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AN OVERVIEW OF SOUTH AFRICA'S METROPOLITAN AREAS – DUALISTIC, DYNAMIC AND UNDER THREAT...

Abstract: The article explores the threats posed to metropolitan viability and resilience in South Africa which is faced by continued spatial and economic concentration and duality – a trend also evident in a number of Central European countries. Examples are provided of trends and challenges impacting the resilience of South Africa's metropolitan regions, as identified in recent empirical studies conducted by the authors.¹ The paper argues that the agglomeration challenges facing South Africa's metropolitan regions and complications brought about by intra-metropolitan inequality are key aspects underlying the resilience of these regions. The article also suggests that there might be value in greater collaboration in research and knowledge-production and sharing in metropolitan planning, development and governance, between South African metropolitan regions and those in Central European countries.

Key words: South Africa, metropolitan regions, metropolitan inequality, urban resilience.

1. INTRODUCTION

South Africa underwent turbulent and dramatic socio-political and economic changes in the early 1990s after decades of totalitarian rule, followed by high economic growth levels in the next decade up to the 2007-economic downturn.

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¹ This includes, firstly, the *National Spatial Trends Overview, 2009* prepared for the South African Cities Network (SACN), former Department of Provincial and Local Government and The Presidency of South Africa and secondly, the *Gauteng Spatial Development Perspective*, prepared for the Gauteng Department of Economic Development in 2007.

The country was, however, not alone in this respect, as a number of countries, particularly those in Central Europe, of which Poland is the prime example, shared the same fate and has hence a lot to learn from each others' experiences. As many other countries, South Africa is facing serious challenges such as rising unemployment, growing income inequalities and vast territorial disparities between urban and rural areas, in spite of concerted efforts aimed at regional development in both countries (OECD, 2006, 2008a, 2008b, 2009; SACN *et al.*, 2009; The Presidency, 2007).

In addition to these stark disparities, the development dynamics in South Africa and countries such as Poland, reflect the critical role that cities and more particularly metropolitan regions (as central hubs of trade, culture, information and industry), play in their respective regional, national and international economies (see UN Habitat, 2006, 2009; Rust *et al.*, 2008). These roles include those of drivers of economic growth, pinnacles (and examples) of labour productivity, creators of new employment opportunities and portals to the knowledge economy. In the case of South Africa, the metropolitan regions alone produced 64% of the national GDP of the country in 2004 (SACN *et al.*, 2009). The latter is of course a phenomenon also echoed in other countries where, for example in Poland, urban areas contributed 68% to national GDP in 2006² (Dijkstra, 2009).

These GDP-figures are, however, not always seen in a favourable light by the governments of such countries, who view such phenomena as indicators of an unbalanced development pattern that has to be corrected. With this in mind, many countries have embarked on initiatives to ensure 'balanced development'³ (OECD, 2008a; Faludi, 2007) of which recent South African policies aimed at ensuring sustainable and shared growth and rural and regional development are good examples (SACN *et al.*, 2009; Oranje, 2008; South African Government Information, 2009). One outcome of this particular reading of the space economy is that the key role played by metropolitan regions in national and regional development is not appreciated, nor sufficiently recognised, and in some cases even contested in national policy statements and directives (OECD, 2006, p. 13; 2008a, p. 1; Rust *et al.*, 2008; Turok and Parnell, 2009; Oranje, 2008). It is of course not only about recognition of national economic importance, but also about a realisation that these areas are under severe ecological, social and economical threat (OECD, 2006, 2008a; UN Habitat, 2009; SACN *et al.*, 2009). Climate change, rising energy costs, high cost of renewable energy, domestic and international migration, increasing poverty and the restructuring of the

² Urban areas in this OECD definition represent all urban agglomerations of more than 250,000 inhabitants.

³ In Central European countries this is partly due to generous EU-funding to address regional planning issues.

labour market, are but some of the pressures placed on metropolitan regions (World Bank, 2009). In addition to this, metropolitan regions are typically faced with growing internal pressures as a result of increasing inequality, lack of access to opportunity and concentration of poverty.

Metropolitan areas in South Africa are also characterised by stark spatial disparities and fragmentation, which not only cements socio-economic inequalities, but also intensifies multi-dimensional inequalities of race, class, ethnicity, gender, sexuality and citizenship (Harrison, 2003; Soja, 2000; SACN *et al.*, 2009, Annexure F; van Huyssteen *et al.*, 2009b). In contrast to those who would see this phenomenon as the inevitable outcome of life in these areas, a recent study by the World Bank suggests that metropolitan spaces and the process of urbanisation that feed them, in most cases act as effective catalysts for convergence of societal dualities over the long term – with the first signs of broader societal convergence in countries often taking place in these urban areas (World Bank, 2009).

