north-eastern parts of KwaZulu Natal, the Eastern Cape and along the west coast.

Implications: The spatial distribution of natural resource potential provides an indication of potential – for example in terms of future mining and agriculture related activities. The natural resource potential can only be significantly utilised within a context where the required institutional and market capacity exist. Implications for development lies not only in terms of future potential for economic activity, but also for current considerations in terms of other developments in such areas, and a recognition of the importance of natural assets for future generations, especially assets that will determine water availability and food security.

4.2 Regions as actors of national growth

"Regions are actors of growth and have an impact on how their national economy performs. Natural and human resources tend to be concentrated ... regions' abilities to exploit local factors, mobilise resources and create linkages varies, raising the issue of development capacity. The impact of concentration on national economic growth can be felt, with growth often driven by a few regions within a country." (OECD, Regions at a glance. 2009: 53)

Areas that make significant contributions to regional economies and national economic growth, that provide relative high access to employment opportunities, as well as to social, economic and government services, tend to be spatially more concentrated, as access and agglomeration factors play a significant role in their development.

These areas typically are concentrated around towns and cities and not only play a crucial role in terms of carrying regional economies and tax bases, but also in providing access to livelihoods and services to the population within their direct vicinity, as well as surrounding hinterlands.

These areas are typically characterised by socio-economic pull factors, in-migration, agglomeration effects. They also typically act as points of access to broader regional and global economies.

Within this illustrative discussion on regions as actors of national growth, the following themes, indicative of the role regions play within national growth, a number of aspects are explored. Economic activity and growth, as well as concentration and agglomeration factors at a national level are explored as key indicators of regions as actors of national growth. National growth is also closely linked to population growth and distribution, illustrated through a brief overview of population growth, settlement and migration trends. Lastly an illustrative indication is provided on the spatial concentration of regional innovation, an indicator closely linked to national growth.

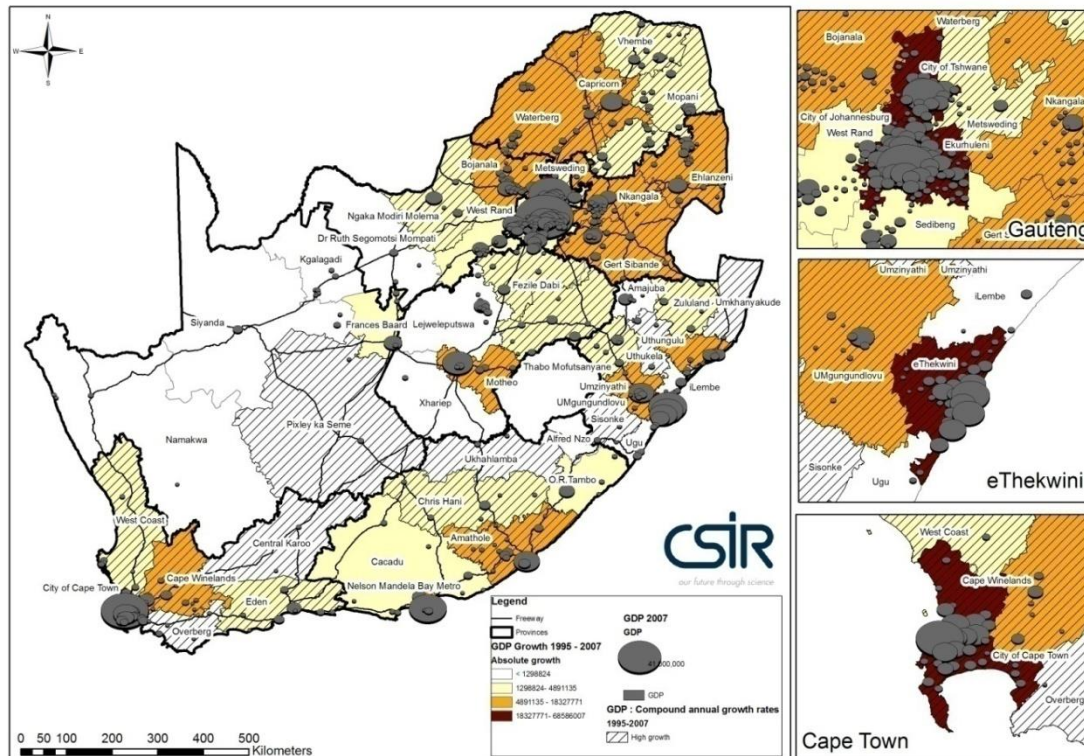
4.2.1 Economic activity

An illustrative overview of the role of regions within national economic activity and growth, and the strong correlation with concentration and agglomeration factors at a national level are explored by depicting a spatially targeted view of such regions, as well as a district/metropolitan area based view. These include:

- A. Areas and places that could be regarded as playing a significant role in regional economic activity and growth (See View 4.2.1A). These are identified by utilising spatially targeted indicators of economic activity for 2007, in comparison with actual and compound economic growth at district and metropolitan municipality level in the country (2995-2007); and
- B. Areas playing a significant role in providing access to social-economic and government services, and illustrating high levels of employment supply and demand.

REGIONS AS ACTORS OF NATIONAL GROWTH:

View 4.2.1A: Areas and regions that could be regarded as playing a significant role in regional economic activity and growth



Source: Economic activity 2007 calculated by using total Gross Domestic Product 2007 (Stats SA and Quantec 2007), and economic growth for the period 1995-2007 calculated by using compound growth rates and actual growth over the period 1995-2007 (Stats SA and Quantec 2007). Spatial disaggregation and targeted analysis, as well as comparison of areas with changed boundaries over time, done by disaggregating data on the geospatial analysis platform (GAP, 2006). For a more detailed comparative analysis see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

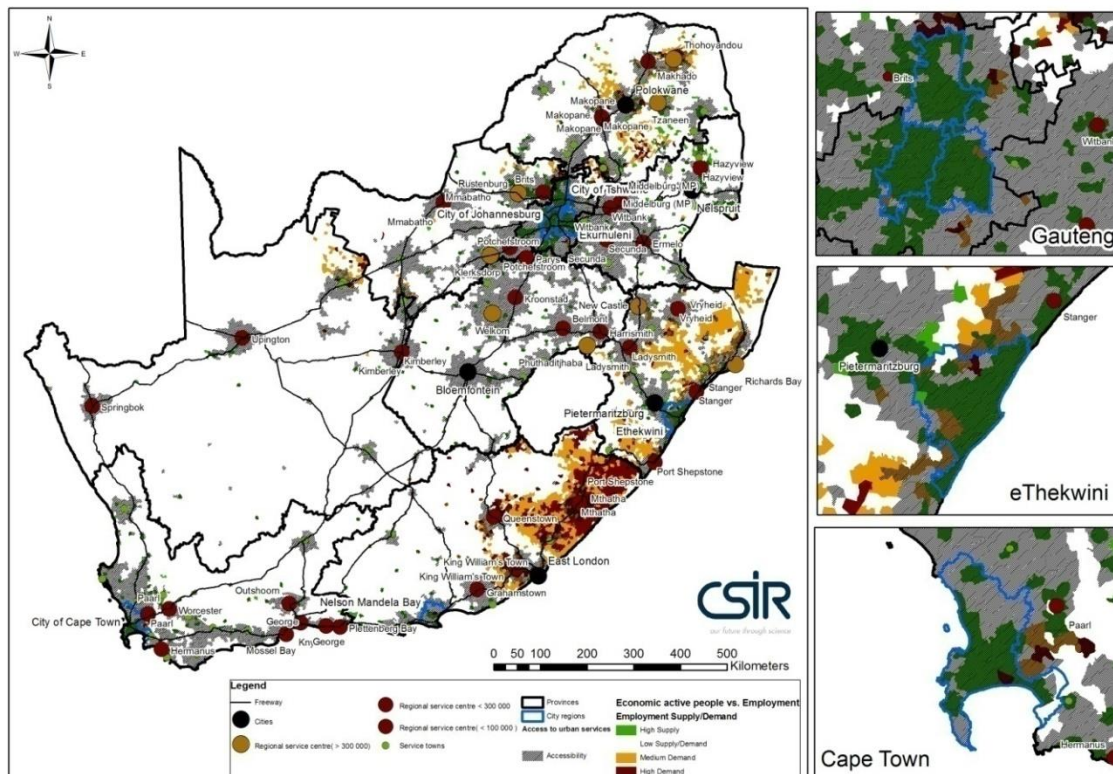
Short description: The illustrative overview depicts a range of areas that could be regarded as playing a significant role in regional economic activity and growth, as illustrated by:

- Medium to high levels of economic activity 2007, calculated by using spatially disaggregated GDP as indicator (grey bubbles depicting places with relatively high economic activity – economic activity above the national average). Economic activity is clearly very concentrated and largely generated in specific nodes within the cities and towns, as well as in the northern parts of the country, and along the coastal belt;
- Actual economic growth for the period 1995-2007, as calculated for the different district municipality areas in the country by using Total GDP Growth as indicator (red/brown and orange indicating a relatively high actual growth and yellow a relatively low growth). In terms of actual growth, it can be seen that the biggest growth have occurred around the metropolitan areas, largely followed by the northern and coastal regions. In addition hereto the areas depicting high economic activity linked to the mining, agriculture, fishing and forestry sectors stand out. This growth also reflects the growth from a relative high current economic base;
- Growth rates for the same period, as calculated for different district and metropolitan municipality areas in the country by using compounded annual GDP Growth rates as indicator (dark hatching indicating relatively high compound annual growth rates). These areas also highlight economies that grew significantly, even if so from a relative low base over time. It is evident and heartening to note that the metropolitan and district areas with high absolute economic growth also illustrate high growth rates since 2005.

Implications: The nodes within metropolitan areas, cities and towns seem to play a crucial role in the economy, as illustrated by the high levels of economic activity. This role is also evident within the analysis of growth rates and actual growth over the period 1995-2007. The importance of governance, service and infrastructure maintenance and sustainability of these regions and their surrounding hinterlands are crucial to support the high levels of employment, the potential for job creation as well as the sustaining of the national and regional tax bases.

REGIONS AS ACTORS OF NATIONAL GROWTH:

View 4.1.2B: Areas that play a significant role in providing access to social-economic and government services, and illustrating high levels of employment supply and demand.



Source: Department of Science and Technology (DST) and CSIR. (2010). Integrated Planning and Development Modelling Project, Project component: Policy Briefs. Accessibility to urban functions, including government and economic services (utilising an aggregation of the Stats SA Urban Functional Index indicator for various nodes) as well as the settlement typology developed in the National Spatial Trends Overview study (SACN *et al*, 2009). Accessibility has been calculated making use of a 40 minute road access calculation on the geospatial analysis platform (GAP, 2006). Employment supply and demand figures, 2007 (Stats SA, 2007 and Quantec, 2007) is used, disaggregated on the geospatial analysis platform (CSIR, 2006). The analysis of employment supply and demand is calculated by bringing the number of employment opportunities in relation to the number of economically active population in an area.

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The illustrative targeted analysis depicts a range of areas that could be regarded as playing a significant role in providing access to social and economic services, as well as employment opportunities. The areas hashed in black on the map, depict areas with relatively high access to economic and social services and are evidently linked towards metropolitan regions, cities, as well as high and low order towns fulfilling a regional services function. The analysis also illustrated the important role that even small service towns play in fulfilling local service functions for surrounding areas.

It is evident that the areas illustrating high levels of employment supply are typically those areas that have relatively high accessibility to social and economic services, and activities. The analysis illustrates that the demand for employment by far outweighs the supply of employment in the former Bantustan areas. The demand for employment is especially high in the vicinity of towns in these areas that play a regional service function. Most probably due to huge populations and relatively small economies that are largely dependant on the government and community services sector of the economy. The accessibility analysis also provides an indication of the role of pull-factors and agglomeration effects of such service centres and nodes within their hinterlands.

Implications: The illustrative overview highlights the importance of service centres and access to such centres, both in terms of accessibility to various ranges of government and economic services and functions, but also in terms of the importance such services and activities have in providing employment opportunities. The importance of providing such services and also investing in such centres, especially within densely settled rural areas is evident.

4.2.2 Population

National growth and the role that different regions play in the economy of the country are inevitably also dependant on, and illustrated by, population growth and distribution, as well as migration patterns. The illustrative overview of key population trends include an analysis of:

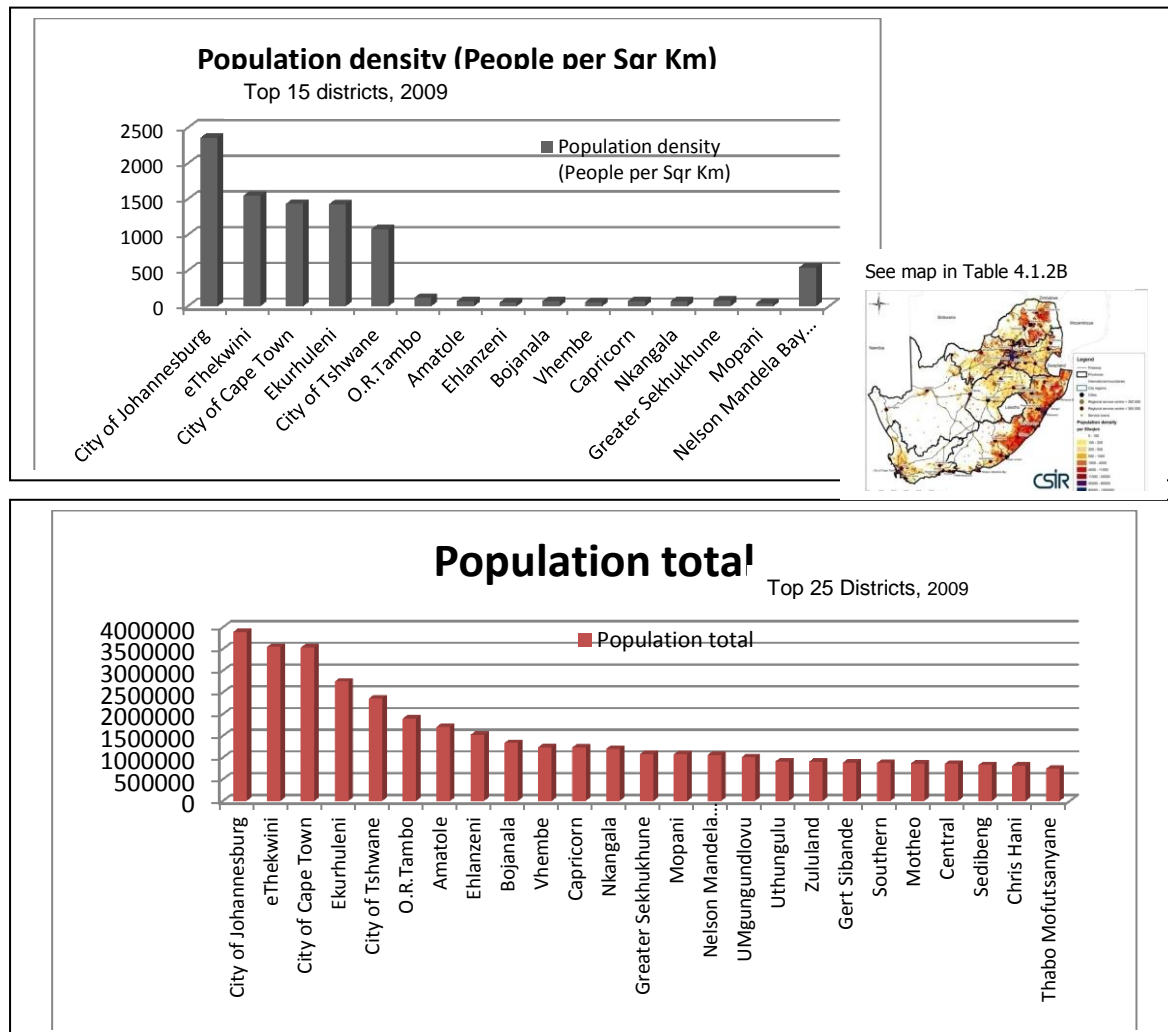
- A. Areas and municipalities illustrating high levels of population concentration and densities (View 4.2.2A, also see View 4.1.2B);
- B. Areas and regions illustrating high levels of population growth and acting as attractors of migration (View 4.2.2B); and
- C. Areas and settlements illustrating high levels of population concentration (View 4.2.2C).