The geographic concentration of people, consumption and production in metropolitan areas bring with them a multitude of associated challenges, including the sustainability of ecosystem services such as water and energy, urban sprawl, social exclusion, increased crime, overload on basic infrastructure and services, congestion of roads and high cost of city logistics, which all threaten the resilience of the system. This is exacerbated by the inequalities and divergence in living standards in these regions manifesting in large sections of the urban population not having access to: (1) economic opportunities and/or livelihoods, (2) adequate and durable housing and secure tenure, (3) basic services such as energy, potable water and sanitation, (4) quality social services such as education, security and health-care, and (5) public facilities such as schools, hospitals, clinics and police stations.

It is against this background that the article argues that the challenges posed by concentration and agglomeration, together with inequality (-ies) and divergence in metropolitan regions pose threats to the resilience of these regions, which are of both metropolitan and national significance. Whilst the argument may be substantiated by the dynamics at work in South Africa as such, it does, however, not mean that it presents a challenge unique to the local situation at all. The issue of resilience is briefly considered, utilising the concept of 'urban resilience' as developed by Alberti *et al.* (2003), who view resilience in terms of 'the degree to which urban systems are able to tolerate alteration before reorganisation around a new set of structures and processes'. For the purpose of this article, and drawing on the framework of the Resilience Alliance (2007), the resilience of metropolitan regions is explored in terms of intersecting systems of economic and environmental resource flows, infrastructure and built environments, governance networks, as well as social dynamics.

In order to make sense of the current trends and resilience challenges facing South African metropolitan regions, a brief overview is provided of the historical events that impacted so dramatically on urban development in the country, and to recent urban policy approaches aimed at overcoming the problems of past development approaches. This is followed: (1) by a brief illustration of the impact of concentration and agglomeration challenges and resulting disparities in the national context, as well as from the angle of intra-metropolitan inequalities and disparities, and (2) by an exploration of some of the implications concentration and dualities have on the role and resilience of South African metropolitan regions. Lastly, it is argued that these challenges of regional and national significance, as highlighted, could assist in identifying fertile areas for further research and knowledge sharing on South African, and hopefully also other metropolitan regions and countries, facing similar challenges.

2. THE STATE AND URBAN SOUTH AFRICA 1948–2009

Not long after its election victory in 1948, the Nationalist government embarked on a programme of implementation of its master plan of separate development. This programme had as its premise that black South Africans would never be permanent residents of the country's urban areas and that peace between the racial groups was best secured by racial separation. This saw the passing of racist legislation such as the Group Areas Act (No. 41 of 1950), which assigned different residential and business sections in urban areas to each racial group, and led to the forced removal of Blacks from areas designated for white occupation.

It was only in the middle-1990s that the transition from the apartheid government to post-apartheid democratic governance and planning approaches began. Based on the 1996-Constitution, which can be described as 'quasi-federal in form, but unitary in function' (Oranje and van Huyssteen, 2007), a new vision for reconstruction and development emerged. At the same time an inter-governmental planning system was crafted, which included strategic development planning in the municipal, as well as provincial and national spheres. In spite of the new non-racial policies and a radically new approach to planning, apartheid spatial patterns and inequalities persist in most metropolitan regions, cities and towns, and the contrasts between urban and rural areas remain stark. This is especially evident in the former Bantustan areas created during the apartheid era.

The local sphere of government, most strongly mandated with governing the country's metropolitan regions, faces particular challenges, which tend to pose serious threats to the resilience of these regions. Key among these challenges

are: (1) the lack of fiscal decentralisation to match the new developmental role that local government is expected to play, (2) lack of clarity about the roles of different spheres of government, as many of the powers and functions are 'concurrent' – an intergovernmental complexity also shared by countries such as Poland, (3) challenges with ensuring that the decisions of other spheres of government are aligned with metropolitan strategic planning, (4) huge institutional transformation challenges, which include the consolidation of former municipalities, often with large peri-urban and rural areas, into larger metropolitan entities, (5) the need to conduct strategic planning exercises within limited human and financial capacity, and (6) service delivery challenges of a scale and type not previously faced by the former much more 'urban' and racially-defined municipalities. Most municipalities also find themselves struggling with the delicate task of balancing very local and regional, and even national, development needs. These challenges create a fundamental problem for addressing delivery challenges and for overcoming the spatial legacy of apartheid spatial practices (Meiklejohn and Coetzee, 2003).

3. A DESCRIPTION OF KEY TRENDS AND CHALLENGES OF METROPOLITAN REGIONS IN THE SOUTH AFRICAN DEVELOPMENT CONTEXT, WITH SPECIFIC REFERENCE TO THE GAUTENG METROPOLITAN REGION

In this section some of the results of independent reviews into South Africa's metropolitan regions, with an emphasis on their dualities, dynamic abilities and challenges, are highlighted.⁴ These reviews in many ways can also be related to similar studies conducted on metropolitan regions over the last couple of years in many other countries, especially by the OECD (2006, 2008a; Dijkstra 2009).

Gauteng (the Johannesburg-Pretoria area) is by far the biggest and most accessible metropolitan region in South Africa, located centrally in the country. The other metropolitan areas are situated along the coast – Cape Town on the southern point, eThekweni (formerly Durban) on the east coast and Nelson Mandela Bay (formerly Port Elizabeth) on the south-east coast (see figure 1).

Recent analyses of these metropolitan regions clearly illustrate, firstly the high levels of economic and social concentration in these areas, and secondly the extreme inequalities and divergence in living standards within these areas. Furthermore, these latter phenomena have not been getting better, but instead

⁴ Studies in this regard have been done in both Poland and South Africa over the last couple of years. See e.g. OECD (2006, 2008a) in the case of Poland and SACN (2009) in the case of South Africa.

have been amplified by continued urbanisation and other spatial trends over the last decade – illustrated in more detail by examples from the Gauteng metropolitan region in this article.

For the purpose of the paper and to enable comparative analyses, the South African metropolitan regions are described in terms of: (1) a functional description that largely corresponds with the criteria as set out in the *Territorial Reviews: Competitive Cities in the Global Economy* (OECD, 2006, p. 32), where large dense urban areas, typically with more than 1.5 million people, are characterised by a contained labour market, densities of more than 150 people/km² and strong commuting flows⁵, and (2) a legal/administrative description that include areas that are classified as ‘Metropolitan Municipalities’ in the country. In the South African case Nelson Mandela Bay (formerly Port Elizabeth) Metropolitan Municipality is included in the analyses, even though its population is just over 1 million persons, it is legally classified as a ‘Metropolitan Municipality’.

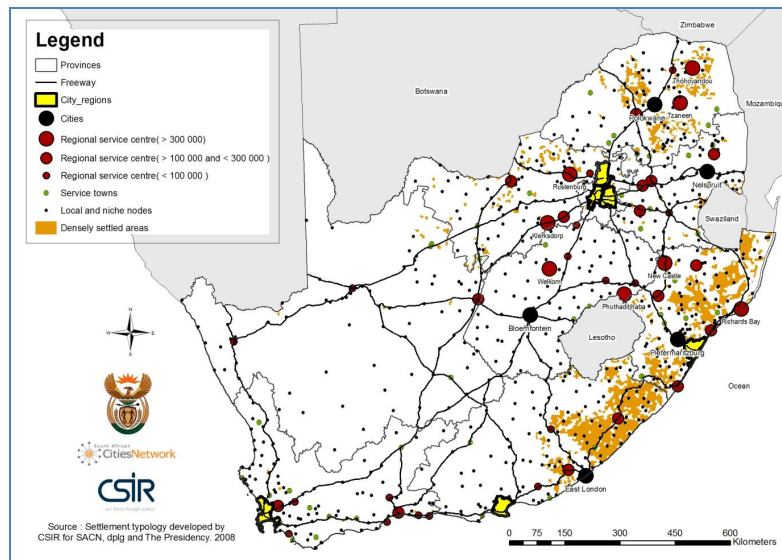


Fig. 1. Metropolitan regions within the context of the polycentric network of cities and towns in South Africa

Source: SACN *et al.* (2009)

⁵ Based on the criteria developed to define city region areas within the National Spatial Trends Overview (SACN *et al.*, 2009), ‘linkage’ indicators were not only commuting flows, but also included road networks, proximity, travel distance, settlement patterns, transport logistics corridors, firm networks and commuter patterns were taken into account. The calculation of commuting flows, also takes into account high density apartheid commuting ‘sleep towns’ that were created on the edges of core urban areas and are functionally linked through commuting.