In South Africa the concentration of population is evident in that almost 70% of the national population is located in only 20 metropolitan and district municipalities, with the metropolitan areas alone containing 35% of the national population.

The wide range of settlements and nodes, within so-called urban as well as rural areas/regions, play a critical role within regional development dynamics of the various regions, as well as of the country as a whole. An analysis of 2007 data (See View 4.2.2C) suggests that more than 90% of all economic activity in South Africa is generated in this range of settlements. In addition hereto these settlements house more than 70% of the South African population. Evident of the strong spatial legacies of the Apartheid era is the 21% of the population still housed in densely settled areas in former Bantustans - termed 'dispersed rural settlement areas' (See View 4.2.2C).

REGIONS AS ACTORS OF NATIONAL GROWTH:

View 4.2.2A: Areas and municipalities illustrating high levels of population concentration and densities



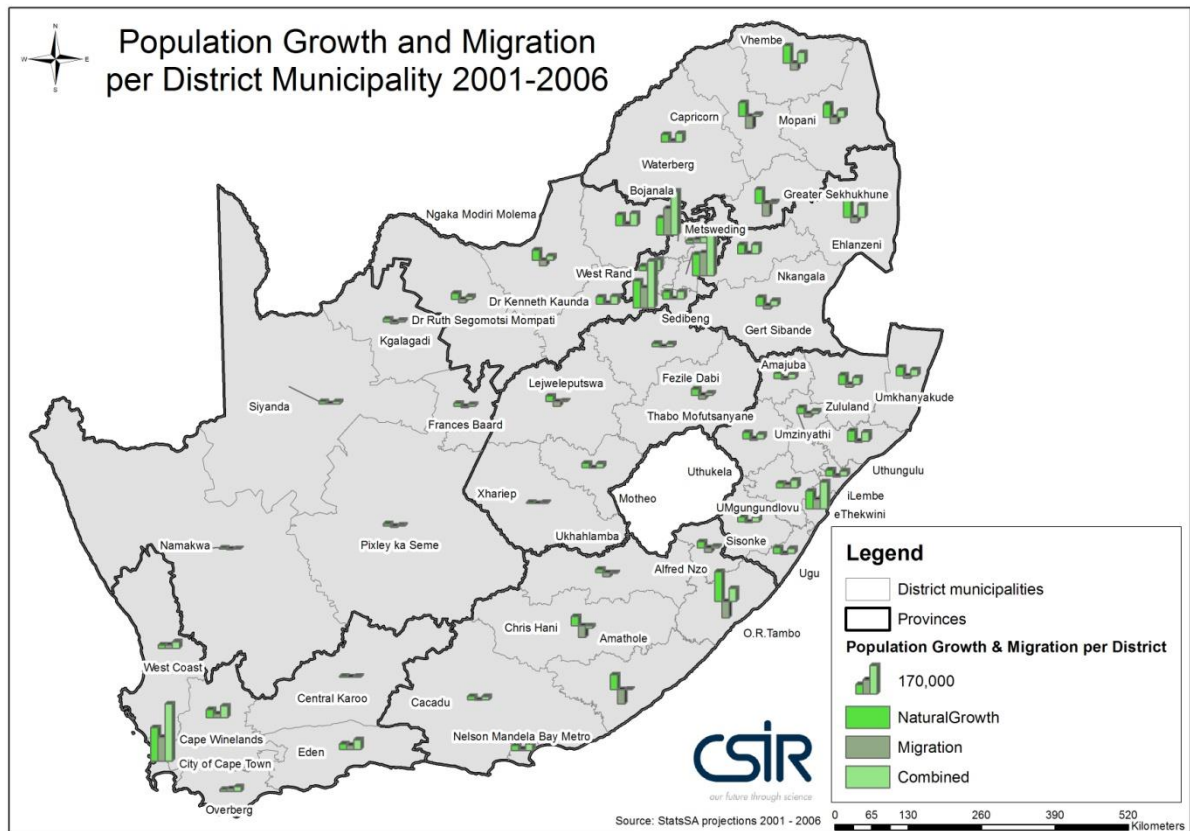
Source: Calculation of 2009 population figures (Stats SA, 2007 and Quantec, 2009) on local municipality boundary. For a more detailed comparative analysis see Section 3 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010). Inserted map of population for 2007 (Stats SA, 2007 and Quantec 2007 data) based on disaggregation on the geospatial analysis platform (CSIR, 2006), as calculated for the National Spatial Trends Overview: Annexure A (SACN *et al*, 2009).

Short description: The highest concentration of population is located in the central regions of the country, in the Gauteng area and surrounds. The metropolitan areas alone contain 35% of the national population. There are also significant concentrations of population along the east coast in the Eastern Cape district municipalities of O.R. Tambo (around Umtata) and Amathole (around East London) which cover former Bantustan areas of Transkei and Ciskei respectively. Other significant population concentrations are found in the northern parts of the country around Nelspruit and Bushbuckridge (Ehlanzeni DM), Witbank and Middelburg (Nkangala), Rustenburg (Bojanala DM) and Polokwane (Capricorn DM). 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. Two other Limpopo districts with significant population concentrations are Greater Sekhukhune and Mopani (Phalaborwa and Tzaneen). Three KwaZulu Natal districts also feature as significant population concentrations, UMgungundlovu, around the city of Pietermaritzburg, Zululand DM, with Ulundi as a population concentration, and Uthungulu, centred on Richards Bay and Empangeni.

Implications: The regional illustration highlights the critical role and comparative significance of certain regions in terms of population distribution. It is important to note that high population concentrations within the metropolitan areas, cities and large towns can clearly be related to areas of significant economic activity and growth. On the other hand densely but dispersed settlement patterns, largely in the former Bantustan areas are trade marks of areas with high population numbers and limited economic activity.

REGIONS AS ACTORS OF NATIONAL GROWTH:

View 4.2.2B: Areas and regions illustrating high levels of population growth and acting as attractors of migration



Source: National Spatial Trends Overview: Annexure A (SACN *et al*, 2009). Calculation of 2001-2006 population figures (Stats SA, 2006) disaggregated on the geospatial analysis platform (CSIR, 2006), and calculated and compared per district and metropolitan area for the National Spatial Trends Overview: Annexure A (SACN *et al*, 2009). Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

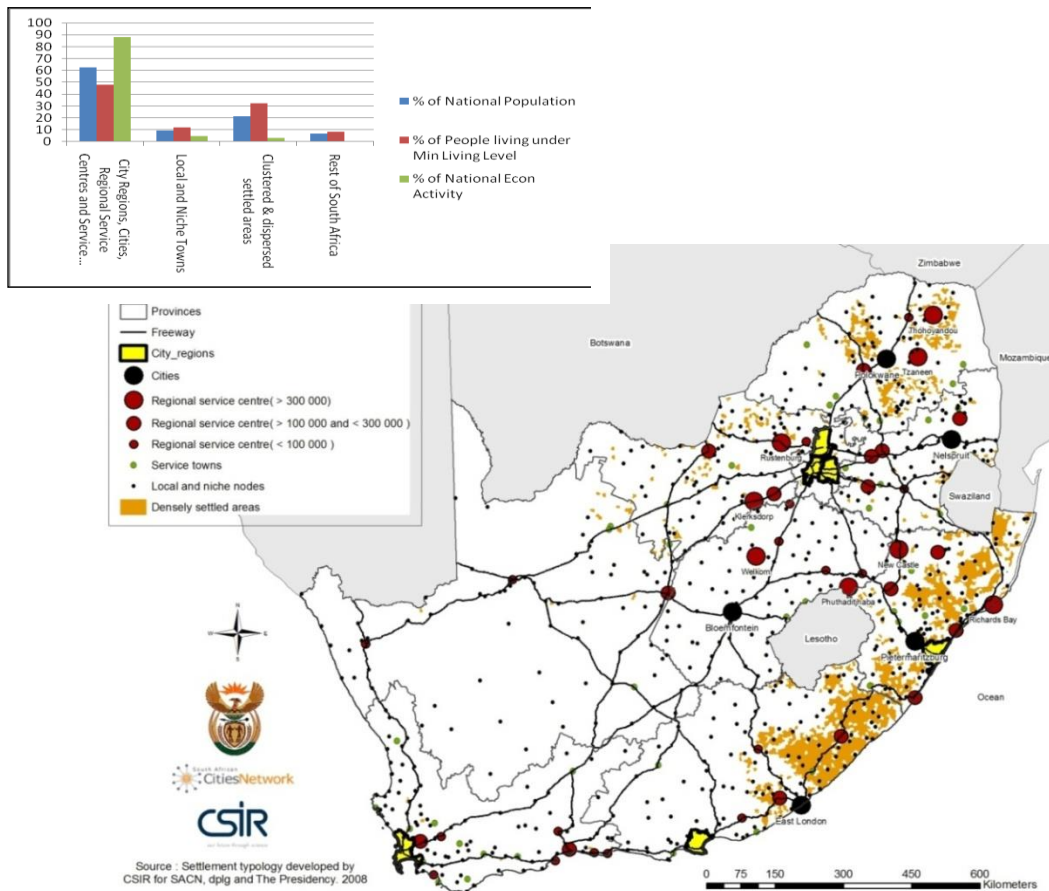
Short description: An overview is provided of population growth and migration per district and metropolitan area for 2001-2006, which usefully gives a breakdown of natural population growth, migration and combined total population growth. This analysis is augmented by a more spatially targeted analysis of the same data (insert map). It is evident from these analyses (conducted as part of the National Spatial Trends Overview (SACN *et al*, 2009) that areas of significant total population growth between 2001 and 2007 include the metropolitan areas of Gauteng (City of Johannesburg, Ekurhuleni and Tshwane), City of Cape Town and eThekweni. A noticeable general trend is the town-ward shift and a coastal drift.

In the Eastern Cape, areas such as O.R. Tambo which illustrates significant total growth, it is clear that although there is high natural growth there is also high out-migration. Thus, although the population is still growing, 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. Although there is out-migration from many Limpopo and Mpumalanga districts (particularly Vhembe, Capricorn, Mopani, Greater Sekhukhune and Ehlanzeni) most of them are still experiencing total/combined population growth.

Implications: Gauteng, KwaZulu Natal and Western Cape account for approximately 70% of the national population growth of the entire country. It is in these provinces that the biggest growing metropolitan areas are located which are huge drivers of provincial, as well as national population and economic growth.

REGIONS AS ACTORS OF NATIONAL GROWTH:

View 4.2.2C: Areas and settlements illustrating high levels of population concentration



Source: Settlement typology and analysis as set out in the National Spatial Trends Overview (SACN, *et al*, 2009). For a more detailed comparative analysis also see Section 5 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010). Analysis based on the urban functional typology (CSIR, 2008) and 2007 data disaggregated on the geospatial analysis platform (Gap, 2006). Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The conjuncture between the extreme size of population, size and nature of the economy (high level of economic activity, multi-nodal and diverse economies) and levels of urban functional services (government and economic services calculate per node as per Stats SA urban functional index (UFI)) clearly distinguished the metropolitan areas (termed 'city region areas') and secondary cities ('cities') within categories of their own. Another category of settlements identified in the analysis, were those towns playing significant roles in their respective hinterlands ('major regional service centres'). Because of the economic and size distortion brought about by the Apartheid spatial legacies these settlements do not necessarily reflect a correlation between the size of economy and size of population, however their high levels functional services clearly illustrate the important role they play within their surrounding regional hinterlands and within district economies. The remaining set of medium to small towns/settlements have been distinguished as those with a service function in their surrounding hinterlands ('service centres'), those providing a very local service, such as serving the surrounding agricultural area ('local towns') and those with specific niche services, such as tourism ('niche towns'). In addition to the above, many districts are also characterised by clusters and dispersed settlements that 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 characterised by traditional land ownership ('clustered and dispersed settlements').

Implications: 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.

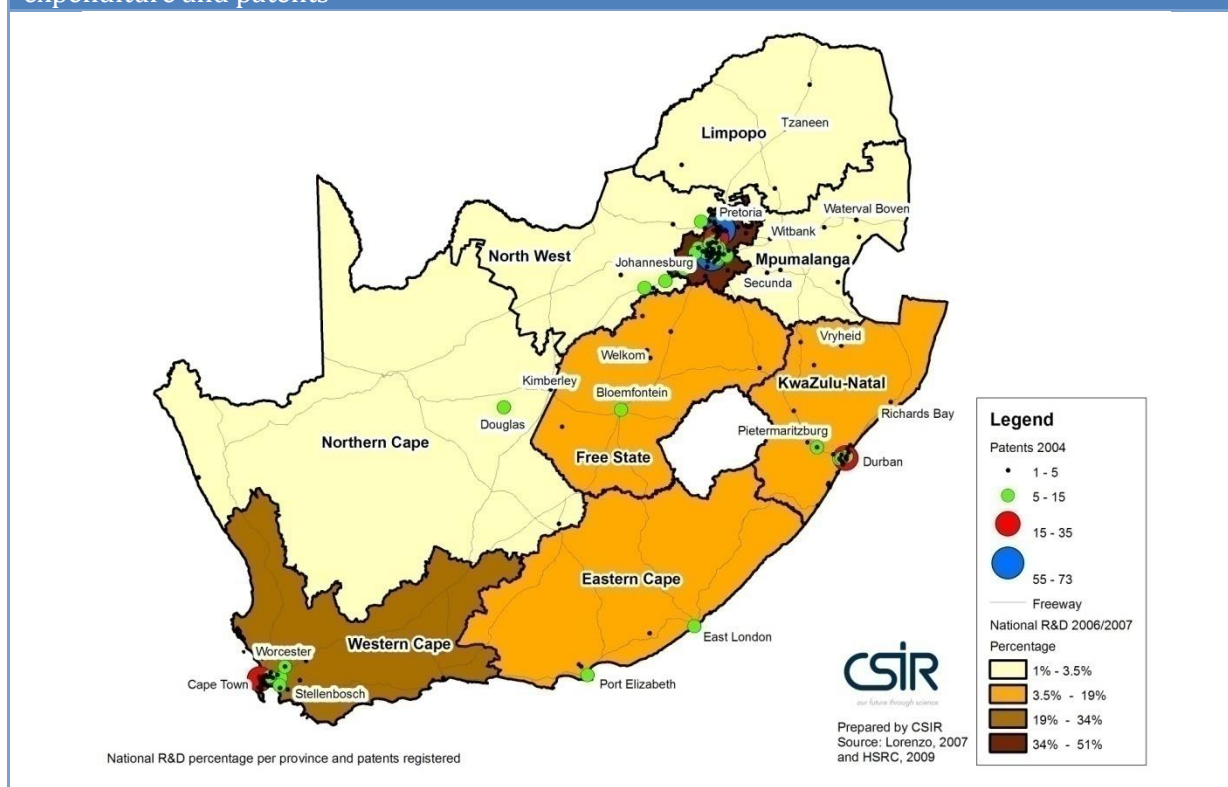
4.2.3 Regional Innovation

The role of regional innovation within regional development is well recognised internationally. View 4.2.3A provides an illustrative indication on the spatial concentration of selected indicators of regional innovation, namely patents and R&D investment - aspects closely linked to national and regional growth.

For a more detailed description, as well as an indication of the concentration of Universities and Further Education and Training Institutions, student enrolment, higher education qualifications and employment in knowledge orientated sectors, see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010), as well as the City Region Comparative Analysis (National Spatial Trends Overview: Annexure F, SACN *et al*, 2009) and Lorentzen (2008).

REGIONS AS ACTORS OF NATIONAL GROWTH:

View 4.2.3A: Areas illustrating relatively high levels of regional concentration of R&D expenditure and patents



Source: Territorial Review (The Presidency, 2010). National Research and Development contribution as calculated per province (2006/2007) and spatial distribution of patents registered (2004). Data provided by Jo Lorentzen 2007 and HSRC, 2009. For a more detailed comparative analysis see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010) and the National Spatial Trends Overview: Annexure D (SACN *et al* 2009).

Short description: The above mentioned assessments illustrate that the Gauteng and Cape Town city regions are more dynamic and vibrant on the knowledge economy front than the rest of South Africa. They have higher levels of research and development investment and a significantly higher number of technological innovation output as measured by patents. These areas are also characterised by a greater pool of highly skilled workers and superior scientific and technological output. They also have greater access to telephone and internet telecommunication infrastructure

Implications: While it is possible to say that regional innovation systems potentially exist in the Gauteng and Cape Town city-region areas, the assessment does not explore the determinants of regional innovation. The importance of infrastructure and service maintenance, access to high quality of life living environment, as well as services, in areas positioning themselves for regional innovation, are however, widely recognised.

4.3 Regional assets and key drivers of regional growth

As in most other countries, national economic growth and the factors supporting that are strongly localised in a small number of regions, with stark differences in economic performance at the regional level. Together with this socio-economic inequalities are also evident across as well as within regions and districts in South Africa.

On the one hand this is due to the stark spatial realities brought by the Apartheid history, but on the other hand such disparities are also influenced by: the natural topography and climate; economic development histories; natural resource endowments and regional assets; as well as the ability of regions to mobilise these resources.

Evidence suggests that successful, competitive regions tend to grow relatively faster and therefore increase their share of national and broader regional GDP. The following section is aimed at providing a very brief overview of some of the aspects influencing such regional conditions and use of regional assets, by providing an illustrative exploration of factors influencing disparities, growth, as well as possible regional assets.

4.3.1 Regional assets and disparities

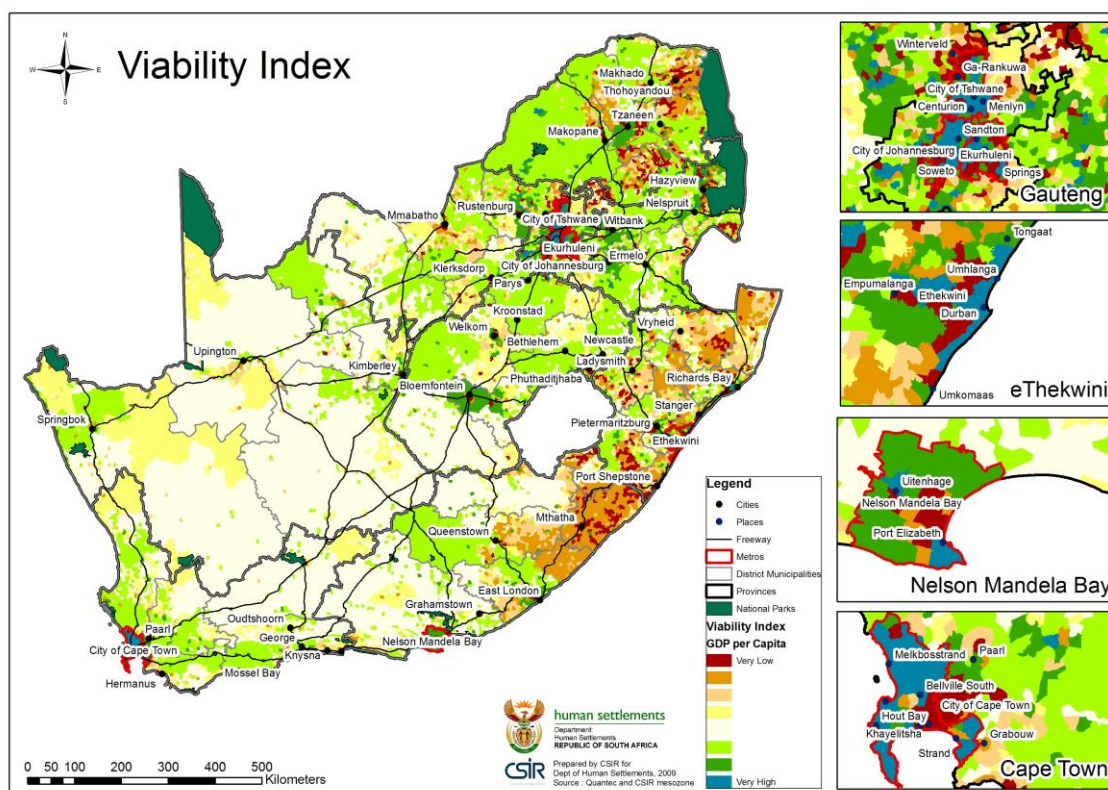
Regional disparities and inequalities are evident across as well as within regions and districts in South Africa. As set out above, most of these differences are historical and can be explained by productivity differentials among regions. These are evident in differences in GDP per capita, employment and unemployment ratios, dependency rates and labour productivity. It is also this same set of indicators that could be regarded as determinants of regional growth (See OECD, 2009), as they provide some indication of regional assets and the factors that are, or could potentially be, influencing regional growth. This could include industry specialisation, as well as the role of the labour force in regional competitiveness.

The illustrative overview of key regional assets and disparities include an analysis of:

- A. Areas and regions with relatively high or low levels of economic viability, as illustrated by an analyses of the size and diversity of the economy in the context of the population that it has to support (View 4.3.1A); and
- B. Areas and regions illustrating relatively high or low levels of employment and unemployment, in relation with dependency and participation ratios (View 4.3.1B).

REGIONAL ASSETS AND KEY DRIVERS OF REGIONAL GROWTH

View 4.3.1A: Areas and regions with relatively high or low levels of viability (GDP per capita & economic diversity)



Source: Human Settlement Investment Potential Atlas (Department of Human Settlements, 2009: 51). The index provides an indication of the viability of an area, where the size and diversity of the economy is related to the size of the population. The index was developed by calculating GDP/capita and placing a constraint on areas that depend on a single economic sector for more than 50% of its total economic activity. Data used from Stats SA and Quantec 2007, disaggregated on the Geospatial Analysis Platform (CSIR, 2006). The viability index can be read in conjunction with the GDP per capita analysis in Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

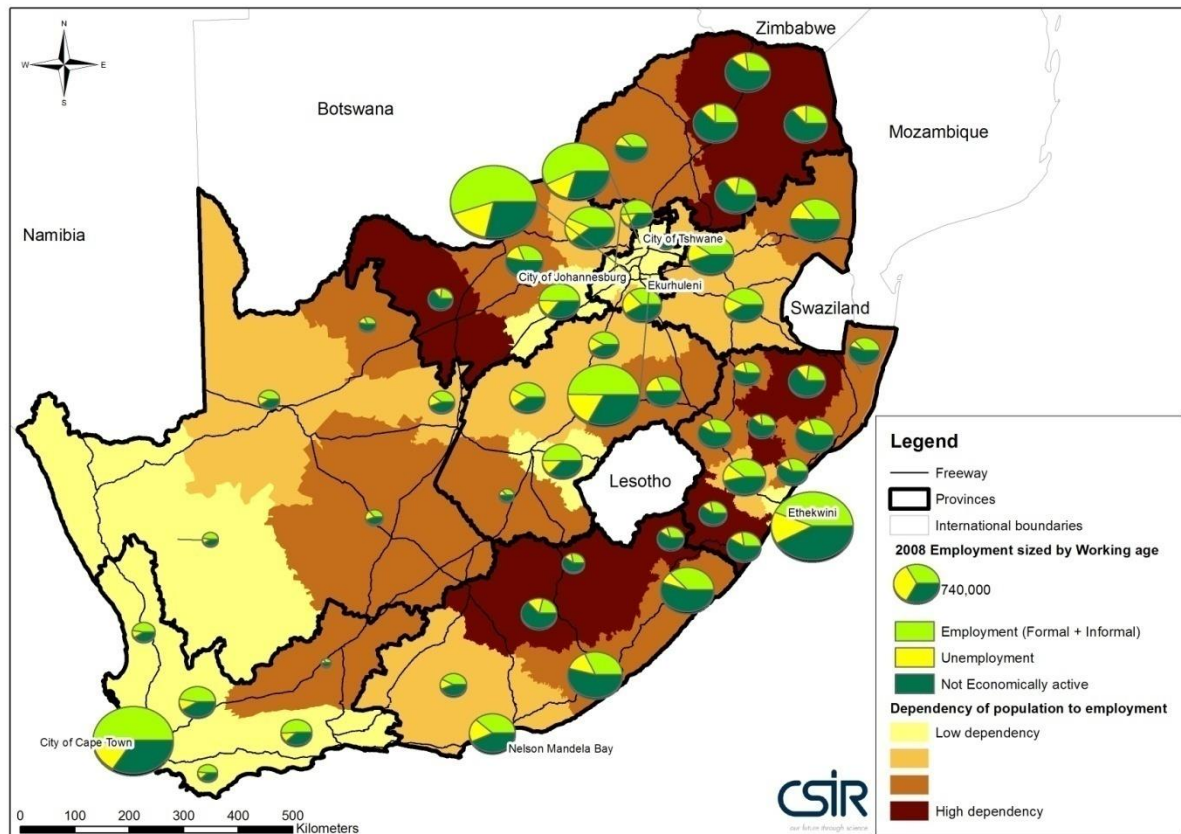
Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The viability index clearly illustrates the high viability and GDP/capita of the Gauteng, Cape Town and eThekweni metropolitan areas, in spite of growing populations. Places that ranked relatively high on this index are those with secondary cities and medium to large service towns, such as Bloemfontein, Kimberley, East London, Nelspruit, Tzaneen, etc., as well as areas that are rich in natural resources such as the mining areas of Witbank/Ermelo and Rustenburg and the predominantly agricultural areas of the Northern Cape, Limpopo, Free State and Mpumalanga. Areas characterised by a low viability index, largely due to very low levels of GDP/capita and economies dependent on government and community services sectors, are typically the densely settled areas in the Eastern Cape and KwaZulu Natal.

Implications: The continued and growing challenges faced by many regions in South Africa to provide opportunities for large numbers of people in the areas to create viable livelihood opportunities are clearly visible. The impact of growing populations, especially youth (as illustrated in section 4.2 of this report) in metropolitan areas could also have in future influence the relatively higher viability illustrated by areas in and around metropolitan nodes and towns. The index also suggests the importance of a targeted approach to the diverse categories of areas typically referred to as rural, in South Africa.

REGIONAL ASSETS AND KEY DRIVERS OF REGIONAL GROWTH

View 4.3.1B: Areas and regions illustrating different levels of employment in relation to dependency and participation ratios



Source: Department of Science and Technology (DST) and CSIR. (2010). Integrated Planning and Development Modelling Project, Project component: Policy Briefs. Dependency of the population (Working and not working age) on the employed population in the working age (15-64), has been calculated utilising 2008 Quantec figures (projected from 2007 StatsSA Community survey data).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za> and South African Risk and Vulnerability Atlas: <http://rava.qsens.net>

Short description: The analysis provides an indication of:

- (1) Areas characterised by high socio-economic vulnerability in terms of dependency of the total population on the portion of the population employed per district area (2007 figures). The darker brown shades point to district areas with the highest dependencies - where the non-economically active population (working age), unemployed, and non-working age (above and under) population outnumbers the economically active population by far. Levels of district level dependency ratios can be found along the eastern coast in the Eastern Cape and KwaZulu Natal, as well as North West and Limpopo provinces – excluding areas with metropolitan and other big urban nodes. Even though the metropolitan areas all have relatively low dependency ratios and significant growth in the economically active age group, they also seem to illustrate a noticeable and increased growth in the youthful population.
- (2) The breakdown in employment, unemployment and not economically active (in working age, 15-64) figures for 2007 (district areas) are illustrated with pie charts in relation to working age population size for the respective districts. Large rates of employed v/s unemployed are evident within the metro areas, marked by the biggest and most diverse economies. Other areas bearing evidence of a significant contribution in terms of employment are for example, areas where the economy is growing substantially and orientated towards primary sectors such as the mining areas in Bojanala and Waterberg districts and agriculture areas in the Cape Winelands district. The metropolitan areas, coastal cities (together with the former Bantustan areas) are also characterised by increasingly and alarmingly high numbers of people in the unemployment category and the former Bantustan areas especially by large numbers of working age people in the not-economically active categories.

Implications: The illustrative regional analysis clearly emphasises firstly the huge dependency of economically non-active population (in the working age), the unemployed, as well as those under and above working age on

the portion of the population that is employed. It secondly illustrate low levels of participation and thirdly the importance of the regions in the country that are currently driving employment and will, due to the size and diversities of their economies, hopefully continue to do so. The importance of maintenance and sound governance and investment in these employment engines, in order to maintain and grow access to employment opportunities, is clearly evident. These areas are typically those around metropolitan nodes, cities and towns playing a significant service role in their surrounding areas, as well as the resource rich areas. The culmination of high dependency rates, high levels of unemployment and relatively small numbers of people employed, point to serious challenges for economic sustainability and livelihood creation especially in the inland districts of the Eastern Cape and KwaZulu Natal provinces, as well as in Limpopo and North West.