Table 1 and figure 2 provide an indication of how the functional regions of the metros relate to their municipal boundaries.

Table 1. Functionally delineated metropolitan regions in relation to official metropolitan municipalities for South Africa

Metropolitan region	Official metropolitan municipalities within this area [*]
Gauteng	City of Johannesburg, City of Tshwane (formerly Pretoria), Ekurhuleni Metropolitan Municipality (formerly Kempton Park/Germiston). This area also includes current district municipalities in the west rand and east rand areas, as well as areas to the north-east of the former Pretoria
Cape Town	City of Cape Town and surrounds
eThekweni	eThekweni Metropolitan Municipality (formerly Durban) and surrounds
Nelson Mandela Bay	Nelson Mandela Bay Metropolitan Municipality (formerly Port Elizabeth) and surrounds

^{*} The functional metropolitan regions also span across some surrounding district and local municipalities.

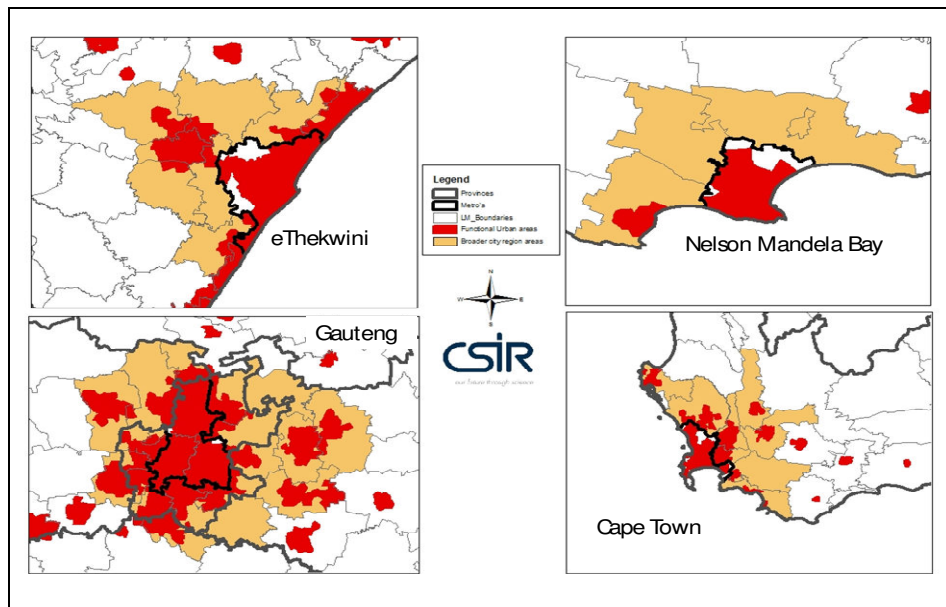


Fig. 2. South Africa's metropolitan regions with administrative metropolitan municipal areas (black boundaries) and broader functional region areas (shaded)

Source: van Huyssteen *et al.* (2009b, p. 5)

3.1. Concentration and Agglomeration Trends and Challenges

A large part of the South African space economy is generated in the four metropolitan regions and in particular the Gauteng City Region. Together these regions produced more than 64% of the South African economic output in 2004 and provided home to 38% of the South African population (CSIR, 2006). The Gauteng Region is by far the biggest, housing almost a quarter of the country's population (the analysis suggests more than 22%) and contributing almost 39% to the national economy (CSIR, 2006).

Even with an analysis for the metropolitan regions calculated in the most conservative way (i.e. measured merely on the basis of the administrative boundaries of the official metropolitan municipalities), their dominance is still evident, with the 2007-data at municipal level indicating that an estimated 35% of South Africans and 57% of economic output in the country was concentrated in these areas.

A recent analysis of South African population growth (reflecting natural growth as well as migration) of the entire country for the period 1996–2007 (SACN *et al.*, 2009), indicates that this dominant concentration has largely been the result of a steep growth in population (an increase of more than 4.3 million people) during the last decade. The average population growth rate in metropolitan regions was 2.9% during this 11-year time period compared to national average of 1.8% (SACN *et al.*, 2009). The highest average growth rates were recorded in the Gauteng and Cape Town metropolitan regions at 3.3% and 2.9% respectively.

Another major influence on metropolitan growth seems to be internal migration trends between 2001 and 2006 (The Presidency, 2007; SACN *et al.*, 2009) with the most dominant movements in the country recorded to the Gauteng, Cape Town and eThekweni Metropolitan Municipalities, without even recording influx of immigrants from outside the country.