4.3.2 Regional economic activity and growth

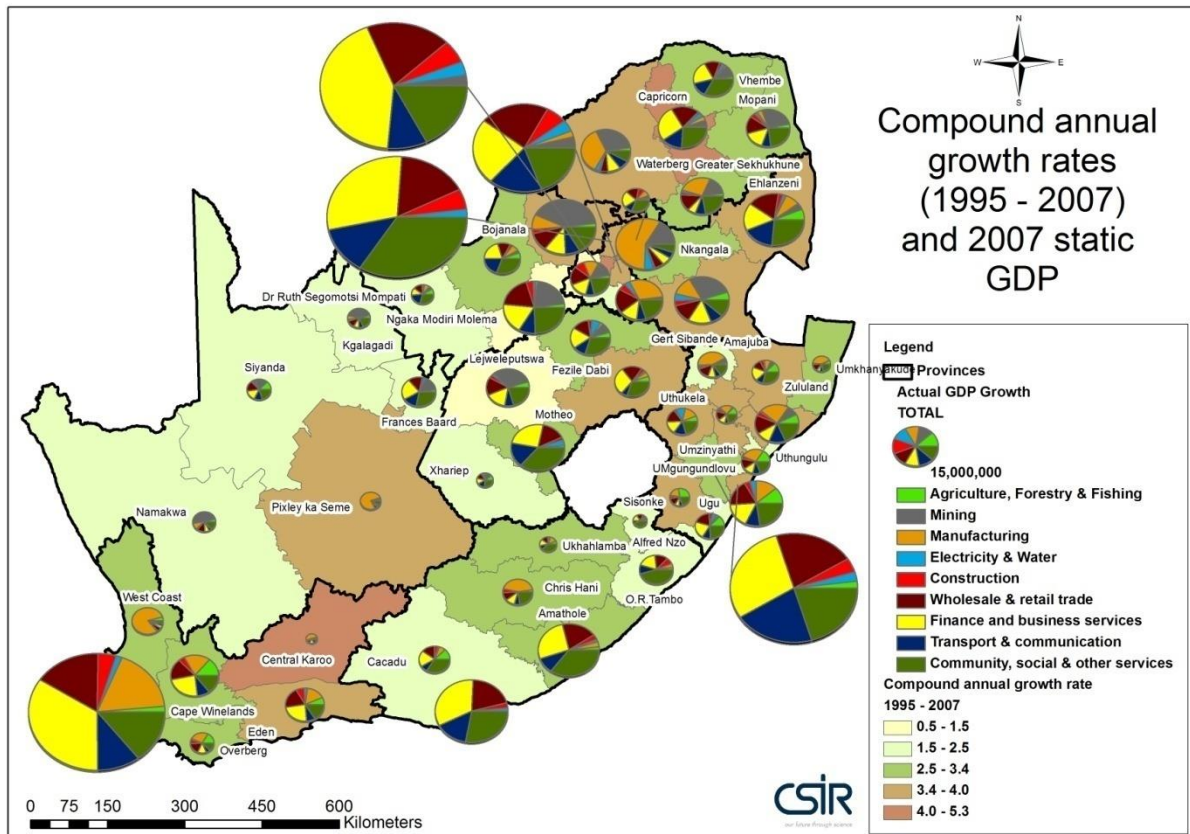
Regional economic differences can be explained by viewing differences in regional productivity and regional assets. Improving regional living conditions and regional economic development thus requires, not only improving participation rates in the economy and labour productivity, but also requires a better use of regional assets. In addition to the natural resources, human capital and innovation related assets, aspects such as industry specialisation and sector specific growth and trends, also provides a possibility to explore existing realities and future opportunities. This section thus focuses on providing an overview of regions illustrating high/low levels of existing economic activity (in terms of total GDP as well as specific sectors) and economic growth (1996-2007), as well as of growth and decline within specific sectors per district and metro area during this time. In relation to this, the growth and decline in regional employment is also considered.

The illustrative analysis and regional perspectives of economic activity and growth, included in this overview, thus focus on:

- A. Regions illustrating high levels of existing economic activity, as well as continued economic growth (View 4.3.2A);
- B. Regions of economic growth and/or decline within specific sectors (View 4.3.2B); and
- C. Regions illustrating growth in employment and skilled employment (View 4.3.2C).

REGIONAL ASSETS AND KEY DRIVERS OF REGIONAL GROWTH

View 4.3.2A: Regions illustrating high levels of existing economic activity, as well as continued economic growth



Source: Data Source: Quantec 2009. Adapted from: A national overview of spatial trends and settlement characteristics; Annexure C. Based on total and sector based GDP for 2007, as well as GDP growth rates for 1995-2007. For a more detailed comparative analysis see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).
Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The regional economic analysis provides an indication of the size of the economy illustrated by the size of the bubble diagram in relation to the growth of the economy, with high growth illustrated by darker colours in the background shading. The analysis (see SACN *et al*, 2009), illustrates the significance of:

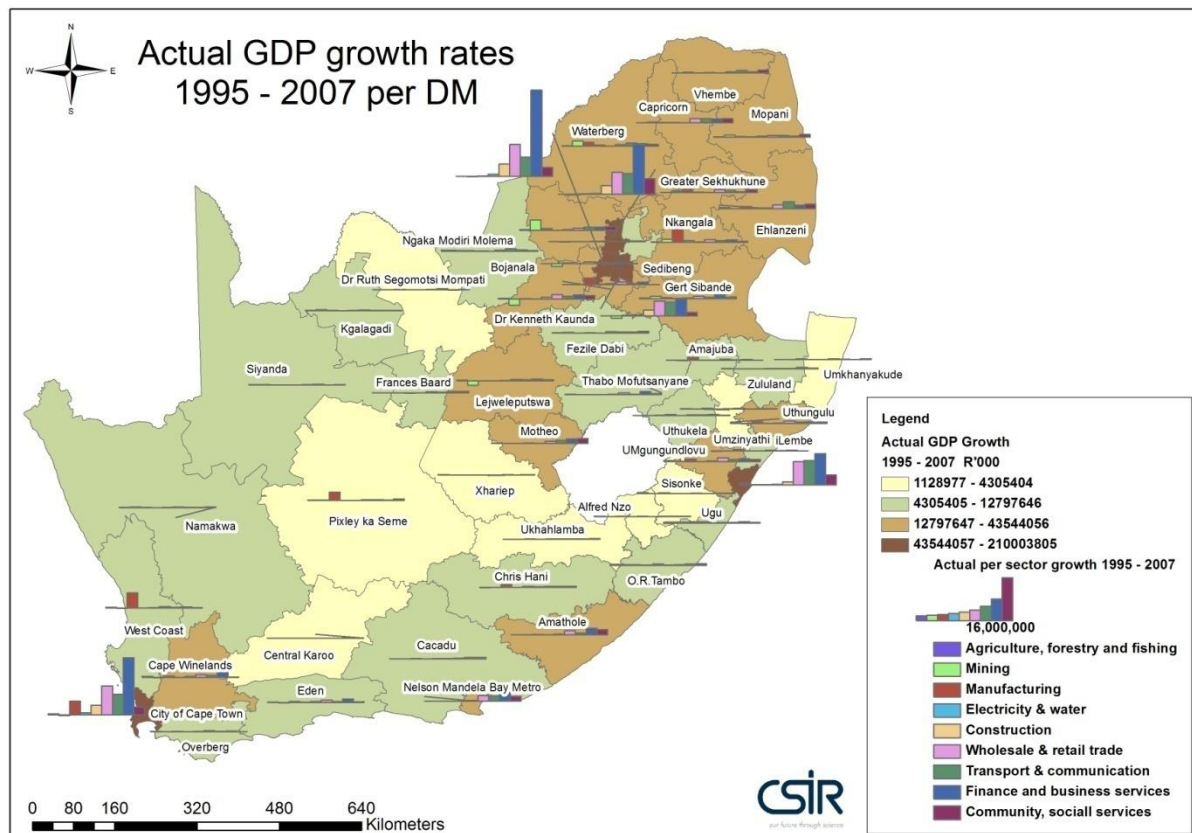
- primary sectors such as mining and agriculture in district areas such as Bojanala (Rustenburg), Ekangala (Witbank/Middelburg) and Govan Mbeki (Secunda);
- community and services sectors as evident in the City of Tshwane (with concentration of government services) and districts such as Amathole, Ehlanzeni, Vhembe, Mopani, Capricorn and Motheo. 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. These districts host large numbers of people with less prominent and less diverse economic activity.
- high growth rates, above 4%, in the Central Karoo (even though growing from a small economic base), the Capricorn District Municipality (Polokwane) and the City of Johannesburg (where growth from a very large economic base makes significant contributions to the regional and national economies).

Average growth rates of between 3.42 and 4.08 during this time period have been experienced in many of the Western Cape, Limpopo, Mpumalanaga and even KwaZulu Natal areas.

Implications: It should be noted that whilst growth is evident in many of the district economies, it could be considered growth in low-base economies, with actual growth and growth in job creation still being extremely limited, and overshadowed by the impact of growth in high base areas such as the metropolitan areas.

REGIONAL ASSETS AND KEY DRIVERS OF REGIONAL GROWTH

View 4.3.2B: Regions illustrating comparative levels of actual growth in total GDP and sector specific GDP



Source: Data Source: Quantec 2009. Adapted from: A national overview of spatial trends and settlement characteristics; Annexure C. Based on actual growth rate for total GDP, as well as sector specific actual GDP growth 1995-2007. For a more detailed comparative analysis see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

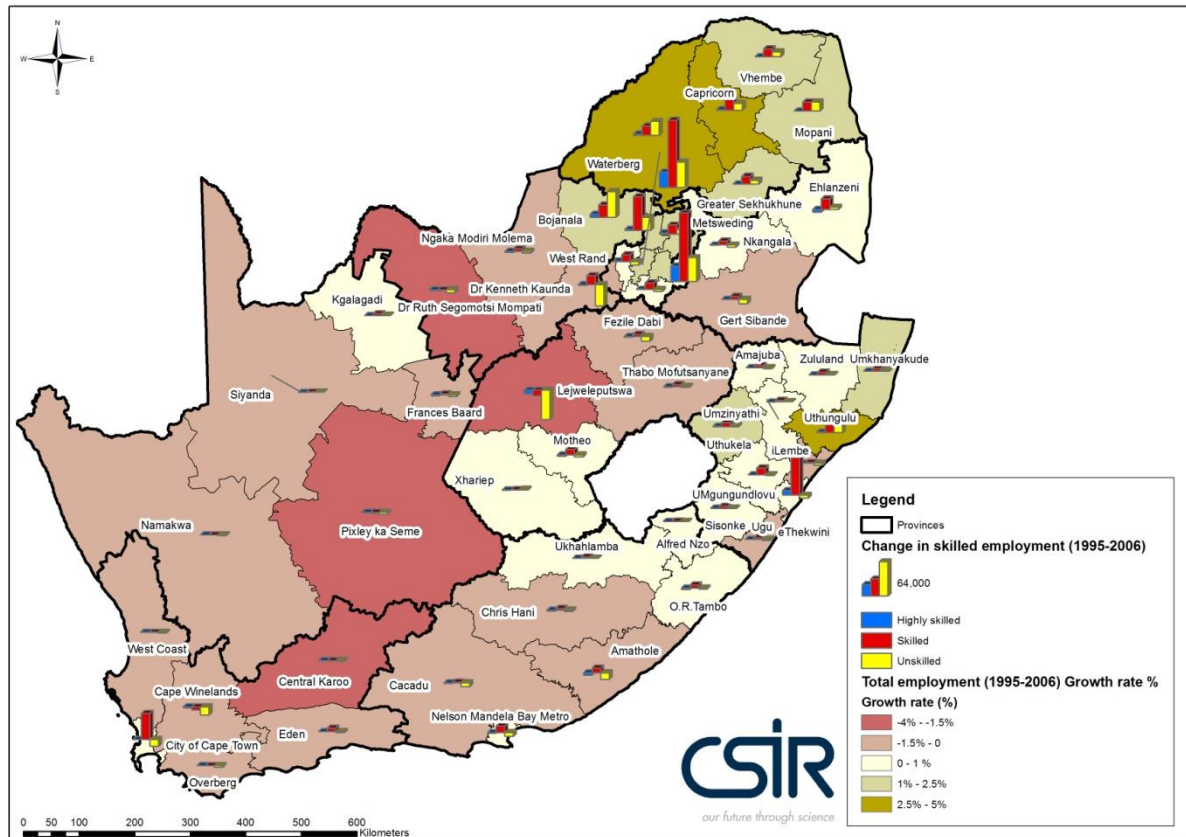
Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The illustrative overview indicates the actual growth within particular sectors (bar charts) on the map, with the actual growth rate for total GDP for 2007 as shaded background with higher growth areas marked in darker shading and lower growth in lighter shading. Within districts such as Bojanala (Rustenburg) and Waterberg it is evident that the mining sector grew significantly, whilst in Klerksdorp/Stilfontein and Welkom the sector visibly declined during the 1995-2007 period. A visible growth in the manufacturing sector can be seen in Nkangala (Middelburg/Witbank areas), Secunda/Ermelo, Cape Town metropolitan area, West Coast, and Pixley ka Seme district municipality with the financial, wholesale and trade and transport and communication sectors particularly growing in the metro areas. The analysis (read in conjunction with View 4.3.2A) also provides an indication of regions that were growing significantly, and did that from a high base originally. 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.

Implications: The importance of economic diversity and sector, as well as total GDP growth is self explanatory. In places with an existing high economic base, such sustained development and especially diversifying economies dependant on the primary sector, have to be supported for regional economies to thrive. The importance of areas with major service nodes and towns, as well as those areas with significant natural resource related economic activities for regional economic viability is evident. The growth as well as decline or stagnation in specific contexts also highlights key governance challenges for particular regions in order to sustain a growing economy that supports increased quality of life, sustainable development and shared growth. The impact of specific sectors such as growth in the construction sector in many districts and the decline in the mining sector in many districts also points to the potential impact of national strategies and the broader interregional and global economy.

REGIONAL ASSETS AND KEY DRIVERS OF REGIONAL GROWTH

View 4.3.2C: Regions illustrating growth in employment and skilled employment



Source: National Spatial Trends Overview: Annexure C (SACN *et al*, 2009), based on Stats SA and Quantec data for the period 1995-2006. For a more detailed comparative analysis see Section 4 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The analysis provides an overview of growth in total employment (pink shades illustrating areas where employment rates declined between 1995-2006, as well as an indication of changes within employment between highly skilled (blue), skilled (red) and unskilled (yellow) categories for the same time period. Evident is the growth of employment within the metropolitan areas, the central and northern parts of the country, the stagnation of employment in some of the KwaZulu Natal, Western Cape and northern Eastern Cape and Mpumalanga areas, as well as the declining of employment in many Western Cape, Northern Cape, Eastern Cape, North West and northern Free State districts. It is interesting to note that in terms of percentage growth in employment, the districts of Capricorn (Polokwane), Waterberg (mining areas) and Uthungulu (Richards Bay) have the highest relative growth. In absolute numbers the growth in employment is obviously provided through the metropolitan areas (see SACN *et al*, 2009). The increase of employment in the unskilled, skilled and highly skilled employment categories, within the city regions (metros) and secondary city areas (relevant districts) is evident. Just so is the decline in 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.