Alarmingly, the population pyramids of metropolitan regions bear testimony to a rising concentration of youth (0–14 of age), as well as young working-age adults (15–34 years of age) (SACN *et al.*, 2009). This echoes both natural population growth as well as the magnetic pull of better economic opportunities for working-age adults in the metropolitan regions, compared to the rest of the country. The attractiveness and results of concentrated economic activity in the metropolitan regions are also visible in the high concentration of economically active population (15–65 years) within these areas, with almost 50% of the national growth in economically active population in the country between 1996 and 2007 concentrated in five of the six metropolitan municipalities (SACN *et al.*, 2009).

The significance of the metropolitan areas within the South African national economy is clearly evident in terms of contribution and size, as well as sustained growth, of their economies. Between 1996 and 2007 the economies of the metropolitan municipalities grew at 4.3%, in comparison to the national average of 3.7% (SACN *et al.*, 2009, Annexure F). Over the last 5 years the economies of the three Gauteng and Cape Town metropolitan municipalities specifically demonstrated a vibrancy and growth at 5% and 5.6% respectively (6.2% and 7.1% respectively in 2007).

Metropolitan regions also play a critical role in driving innovation and regional competitiveness. An analysis of international trade figures for 2007, as measured through exports and imports (see SACN *et al.*, 2009, p. 17, Annexure C), highlights that more than 70% of all national exports and 90% of all national imports were recorded in the metropolitan municipalities (van Huyssteen *et al.*, 2009b).

Increased spatial concentration and agglomeration are also evident when considering the dominance of the four South African metropolitan regions in relation to other cities and towns in terms of economic activity, diversity and accessibility to economic and government service functions, as illustrated by the significantly higher ranking in terms of the Urban Functional Index⁶ in figure 3.

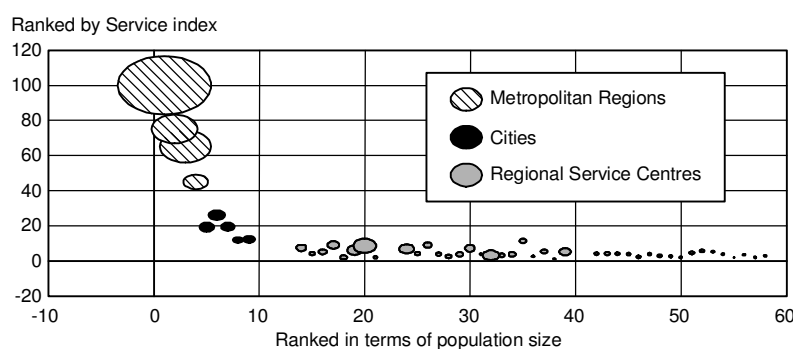


Fig. 3. Comparative analysis of cities and major towns in South Africa according to economy, population and service index

Source: adapted from van Huyssteen *et al.* (2009a, p. 208)

These agglomeration and concentration effects of metropolitan regions, cities and towns, are also clearly visible in the accessibility patterns indicated in figure 4.

⁶ Official index used by Stats SA to calculate the amount and order of government and economic services in a particular area, and in relation to other areas.