Implications: The stagnation and decline in employment growth is alarmingly wide spread across regions in South Africa. Once again similar spatial patterns emerge of employment growth in the central parts of the country, strongly associated with economies of metropolitan areas, strong towns and resource rich areas. With decline evident in the central and eastern parts of the country – also inevitably reflected by the ‘hollowing out’ trend evident within the migration figures.

4.4 Regional well-being and vulnerabilities

Regions that require consideration due to relatively high levels of socio-economic vulnerability, could in economic terms typically be described as regions illustrating high poverty concentrations and declining economies, as well as areas that illustrate high levels of dependency. The latter not only in terms of dependency of the non-economically active portion of the population on the economically active portion of the population, but even more so of the portion of the population that is not-economically active, as well as economically active but unemployed on that part of the population that is employed. These regions tend to be quite concentrated around major cities and towns, with increased migration and continued population growth and increased backlogs are also playing critical roles. In terms of environmental health, vulnerability could be characterised by high levels of child mortality and HIV/AIDS infections, as well as relatively low levels of access to services. Factors such as low education and skills levels also play a key role.

In this overview regional well-being and vulnerability are illustrated through a number of 'lenses', being that of:

- Regional well-being in terms of service accessibility, health and education;
- Regional socio-economic disparities; and
- Environmentally sensitive areas.

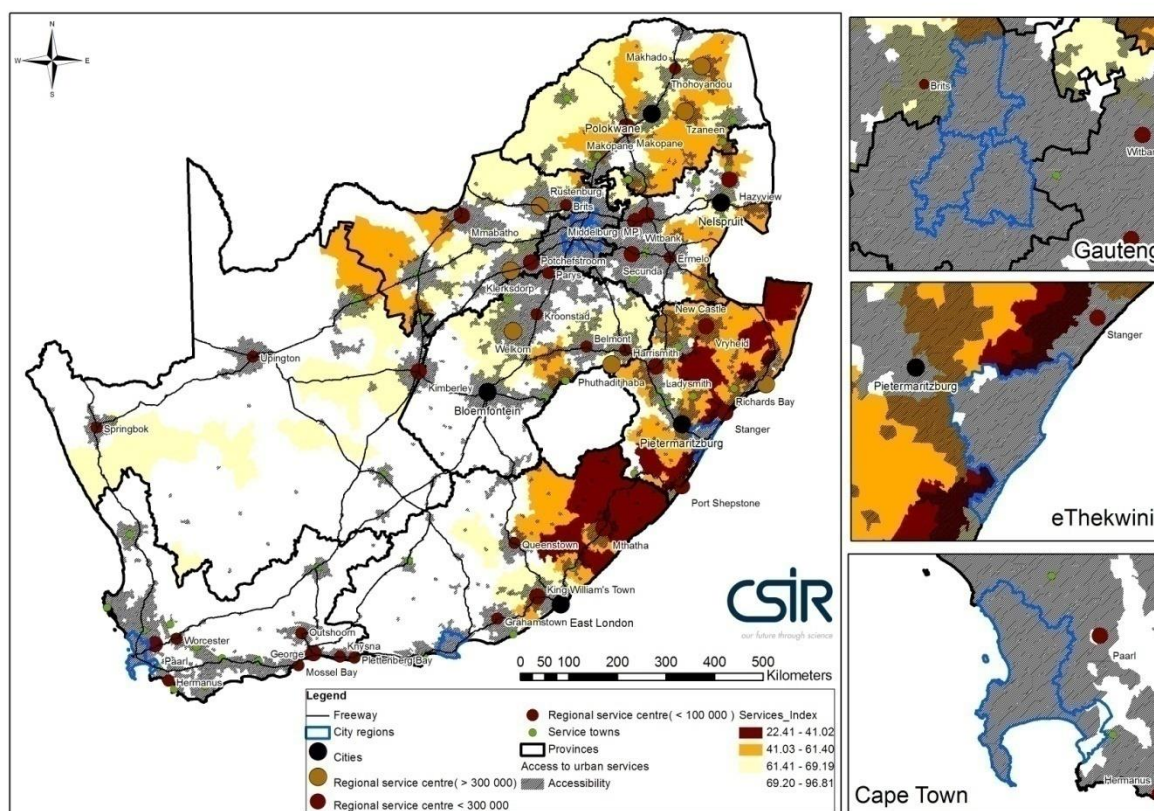
4.4.1 Well-being of regions

For the purpose of the overview, the well-being of regions has been explored through a number of illustrative analyses or 'lenses', including:

- A. Regions illustrating relatively high and low levels of accessibility to services (including basic municipal services as well as higher order government and economic services);
- B. Regions illustrating distressing health levels, as depicted by high HIV infection rates and perinatal mortality rates (View 4.4.1A);
- C. Regions illustrating high levels of HIV infection rates and low levels of access to municipal services (View 4.4.1B);
- D. Regions illustrating high levels of deprivation (View 4.4.1E); and

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.1A: Regions illustrating relatively high and low levels of accessibility to services (including basic municipal services as well as higher order government and economic services)



Source: Department of Science and Technology (DST) and CSIR. (2010). Integrated Planning and Development Modelling Project, Project component: Policy Briefs. The analysis comprises of two indicators. One being an indication of accessibility to urban functions, including government and economic services (utilising an aggregation of the Stats SA Urban Functional Index indicator for various nodes) as well as the settlement typology developed in the National Spatial Trends Overview study (SACN *et al*, 2009). Accessibility has been calculated making use of a 40 minute road access calculation on the geospatial analysis platform (GAP, 2006). The second indicator provides a combined index of the percentage of households per municipality with access to municipal services (as obtained from Quantec Stats SA Community Survey, 2007), including (i) Access to water (piped water inside dwelling or yard, or on community stand less than 200m from dwelling); (ii) Access to toilets (flush or chemical latrines); (iii) Access to refuse removal (including removal by local municipality at least once a week, communal refuse dump or own refuse dump); and (iv) Access to energy for lighting (i.e. electricity, gas or paraffin).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

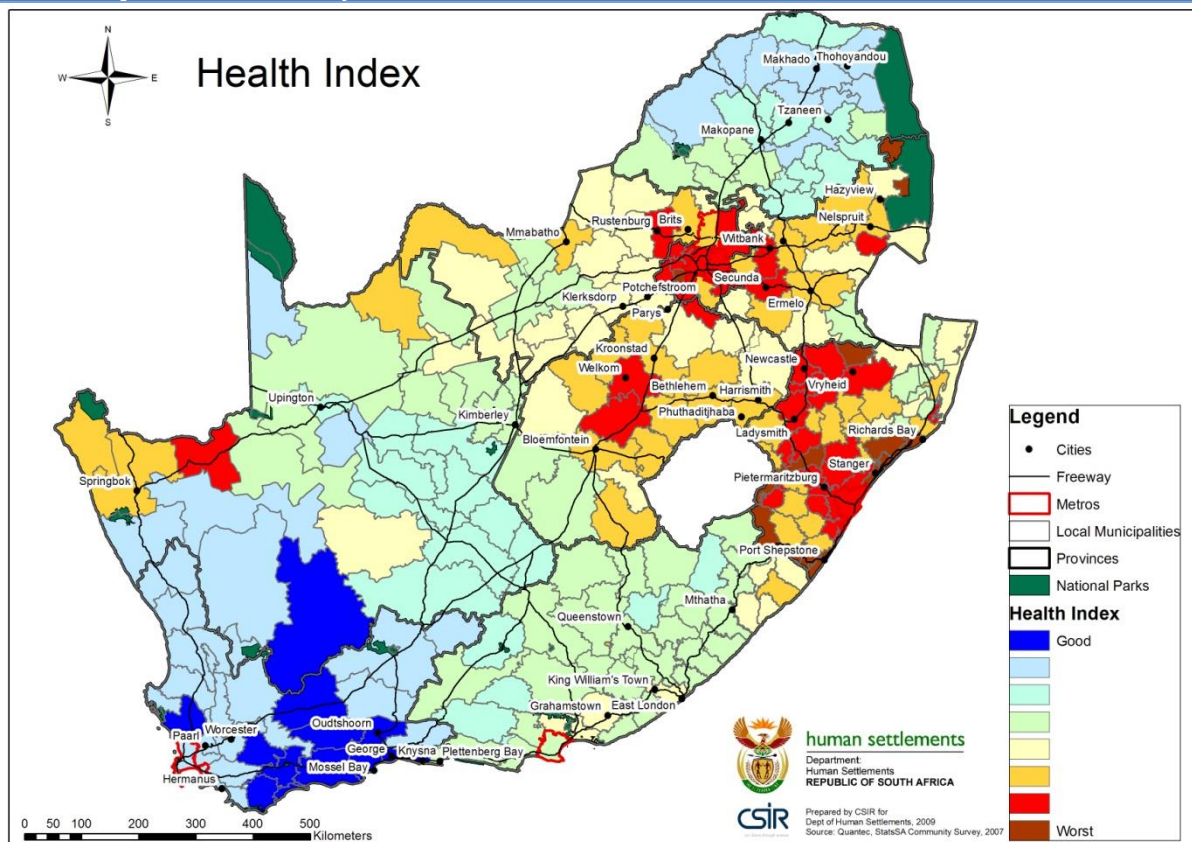
Short description: The illustrative analysis highlights areas characterised by high levels of accessibility to municipal services (no colour) and low levels of accessibility to municipal services (darker brown indicating lowest levels of accessibility), as well as areas playing a significant role in providing access to urban functional services (grey hashed). Low levels of access to municipal services are typically found in regions within the Eastern Cape, KwaZulu Natal, Limpopo, North West and to some extent Free State provinces, indicating high percentages of people in those areas without access to relative basic services.

The analysis of the spatial distribution of access to services, suggests that the areas where access to basic services are the lowest are not only those areas characterised by highly dispersed and dense settlements and low levels of GDP/capita, but also areas in which there are limited (inadequate) number of towns and access to service functions typically provided by towns in other regions of the country.

Implications: Areas characterised by comparably lower levels of access to municipal services in relation to access to economic activity and livelihoods point to regional vulnerabilities, in terms of both social as well as economic considerations.

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.1B: Regions illustrating distressing health levels, as depicted by high HIV infection rates and perinatal mortality rates



Source: Sustainable Human Settlements Investment Potential Atlas, 2009. Health index based on HIV infection rates per local municipality for 2007 obtained from Quantec, Stats SA Community Survey 2007 data and perinatal mortality rates per district municipality for 2006/2007 obtained from the Health Systems Trust, 2006/2007.

Short description: The health index provides a reflection of the health conditions of household members in a municipal area or specific region. The health index reflected here is a combination of two indexes, as developed for the Sustainable Human Settlements Investment Potential Atlas (Department of Sustainable Human Settlements, 2009), namely that of:

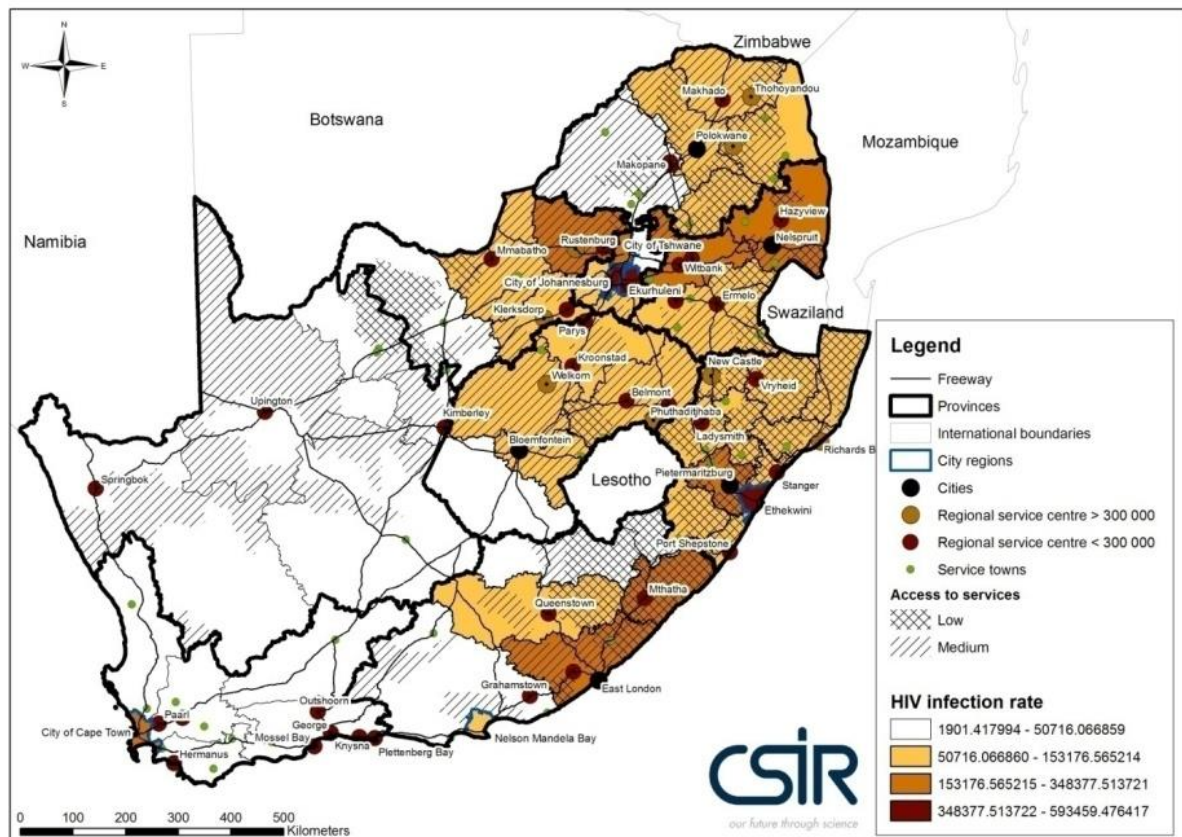
- HIV infections – utilised as an indicator of poor health of household members, and having a major impact on the South African society and economy at large; and
- Perinatal mortality rates – infant or child mortality rates are usually accepted as good indicators of the health conditions in communities and in this context the perinatal mortality rate (which provides an indication of foetal and neonatal deaths), is internationally recognised as a good indicator of the quality of health care.

The health index points to alarming conditions in the areas of KwaZulu Natal, in and surrounding Gauteng and in the central Free State, with bad conditions also evident in large parts of the Free State, North West and Mpumalanga (closely following the patterns of HIV Infections within the densely populated areas of the country).

Implications: The illustrative view of this composite index provides an indication of the severe challenges faced by municipalities in these districts, to address basic needs and socio-economic challenges as matters of urgency. The impact on social services, as well as on economic participation rates is evident.