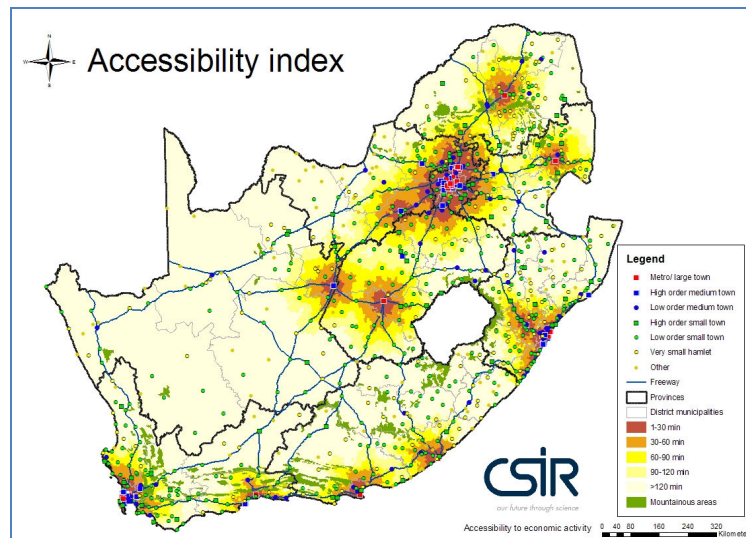


Fig. 4. Accessibility to major nodes across South Africa

The other side of the agglomeration and growth coin, unfortunately is that while more than 60% of households in the four metropolitan municipalities have access to formal housing (compared to the national figure of 57.7%), the largest concentrations of informal housing (24.1% against the national average of 18.3%) are also found in these areas (SACN *et al.*, 2009, Annexure D, F). In the same vein, service delivery trends between 1996 and 2007 clearly illustrates metropolitan areas as exhibiting not only the highest percentages of access to municipal services nationally, but also some of the biggest service delivery pressures and backlogs in terms of numbers of people without access to such services (SACN *et al.*, 2009, Annexure D).

At the same time, the large and constantly expanding populations in these areas contribute towards metropolitan regions becoming ever bigger consumers of resources, with the Water Management Areas in which the three biggest metropolitan regions are located, already facing severe crises in terms of access to water. This crisis is expected to escalate.

3.2. Inequalities and Divergence in Living Standards

The four metropolitan regions in South Africa are home to 24% of all people in South Africa living under the Minimum Living Level,⁷ 34% of all people in South Africa in the low-income categories and 68% of all people in the high-

⁷ Measure of the minimum monthly income needed to sustain a household, based on the Bureau of Market Research's Minimum Living Level as utilised in the NSDP (The Presidency, 2007).

income categories in the country (SACN *et al.*, 2009, p. 13). These stark inequalities and high levels of divergence in living standards in the South African society often also manifest spatially, a result of the colonial and apartheid history.

Some indication of these spatial disparities in South African metropolitan regions is provided in this article by making use of findings from a more detailed analysis conducted for the broader Gauteng Metropolitan Region.⁸ The latter proves to be a region of concentration, division and differences, with no less than 86.5% of economic activity in 2004 (which was 39% of the national figure) produced on only 8.4% of the provincial land area (see figure 5), by and large concentrated in the central areas of the province (GDED, 2007, p. 15).

Approximately 60% of all the households in Gauteng and 81% of those households that lived in poverty (calculated as living below the Minimum Living Level) in 2004, were located in 30 poverty concentrations (GDED, 2007, p. 36), as illustrated on figure 5. These poverty concentrations are mostly located in the outlying or peripheral areas of the province, and are characterised by low physical accessibility to employment and services, low levels of education, and a lack of private sector investment, other than for a few isolated shopping mall developments.

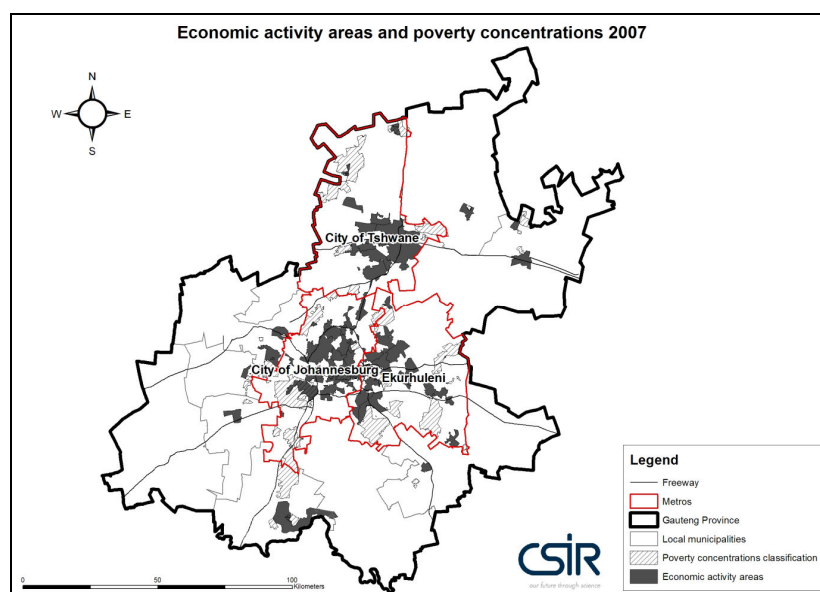


Fig. 5. Concentration of poverty and economic activity in the Gauteng City Region
Source: adapted from data in GDED (2007, p. 50) and CSIR (2006)

⁸ A slightly different set of boundaries was used for the Gauteng City Region in the study, which was conducted for the Gauteng Spatial Development Perspective during 2007.