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.1C: Regions illustrating high levels of HIV infection rates and low levels of access to municipal services



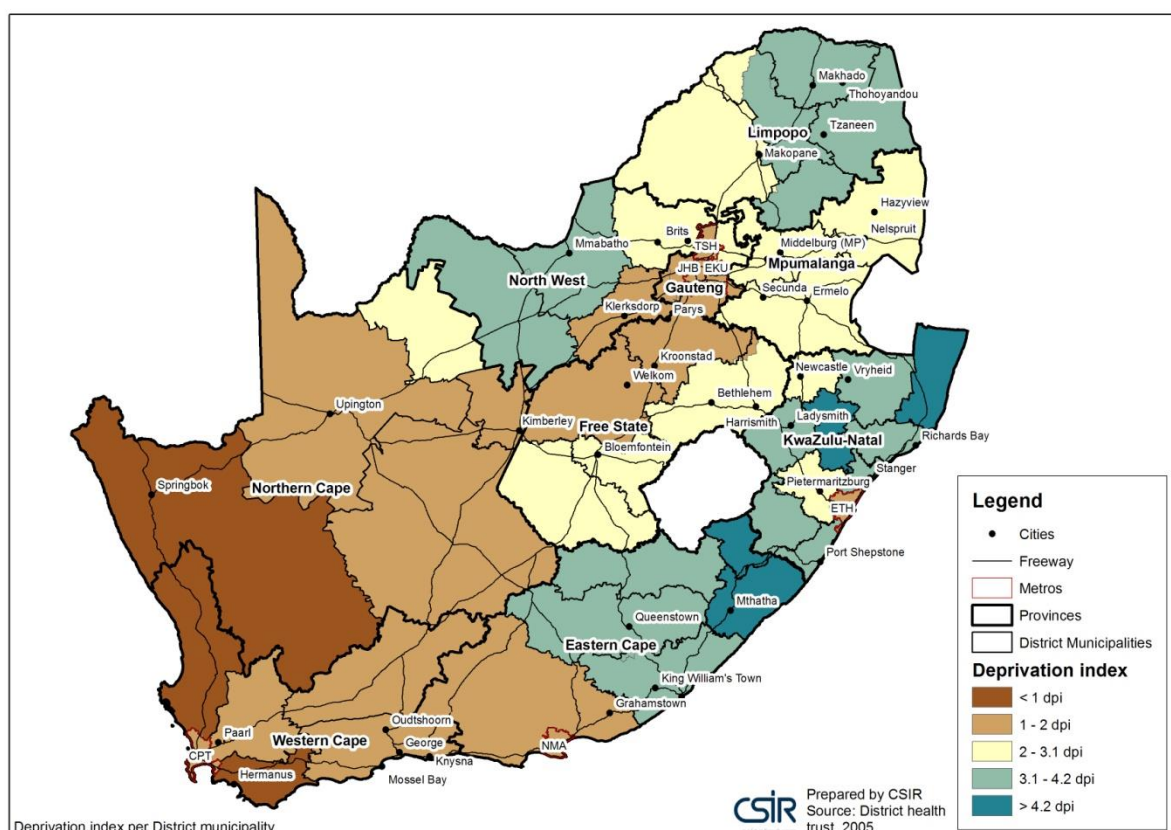
Source: Data obtained from Stats SA Community Services, Quantec 2007. HIV Infection rates and access to basic services (water, electricity, sewerage) calculated per local municipality area.

Short description: The map provides an indication of areas (data unfortunately at this stage only available at local municipal level) characterised by relatively high levels of HIV/AIDS infection within the municipality and low levels of access to basic municipal services (brownish backgrounds). The high rates of HIV/AIDS infection in KwaZulu Natal, Mpumalanga, Gauteng and some of the Free State district areas and high levels of child mortality in many of the highly populated areas (also including some of the North West areas) are alarming. Coupled with relatively low levels of access to services within the highly populated areas of KwaZulu Natal, Eastern Cape, southern parts of Mpumalanga and Free State, as well as northern parts of Limpopo and the North West provinces, it clearly illustrates the importance of improving access to services within these areas.

Implications: This illustration not only provides an indication of high rates of HIV infection in densely populated areas, but also provides an indication of the severe need and also lack of access to basic, as well as social services in some of the hardest hit areas. The implication of this is an obvious increasingly high challenge for municipalities in these districts, to address basic needs and socio-economic challenges.

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.1D: Regions illustrating high levels of deprivation



Source: District Health Trust, 2005. For a more detailed comparative analysis see Section 6 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

Short description: The deprivation index is a measure of relative deprivation across districts within South Africa. According to the District Health Trust: District Health Barometer 2007: The Deprivation Index is a composite index of deprivation using Stats SA census and Housing Surveys. The index shows socio-demographic variables that have the greatest influence on deprivation in the South African context. 1 = least deprived and 5 most deprived its lack of access to piped water, race, living standards, lack of access to electricity, female headed households, children under the age of 5, head of household being unemployed or without schooling.

It is evident from the analysis that the areas illustrating the highest deprivation index are typically the areas with high numbers of densely settled population, with limited service access, covering almost the whole of the Eastern Cape and large parts of KwaZulu Natal provinces, as well as a few districts in Limpopo and North West. In general the eastern and northern parts of the country seem to be much worse of than the rest of the country. It also illustrates the impact of low rates of participation in the economy and high dependency ratios.

Implications: The illustrative view of this composite index provides an indication of the severe challenges faced by municipalities in these districts, to address basic needs and socio-economic challenges as matters of urgency.

4.4.2 Regional disparities and high levels of socio-economic vulnerabilities

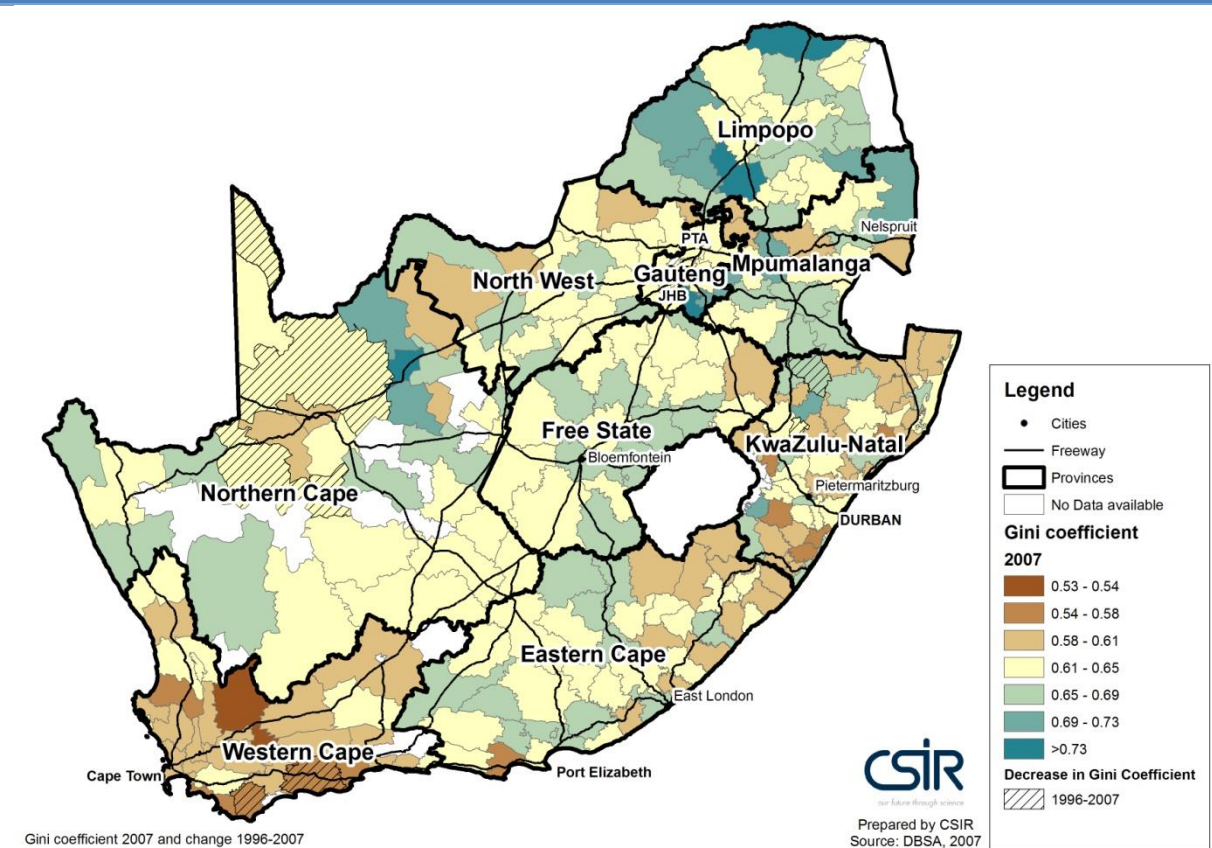
Other critical factors that could influence socio-economic vulnerability are high levels of inequalities and division, including income inequalities, disparities in access to services, spatial divisions and racial or cultural divides. Alongside with apartheid spatial legacies, factors such as geography, economic opportunities and wider availability of services continue to reinforce the concentration of population and production, as has migration (especially from younger population) from rural to urban areas (as in many other countries, see OECD, 2009). These patterns and trends are also embedding regional inequalities and impacting on the quality of life, the ability of households to create sustainable livelihoods and the capacity of government to provide adequate services.

The overview analysis provides a few illustrative readings of regional disparities, specifically with a view to highlight socio-economic vulnerabilities. These include:

- A. Regions illustrating high levels of income inequality as depicted by the gini coefficient (View 4.4.3A);
- B. Regions characterised by high dependency ratios and low levels of GDP per capita (View 4.4.3B); and
- C. Regions characterised by high numbers of people living in poverty, and under increased pressure of in-migration (View 4.4.3C).

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.3A: Regions illustrating high levels of income inequality as depicted by the gini coefficient



Source: Development Bank of South Africa, 2007. For a more detailed comparative analysis see Section 6 of the district, metro and provincial profiles developed as part of the Territorial Review (The Presidency, 2010).

Short description:

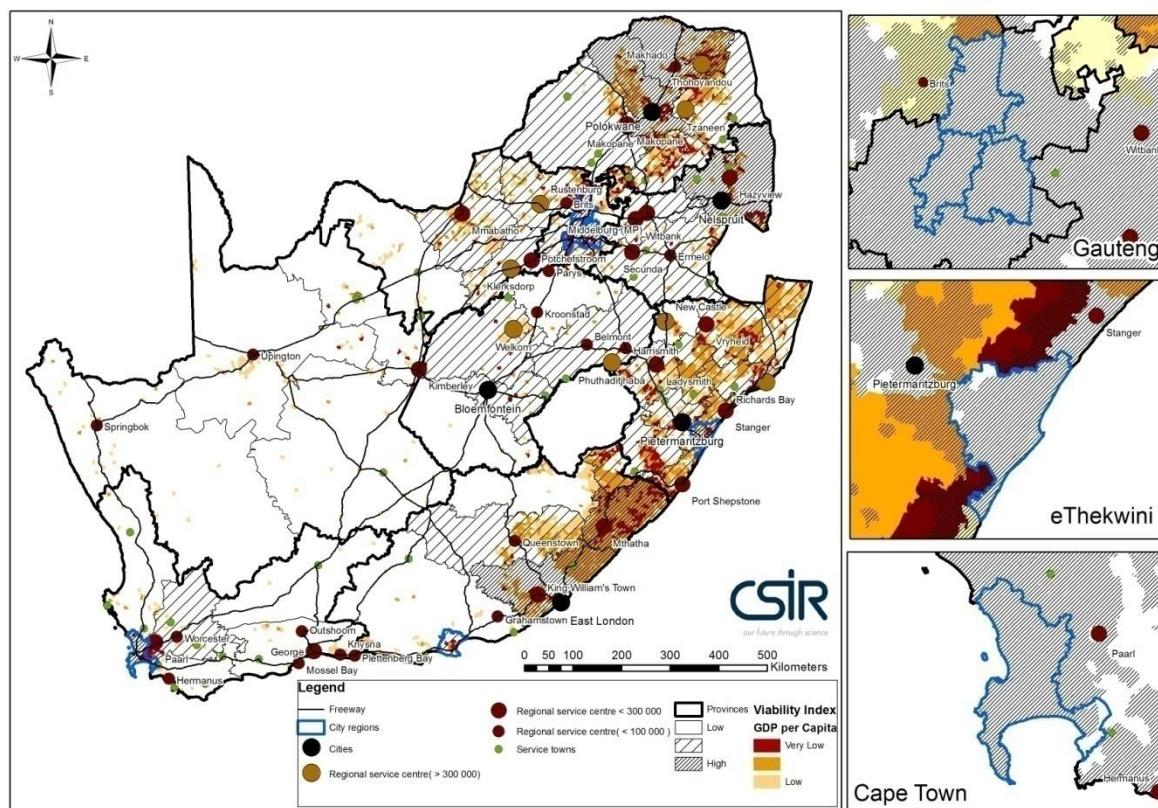
The Gini coefficient has a range from 0 to 1; A low Gini coefficient indicates a more equal distribution of income amongst society, with 0 corresponding to perfect equality, while higher Gini coefficients indicate more unequal distribution, with 1 corresponding to perfect inequality. According to the United Nations Human Settlements Programme the South African GINI coefficient for cities in 2008 stood at 0.73. (The Presidency, 2010)

The relatively high levels of income inequality in the northern and central parts of the country is clearly evident, as well as the relatively low levels of income inequality in the Western Cape province, as well as parts of Eastern Cape and KwaZulu Natal. An interesting pattern of lower inequality along the belt of more natural resource based economies across the northern parts of the Mpumalanga and North West provinces also comes to the fore, together with a few districts in the Northern Cape Province.

Implications: The alarmingly high levels of income inequality, as well as high and growing numbers of people living in poverty, together with the ongoing spatial concentration of such patterns in densely settled and increasingly vulnerable areas, pose a serious threat to social cohesion in South Africa and its regions. Even though not visible on the above map, it is important to keep in mind that these patterns of inequality and spatial exclusion are also strongly embedded within regions, and especially within metropolitan areas in South Africa.

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.3B: Regions characterised by high dependency ratios and low levels of GDP per capita



Source: Department of Science and Technology (DST) and CSIR. (2010). Integrated Planning and Development Modelling Project, Project component: Policy Briefs. Data obtained from Stats SA Community Services, Quantec 2007.