Whilst metropolitan regions areas are home to the biggest and most highly skilled portion of the formal and informal labour market (according to 2007 Stats SA data), they are also home to the largest number of those that are unskilled, economically inactive and, most probably, also those in search of livelihood opportunities. Stark inequalities exists in terms of employment and skills levels, with high average unemployment figures of 21.9% using the ‘narrow’ definition⁹ and 31.3% using the ‘expanded’ definition for the metropolitan areas. A more detailed analysis of the internal spatial inequalities in the Gauteng Metropolitan Region clearly illustrated how employment and economic activity are spatially concentrated in the central areas of the region, whilst unemployment is spatially concentrated in the ‘poverty concentrations’ (see figure 5). These figures and patterns do not only point to severe societal inequalities and an increase in dependency burdens (even further enhanced by evidence of increasing numbers of youth) within the metropolitan regions, but also to harsh differences in living standards across the metropolitan landscapes.

Together with the pressures of increased concentration, the challenges of intra-metropolitan inequalities, strongly embedded within the spatial structure, place serious demands on governance systems and institutions.

4. IMPLICATIONS OF THE ROLE AND RESILIENCE OF SOUTH AFRICAN METROPOLITAN REGIONS WITHIN NATIONAL AND REGIONAL DEVELOPMENT CONTEXT

As illustrated in this paper, South Africa’s metropolitan regions are national assets as they in many respects provide livelihood opportunities that form the core of the national economy, tax base and labour market. However, continued population and economic concentration and agglomeration effects in these metropolitan regions seem, on the one hand, to magnify the large disparities between metropolitan and more rural areas within the countries. On the other hand, as illustrated in the analysis, these concentrations and internal divergence, also pose many threats to the resilience of metropolitan regions, for example in terms of strains on infrastructure, rising costs associated with congestion and

⁹ South Africa’s official (narrow) definition of unemployment classifies individuals as being unemployed if they: ‘(a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within a week of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview’ (Stats SA, 2002, p. xv). The definition places the ‘burden of proof’ on the shoulders of non-employed individuals: they need to demonstrate that they have made some attempt at finding or creating a job for themselves.

sprawl, as well as increasing demands for basic services such as housing, education, access to water and electricity and associated ecosystem services (water and energy).

It might be worthwhile to further explore the dualistic and dynamic challenges and threats facing metropolitan regions and more specifically the implications thereof for resilience of these areas and regional and national development. As is evident from recent studies and events, these challenges and threats in the South African case, closely relate to the four intersecting systems of urban resilience as identified in the Resilience Alliance (2007), namely infrastructure and the built environment, economic and resource flows, governance and social cohesion and stability.

With regards to infrastructure and the built environment, challenges relate to accessibility of economic opportunities and services for often far outlying poverty pockets, as well as to providing access to services for an increasing population. Metropolitan areas are facing increased levels of congestion (that need to be addressed in order to sustain the levels of economic growth and realise the attendant benefits of this for regional and national economies), as well as resultant challenges related to i.e. sustainability, carbon emissions and energy use.

The increased squeeze on intersecting systems of economic and environmental resource flows is also clearly evident. Continued population and economic growth and resultant demands on water, land and energy go hand in hand with huge housing, land and service delivery backlogs. This situation is exacerbated in informal areas where people often live on geologically unsuitable land and in shacks or temporary structures without clean water and sanitation, with ensuing low levels of environmental health. Considered alongside the pressure on ecosystem services, especially water and energy, the possible impact of peak oil prices, huge commuting dependencies and rising carbon emissions, these challenges necessitate effective guidance and fiscal incentives by government to support sustainable practices, alternative technologies and effective management of natural capital and resources (SACN *et al.*, 2009, p. 49; Turok and Parnell, 2009, p. 95).

In spite of increased social, political and cultural interaction (Turok and Parnell, 2009, p. 5), the high and increasing numbers of people living in poverty, coupled with the ongoing spatial concentration of poverty within densely settled and increasingly vulnerable areas, pose a serious threat to social cohesion in South African metropolitan regions. These stark differences and social exclusion, magnified by influx of immigrants, is also regarded the key reason for a growing spate of service delivery protests and xenophobic outbursts in recent years in South Africa (Centre for Development Support, undated; Powell, 2009, p. 12; Pieterse, 2008) – phenomena that place a high premium on social stability amidst the melting point of socio-economic dynamics in South African metropolitan regions.

Given the significance of the metropolitan areas and the complexity of the challenges they are facing, it is vital that their governance networks and capacity remains efficient, effective and sustainable and they fulfil somewhat contradictory roles of addressing social problems and making local economic development less exclusionary, whilst also keeping their cities globally competitive (see Parnell, 2008; Merrifield *et al.*, 2008; Beall, 2002; van Huyssteen *et al.*, 2009). Metropolitan regions arguably provide the economies of scale required for cost effective investment of public resources (Turok and Parnell, 2009, p. 4), as well as for the maintenance and replacement of essential infrastructure. However, large multi-nodal metropolitan regions, particularly the Gauteng region within South Africa, with growing demands, are faced with enormous challenges in terms of financial viability, urban management and governance (COGTA, 2009, p. 4) and require institutional structures that can support multi-level and much more collaborative governance (UN Habitat, 2009; and SACN *et al.*, 2009, p. 50).

5. CONSIDERATIONS FOR COLLABORATIVE RESEARCH AND KNOWLEDGE-PRODUCTION

Considering the key role of metropolitan regions within national and regional development in South Africa, it is vital for the entire country to recognise that these are threats to urban resilience that could potentially impact on the manner in which the entire urban socio-ecological system functions, with far-reaching regional and national impacts. This is clearly not an easy matter to address.

Given the increasing challenges in terms of the resilience and sustainability of metropolitan regions, and the pressures on metropolitan governance and financial viability, it becomes increasingly important to provide an explicit national perspective on the role of urban areas. This same perspective should also make bold statements about the challenges brought about by urbanisation¹⁰ and include context-specific regional development policies and procedures to strengthen intergovernmental support (also see UN Habitat, 2009; Turok and Parnell, 2009; SACN, *et al.*, 2009; van Huyssteen *et al.*, 2009b).

However, given the existence of many other countries with similar urban and governance structures and possible shared challenges to the resilience of urban and regional systems, there can be significant mutual value in greater collaboration in research and knowledge-production and sharing in the fields of metropolitan planning, development and governance. A picture of possibly shared challenges and prospects can for example be found between South African

¹⁰ Recently highlighted by the UN Habitat (2009, p. xxvii) as critical in order for urban planning systems to be successfully developed.

metropolitan regions and some of those in Central European countries, as for example exhibited by the Warsaw and even Cracov metropolitan regions in Poland (see Marszał, 2008; Slavik *et al.*, 2005). Here, similar to the South African situation the metropolitan region was home to an estimated 2.8 million of the Polish population of 38.5 million in 2009, and in 2006, contributed more than a fifth (21.6%) to Poland's national GDP¹¹ (PMR Business Services for Global Decision Makers, 2009). Given the way in which growth of GDP *per capita* in the metropolitan region seemed to outstrip the national average by 263% in 2005 (OECD, 2008a), and with evidence of the area consistently attracting the highest 'Greenfield Foreign Direct Investment' in Poland, as well as the most promising youngsters from all over Poland (www.e-Warsaw.pl, accessed 3 November 2009), the familiar calls for balanced development in Poland (OECD, 2008a) are understandable. But, as in South Africa, the way in which such challenges, dualisms and dynamics could potentially threaten urban resilience, as well as future regional and national development, are equally worrying.

6. CONCLUSION

South Africa's four metropolitan regions are key nodes in the polycentric network of cities and towns and have experienced sustained levels of relatively high growth (economically and in terms of population numbers) over the last decade. They are not only the engine rooms of the economy, but they also display social dynamism and are the places where increasing numbers of poor people (increasingly also those in the youthful age groups) seek out employment, education and access to services. As such they are the gateway to the global economy and experience significant levels of international immigration. These trends towards spatial concentration, however, not only provide agglomeration benefits, but also pose threats to resilience of such regions and greater national systems. Disparities between metropolitan regions and the rest of the country, and even more so dualities and inequalities within metropolitan regions, become very stark with increased agglomeration. In addition to this, the four metropolitan regions face serious challenges on their resilience.

While this article dealt with South Africa's four metropolitan regions, it did raise the prospect of doing comparative analyses involving metropolitan areas in countries with similar socio-economical and political conditions. Places that were seen as offering fertile ground for such studies were identified as metro-

¹¹ Figure for the Mazowieckie Region, of which Warsaw is the major metropolitan area.

politan regions in the newly emerging States in Central and Eastern Europe, of which the Poland's Warsaw metropolitan region is a prime example. Areas that could be explored in such collaborative research could in turn include regional development policy, multi-level governance and transformative spatial planning.

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