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

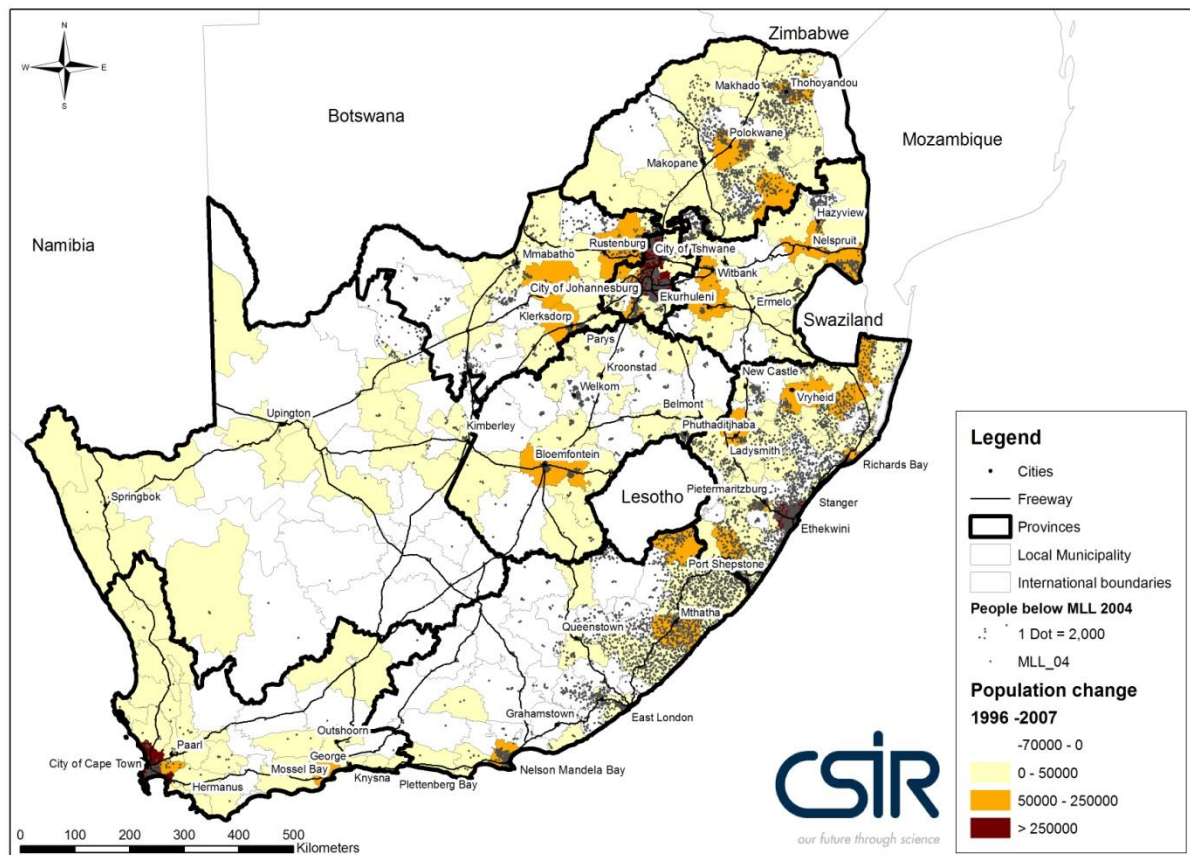
Short description: The illustrative view depicts regions that are characterised by high levels of socio-economic vulnerability. Within a broader regional context, these areas stand out due to:

- High dependency ratios (grey and hashed areas). The latter indicator has been calculated by making use of a ratio, not only considering economically active versus non-economically active. The ratio also takes into account the huge dependency of the economically active population on the component of the population that is actually employed. These areas are largely centred around the major metropolitan areas of Cape Town, eThekweni and Gauteng, as well as the highly populated district areas of Eastern Cape and KwaZulu Natal, Mpumalanga and Limpopo.
- Low and very low levels of GDP per capita - calculated not only considering income from economic activities, but also considering income from grants at municipal level. The biggest threat is evident within town centres and dispersed settlements in former Bantustan areas of Eastern Cape, KwaZulu Natal and through Limpopo province. The differentiated GDP/capita situation and high levels of inequalities within metropolitan regions are also evident, even at a regional scale.

Implications: It is evident that whereas the metropolitan areas and former Bantustan areas are under similar pressures in terms of dependency ratios, the relative higher access to economic activity in the cities and metropolitan regions make a huge contribution to GDP/capita, and more so, to economic livelihood. The spatial distribution of data, however, highlights the dilemmas of and inequalities amongst nodal areas within cities, often still reflecting the apartheid legacy.

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.3C: Regions characterised by high numbers of people living in poverty, and under increased pressure of in-migration



Source: South African Risk and Vulnerability Atlas (2010). Analysis utilises indicator of people and households living under the minimum living level, obtained from the geospatial analysis platform (CSIR, 2006) and NSDP 2006 (The Presidency, 2006).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The illustrative view depicts regions largely characterised by changes in population distribution over the period 1996-2007 (white indicating a decrease and dark brown an increase), as well as high numbers of people living under the minimum living level (dots on map).

With the clearly distinguished town-ward and city-wide migration patterns, the map highlights that the metropolitan areas and towns that are playing key service roles, are under increased pressure in terms of both population growth and in-migration (these figures do not include un-official migration). Out-migration seems to take place from the Northern Cape and central parts of the country and even from traditionally densely populated coastal districts (Eastern Cape), with population decline forming a central band from north to south in the driest and least hospitable part of the country (white areas on map). Associated with that, metropolitan areas seem to have experienced the largest growth (dark brown areas on the map indicate this as the city region areas of Gauteng and the port cities of Cape Town and eThekweni), followed by cities and large towns also illustrating high growth (dark orange areas on map) – highlighting coastal areas such as Nelson Mandela Bay, East London, Mossel Bay to Plettenberg Bay and Richards Bay, as well as major inland cities and towns such as Pietermaritzburg, Nelspruit, Bloemfontein, Rustenburg, Kimberley, Middelburg and Mthata).

Implications: Increased population pressures are exacerbated by the high number of people living in poverty, as evident in an analysis of households living under the minimum living level, specifically within the metropolitan areas and the former Bantustan areas (along the eastern coast and northern parts of the country). The illustrative overview reveals two contrasting classes of places with high poverty levels and increasing vulnerability: major towns and cities (including all six metropolitan municipalities) on the one hand and remote areas far removed from major cities and towns (for example districts such as O.R. Tambo, Amathole and Ehlanzeni) on the other hand.

4.4.3 Environmentally sensitive areas

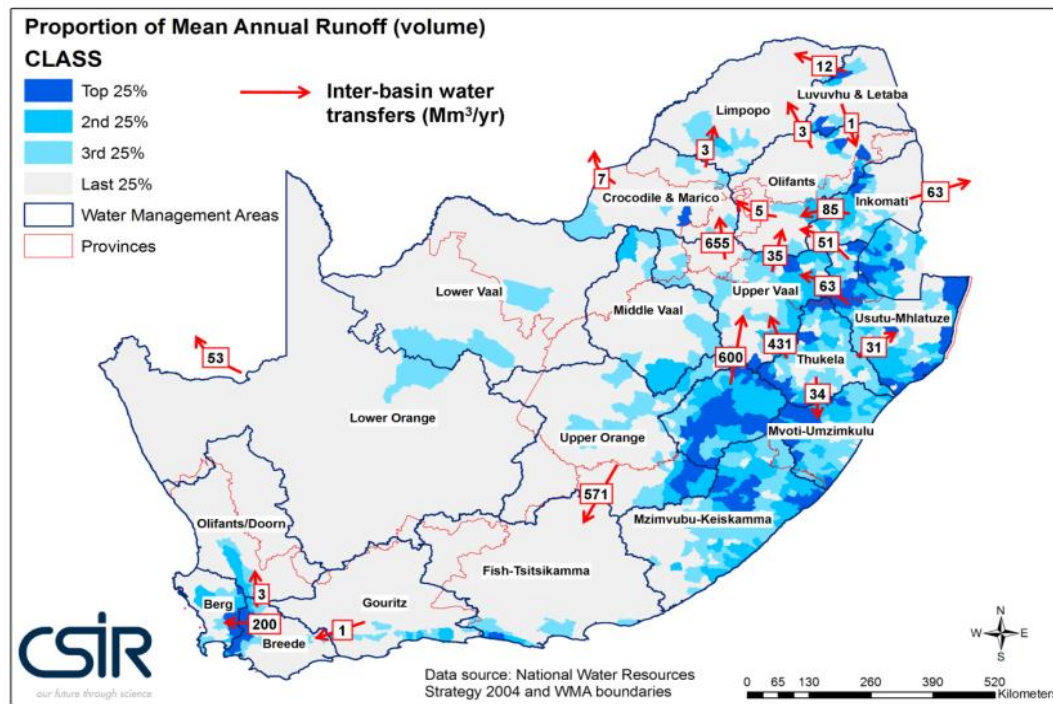
In order to provide some indication of regions and areas that require consideration due to relatively high levels of sensitivity and vulnerability related to the natural environment, indicators have been drawn from available and spatially comparable data sets depicting endangered vegetation, water supply and population pressures.

The illustrative overview includes:

- A. Regions illustrating high levels of dependency on water transfers (View 4.4.3A); and
- B. Regions illustrating high levels of vulnerability in terms vegetation, water supply and population pressures (View 4.4.3B).

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.3A: Regions illustrating high levels of dependency on water transfers



Source: National Spatial Trends Overview; Annexure E (SACN *et al.*, 2009). Developed from hydrological and spatial data from the National Water Resources Assessment 1990 (Midgley *et al.* 1994).

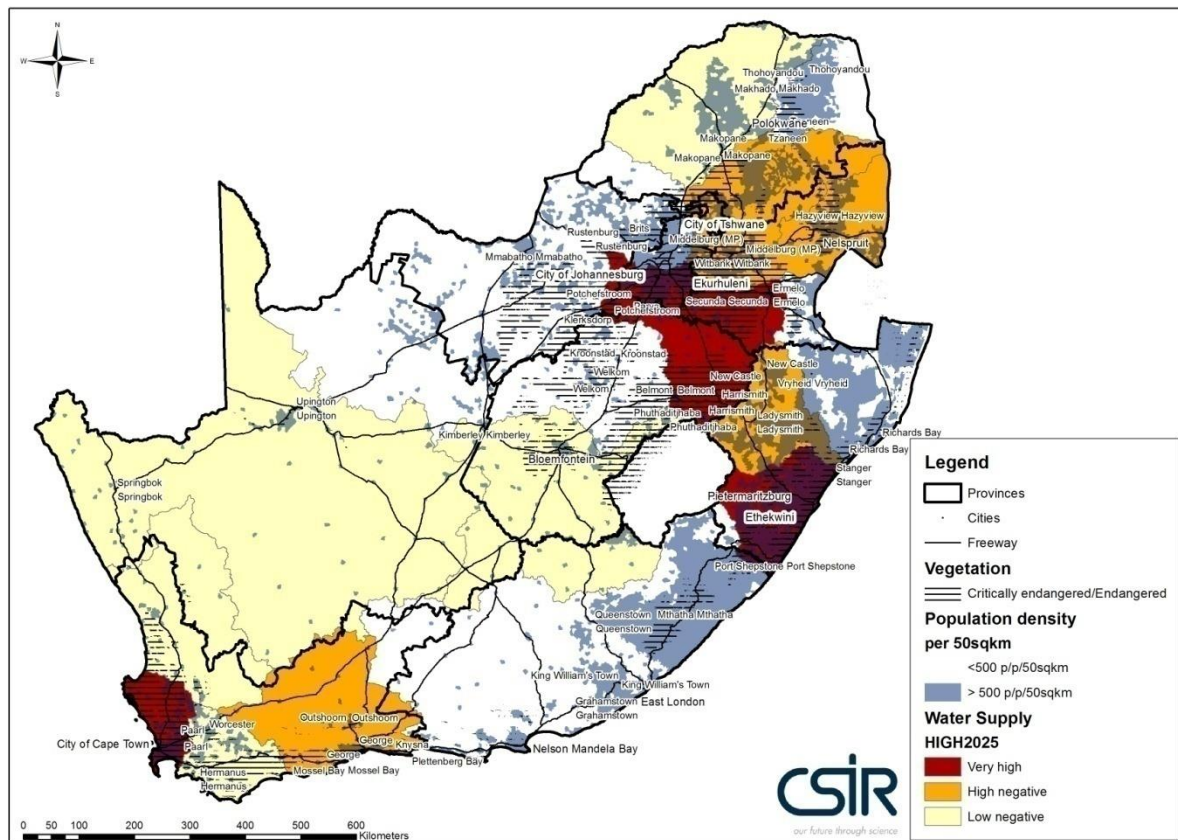
Short description:

The map depicts large volumes of existing water transfers (millions of cubic metres) between the different Water Management Areas as summarised in the National Water Resources Strategy (DWAF, 2004) and overlaid on catchment classification above. Note the huge transfers from the Thukela and Mvoti-Keiskamma Water Management Areas which supply water to the Gauteng region via the Vaal River system and the secondary transfer of water to the Tshwane metropolitan area.

Implications: Analyses and illustrations such as these, in combination with the water situation assessment, assist to identify regions in which water availability is already insufficient and where the situation will probably get worse. It also emphasises the volumes of water that are now a foregone option (opportunity cost) for supporting economic development and human welfare in the areas whose water has now been reallocated elsewhere. It is critical that rural development, agriculture and integrated regional development strategies consider the implication of this, as well as possible mitigation strategies. The implication for dependency on water transfers for metropolitan areas and their involvement as possible role players and collaborators in development and mitigation strategies within the areas acting as 'water reservoirs' considered.

REGIONAL WELL-BEING AND VULNERABILITIES

View 4.4.3B: Regions illustrating high levels of vulnerability in terms vegetation, water supply and population pressures



Source: Department of Science and Technology (DST) and CSIR. (2010). Integrated Planning and Development Modelling Project, Project component: Policy Briefs. Water supply estimates under conditions of continued population growth, obtained from analysis conducted for the National Spatial Trends Overview (SACN *et al*, 2009). Population densities based on 2007 population densities obtained from a disaggregation of Quantec Stats SA Community Survey data on the geospatial analysis platform (GAP) (CSIR, 2006). Critically endangered species (see View 4.1.1B) obtained from the National Spatial Trends Overview; Annexure E (SACN *et al*, 2009).

Other relevant sources: Toolkit for Integrated Development Planning <http://tip.csir.co.za>.

Short description: The indicators selected for the illustrative view were:

- High levels of critically endangered and endangered vegetation (hatched areas on map);
- Expected negative water supply levels, ranging from relatively low negative (yellow on map) to highly negative (red on map) under a high population growth scenario by 2025; and
- Population density of more than 500 people per km² (blue grey areas on map).

It is evident from the spatial distribution of the ecologically sensitive areas, that from Cape Town to the north, southern parts of Gauteng and Mpumalanga, northern Free State, as well as the area inland from eThekwin could be hardest hit in terms of water availability. These areas are also typically areas that house the major metropolitan areas, as well as generate substantial income in terms of economic activity (including the tertiary, agriculture and mining sectors, as well as areas generating income from tourism). The water situation seems thus to be a serious consideration in the Southern belt, as well as the north-eastern belt of the country. Critically endangered areas in terms of vegetation seem to be largely concentrated around the southern coastal areas, the central parts of the country and sections along the eastern coast – once again areas marked with high urbanisation and economic activity.

Implications: The current crude regional picture can be augmented with much more detail regarding specific river and groundwater conditions, vegetation types and possible climate influences. However, it clearly illustrates the interrelation between the ecology and socio-economic conditions and settlement patterns in the country. It is evident that regional and sector strategies should consider impact and contribution to ecological resilience.

5 Conclusion: Uniquely South African regional typologies, characteristics and challenges

The overview illustration of regions in South Africa provides an indication of numerous types of regions and different kinds of areas – depending on the specific ‘view’ or purpose of the analysis.

The analysis and various regional ‘views’, however, also seem to highlight some consistent patterns. Amongst the most prominent of these patterns, are those places that are throughout the different ‘views’ and types of analysis, featuring as places that seem to be:

- facing the biggest economic, service access, social and environmental challenges; as well as
- holding 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.

Due to uniquely South African regional characteristics (such as different land tenure systems, the apartheid spatial legacies still impacting the development of regions and large densely settled areas without a feasible economic base), the question could be asked whether traditional regional categorisations of “predominantly urban” or “predominantly rural” can suffice to illustrate the complex challenges faced by different regions?

In order to provide an indication of uniquely South African regional characteristics that could inform differentiated development and investment responses, the following regional interpretations are provided, in order to add some value to understanding:

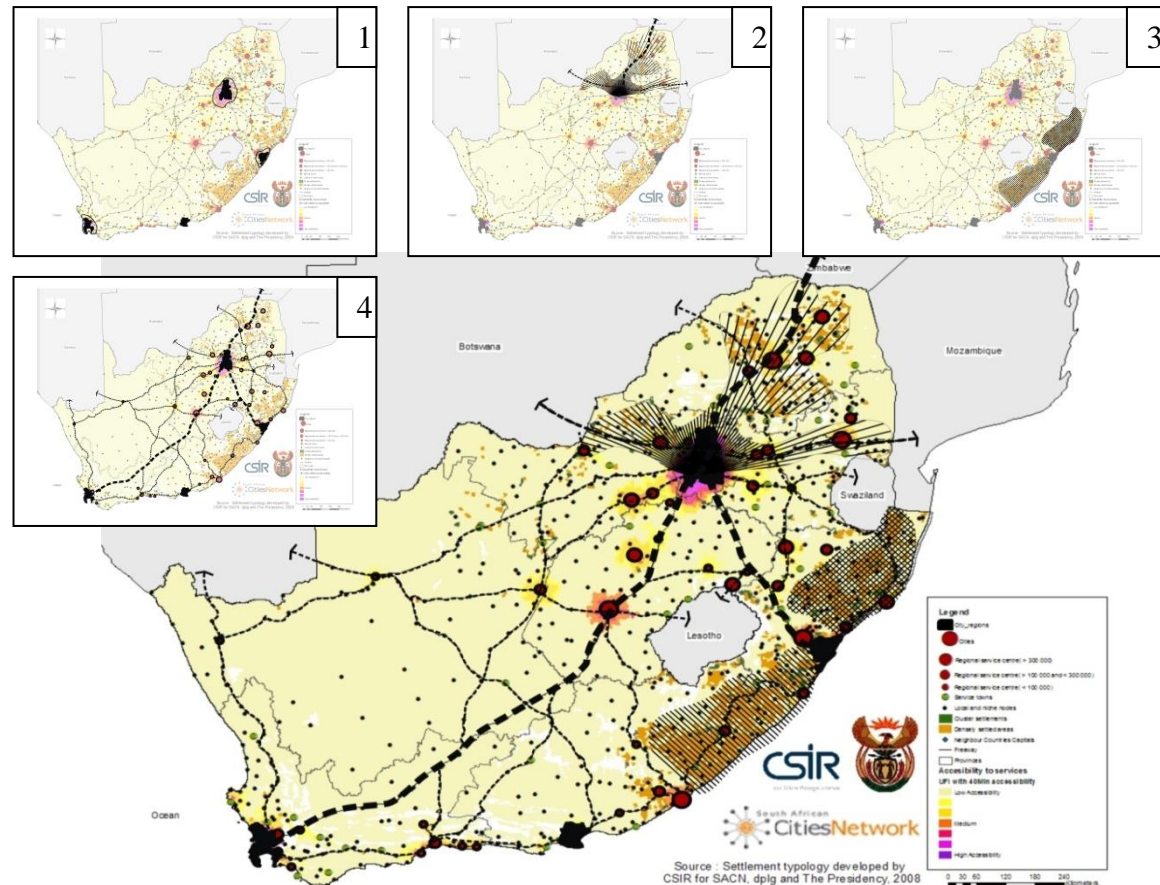
- Regions and places in which many of South Africa’s development challenges will have to be addressed (View 5A); and
- Regions and municipalities viewed in term of percentage population resident in, or in close proximity of, urban functional areas that provide access to high order government and economic urban functions (View 5B).

The analyses clearly highlights the different contextual realities and challenges faced by metropolitan, district and local municipalities in South Africa and the need for focussed and context specific, intergovernmental governance processes, strategies and responses across different regions.

Risk implications and vulnerabilities within the social ecological systems are obviously higher in conditions and areas characterised by high and increasing demands of development pressures on the natural environment, as well as in areas characterised by high socio-economic vulnerability. Especially in the context of developing countries, resilience is not only influenced by the geographic concentration of people, consumption and production, but is also closely tied to poverty, high levels of income and other inequalities.

UNIQUELY SOUTH AFRICAN REGIONAL TYPOLOGIES, CHARACTERISTICS AND CHALLENGES

View 5A: Regions and places in which many of South Africa's development challenges will have to be addressed



Source: National Spatial Trends Overview (SACN *et al*, 2009).

Short description: 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:

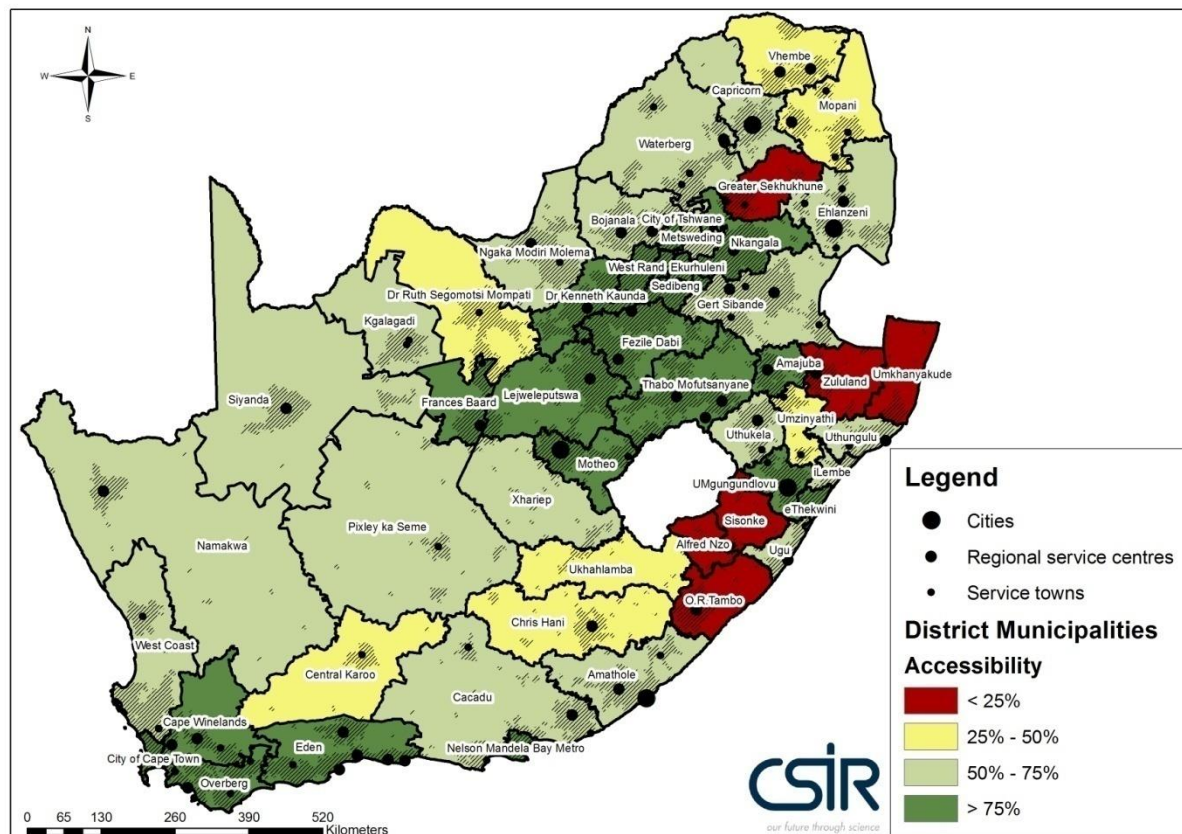
- The city regions, Gauteng and coastal city region areas (Map insert 1) – which the data (2004, GAP2) suggests are not only home of more than 38% of South Africans on less than 2% of the land area, the engines of the South African economy and fiscus (65% of all economic activity) but are also the generators 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 and huge needs for infrastructure investment and maintenance. They are also the places that form the gateway to the knowledge economy, Africa and a continued continental and international presence for South Africa.
- 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. These can broadly be described as:
 - 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 (Map insert 2);
 - 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 border area – Map insert 3).
- The network of settlements (ranging from cities to smaller towns (that provide a significant regional service centre role (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.

Implications: Based on these illustrative analyses of regions, it is obvious that city-regions, cities and the range of towns will have to play a vital role in most efforts aimed at addressing the range of regional development challenges in South Africa. It is also evident that as the range of different urban areas vary widely in terms of context and challenges and required maintenance and investment responses, the variation in rural areas are even more stark. Rural districts in South Africa illustrate widely differentiated characteristics. Many of which are closely associated with natural resource endowment, climate, etc. But many of which are also closely associated with settlement patterns and even more specifically, access to the diverse range of services and livelihoods typically provided by viable regional services centres.

UNIQUELY SOUTH AFRICAN REGIONAL TYPOLOGIES, CHARACTERISTICS AND CHALLENGES

View 5B: Regions and municipalities viewed in term of percentage population resident in, or in close proximity of, urban functional areas that provide access to high order government and economic urban functions



Source: Department of Science and Technology (DST) and CSIR. (2010). Integrated Planning and Development Modelling Project, Project component: Policy Briefs, and SALGA and CSIR. (2010). Differentiated development contexts and municipal development planning challenges. Draft report. Based on a 2007 population figure calculation conducted in terms of the South African Settlement Typology, developed as part of the National Spatial Trends Overview, (SACN, *et al*, 2009 – see View 4.2.2C) and the accessibility to urban functional areas (40 minute accessibility – See View 4.2.1C).

Short description: The analysis provides an indication of regions or district and metropolitan municipalities in terms of the percentage of their population that are resident in, or in close proximity of, urban functional areas that provide access to high order government and economic urban functions. It is evident from the range of illustrative analyses as set out in the overview report (see for example the illustrative overviews in the discussions around regional assets, access to services, access to employment, regional deprivation and dependency etc.) that:

- metropolitan and district municipalities (23 out of 52 municipalities) of which more than 75% (dark green areas on map) of their populations are residing within, or within close proximity of, regional service centres and towns, cities and metropolitan regions are typically the areas facing severe challenges in terms of urbanisation, in-migration, increased demands for services etc. These are also typically areas with huge demands on natural resources, energy resources and impacting high on socio-ecological vulnerability;
- district municipalities of which more between 50-75% (light green areas on map) of their populations are residing within, or within close proximity of, regional service centres and towns, cities and metropolitan regions, are regions and municipalities that are typically still described as 'rural', but are municipalities also facing substantial demands on service delivery and growing towns (15 out of 52 areas). Often these areas are marked by resource rich economies. These are also typically areas with huge demands on natural resources, energy resources and impacting high on socio-ecological vulnerability;
- the quarter of South African district municipalities of which less than 50% (yellow and red on the map) of

their populations are residing within, or within close proximity of, urban functional areas that provide access to high order government and economic urban functions, are typically the areas with huge dependency rates, unemployment, problems of access to services and typically regions that are featuring low in terms of economic development as well as regional well-being (health, services access, education, deprivation etc). Within this category the municipalities with less than 25% of populations in close accessibility to such service functions are also typically the municipalities that are characterised with large densely settled areas and a lack of viable regional services towns (only 6 district municipalities).

Implications: The national average of 65% district population residing in, or in close proximity of, urban functional areas with higher order government and economic services is illustrative of the reality of concentrated settlement patterns in many parts of South Africa. However 25 districts municipalities in South Africa are under this average, with six of these districts being home to a large portion of the population with extremely limited access to such functions and services, and the associated livelihood opportunities that they provide. The analyses clearly highlights the different contextual realities and challenges faced by metropolitan, district and local municipalities in South Africa and the need for focussed and context specific, intergovernmental governance processes, strategies and responses across different regions.

% of District and Metropolitan Municipality Population residing in, or in close proximity of, urban functional areas with higher order government and economic services **

District	PROVINCE	% of DM population
eThekweni	KwaZulu-Natal	100
Nkangala	Mpumalanga	100
City of Johannesburg	Gauteng	100
City of Tshwane	Gauteng	100
Ekurhuleni	Gauteng	100
City of Cape Town	Western Cape	100
Nelson Mandela Bay Metro	Eastern Cape	100
Sedibeng	Gauteng	99
West Rand	Gauteng	97
Motheo	Free State	93
Amajuba	KwaZulu-Natal	91
Frances Baard	Northern Cape	90
Dr Kenneth Kaunda	North West	88
Fezile Dabi	Free State	85
Lejweleputswa	Free State	85
Eden	Western Cape	85
Cape Winelands	Western Cape	82
Thabo Mofutsanyane	Free State	81
Overberg	Western Cape	78
UMgungundlovu	KwaZulu-Natal	76
West Coast	Western Cape	74
Cacadu	Eastern Cape	74
Siyanda	Northern Cape	71
Namakwa	Northern Cape	69
Pixley ka Seme	Northern Cape	69
Xhariep	Free State	67
Ehlanzeni	Mpumalanga	66
National Average		65
Bojanala	North West	64
Gert Sibande	Mpumalanga	63
Metsweding	Gauteng	59
Ugu	KwaZulu-Natal	57
Ngaka Modiri Molema	North West	57
Uthukela	KwaZulu-Natal	55
Capricorn	Limpopo	54
Waterberg	Limpopo	54
Amathole	Eastern Cape	53

iLembe	KwaZulu-Natal	51
Uthungulu	KwaZulu-Natal	51
Kgalagadi	Northern Cape	50
Mopani	Limpopo	48
Dr Ruth Segomotsi Mompati	North West	48
Umzinyathi	KwaZulu-Natal	43
Vhembe	Limpopo	39
Ukhahlamba	Eastern Cape	36
Chris Hani	Eastern Cape	34
Central Karoo	Western Cape	26
Greater Sekhukhune	Limpopo	25
O.R.Tambo	Eastern Cape	21
Zululand	KwaZulu-Natal	19
Sisonke	KwaZulu-Natal	16
Umkhanyakude	KwaZulu-Natal	16
Alfred Nzo	Eastern Cape	11
** Excluding small towns and densely settled areas		

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