



URBAN KNOWLEDGE EXCHANGE OF SOUTHERN AFRICA (uKESA)

The Role of Knowledge and Data Platforms in Monitoring and
Predicting Change: What difference do they make?

Towards measuring spatial transformation in SA Municipalities:
SALGA Spatial Transformation Barometer

22 JUNE 2023



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APPRECIATION

4

The opportunity created by CSIR to collaborate knowledge and exchange of information on research that support urban management and development in Southern Africa.

5

The invitation to share SALGA's thinking and current work on spatial transformation monitoring and measurements.

6

High level findings on the municipal research study to determine state of progress in transforming SA urban spaces and municipal efforts undertaken to address past spatial imbalances

MAIN OBJECTIVES OF THE SALGA SPATIAL TRANSFORMATION BAROMETER PROGRAMME



- To understand the current state of spatial transformation in municipalities, provinces and the country as a whole;
- To provide an understanding of the known change factors, such as population growth and environmental factors and others
- To highlight some of the constraining factors to spatial transformation in SA municipalities
- To establish a commonly accepted set of indicators that will be used in continuous monitoring and reporting on progress regarding municipal Spatial Transformation.



RATIONALE:

“SALGA SPATIAL TRANSFORMATION BAROMETER ”



- Research based planning and policy formulation
- Improve quality of planning data and intelligence
- Standardized set of indicators to monitor, measure and analyse spatial changes and transformation in our municipalities
- Enable systematic utilization of technology and data to effect spatial transformation and improved quality of planning
- Facilitate profiling and sharing of knowledge among municipalities and local governments
- Inform benchmarking and peer review mechanisms



ADDITIONAL GOALS FOR THE SALGA “STB”



SALGA SPATIAL TRANSFORMATION BAROMETER SEEK TO NOT ONLY MEASURE AND MONITOR PATTERNS AND TRENDS IN SPATIAL TRANSFORMATION IN MUNICIPALITIES, BUT ALSO TO DELIBERATELY PROVIDE:

- ✓ A **standardised mechanism** to (1) assess progress in realizing the goal of inclusive and integrated spatial transformation, and (2) identify gaps, problems, and constraints in this regard;
- ✓ A **database** to store and record real-time data with which to model predictions on the prospects of such change;
- ✓ A **tool** to enable **periodic monitoring and publication of progress** with spatial transformation actions and outcomes;
- ✓ A **vehicle for strategic intergovernmental engagement and continuous dialogue** on key planning interventions and policy issues impacting on the (1) actioning, and (2) realisation of spatial transformation imperatives;
- ✓ A **suite of ingredients for the establishment of a database** of measurable planning data and information to (1) disseminate, and (2) support municipal planning, plans and programmes aimed at ensuring effective spatial development and integration;
- ✓ An **instrument** with which to produce **evidence-based solutions** to spatial transformation challenges in the municipal domain; and
- ✓ A **vehicle for peer-learning and engagement** between and across municipalities on spatial transformation actions and outcomes.



FACTORS NECESSARY TO EFFECT SPATIAL TRANSFORMATION

To transform the inherited Apartheid Spatial Form, SA will require not only the legislative reforms, but also practical mechanisms/tools to

- (1) define progress,
- (2) measure and assess impact, and
- (3) hold government institutions and organisations 'on their toes' and accountable. As such, there is a need to:
 - Continuously evaluate and monitor the impact of spatial interventions geared towards spatial transformation;
 - Understand and unpack the current status quo – both in terms of constraints and opportunities;
 - Explore sought-after spatial outcomes, guided and informed by SPLUMA; and
 - Develop indicators that can be used to benchmark, compare and monitor spatial transformation in all municipalities – metropolitan, district and local

DEFINING SPATIAL TRANSFORMATION

RESTORATIVE

1998 White Paper:

“Apartheid has fundamentally damaged the spatial, social and economic environments in which people live, work, raise families, and seek to fulfil their aspirations. Local government has a critical role to play in rebuilding local communities and environments, as the basis for a democratic, integrated, prosperous and truly non-racial society.”

JUSTICE & EQUITY

SPLUMA:

“(a)The principle of spatial justice whereby injustices of the past must be redressed; (b) spatial sustainability; (c) efficiency; (d) spatial resilience and (e) good administration.”

SALGA Definition

Spatial transformation entails the overhaul of an inherited segregated spatial dispensation and preventing it from re-establishing itself in new forms of post- apartheid class and income-based spatial segregation and spatial inequality.”

PROXIMITY AND ACCESS

Ease of access to employment opportunities, social amenities and the like.

This has a spatial element – short distances allow for easy access, but also a time element – some distances are easily traversed, through for example access roads and transport, whilst others can impose severe financial and time costs where roads are in bad condition, or public transport is not available.

SERVICE DELIVERY (eg HOUSING AND BASIC SERVICES)

Provision of reliable quality housing and basic services (electricity, water, sanitation and refuse removal).

These are a vital factor impacting on the health, social welfare and economic development of a residential community.

INTEGRATION AND INEQUALITY

Apartheid specifically and purposely divided people on the basis of their race.

Therefore, an important measure of spatial transformation is to assess the extent to which this has changed. It is also necessary to assess transformation through levels of integration along class and educational attainment lines.

SALGA SPATIAL TRANSFORMATION BAROMETER

SAFETY AND AMENITY THE QUALITY AND SAFETY OF LIVING ENVIRONMENTS CAN BE REMARKABLY DIFFERENT

This is particularly concerning for lower income households where residential structures may not be sufficiently robust to stand up to rain or flooding.

Under apartheid, residential neighbourhoods for black people were purposely neglected, and many of these neighbourhoods do not have recreational areas or other amenities.

AGENCY AND GOVERNANCE

the ability of individuals and households to participate in planning, operational and other issues through meaningful participatory processes

In addition, the way in which an area is governed can have a profound impact on its liveability.



DATE SOURCES FOR THE SSTB



In accordance with the approach and focus on both the qualitative ('not-so-spatial') and quantitative dimensions of spatial transformation, the following data-sources were used in the study:



Municipal documentation

including Integrated Development Plans (IDPs), municipal and regional Spatial Development Frameworks (SDFs), Local Economic Development (LED) strategies and plans, Housing Plans, Built Environment Performance Plans (BEPPs), District Development Model (DDM) 'One Plans', Annual Performance Reports, municipal budgets and bylaws.



Stats-SA data, newspaper articles and published and unpublished research reports

with a focus on population figures, service provision, settlement development, employment, and economic indicators.



Engagements with municipal officials

including Municipal Managers and officials tasked with spatial planning, land-use management, integrated development planning, local economic development and engineering services.



Geospatial data

including time-series data on housing development, land-use, land-cover and housing projects.

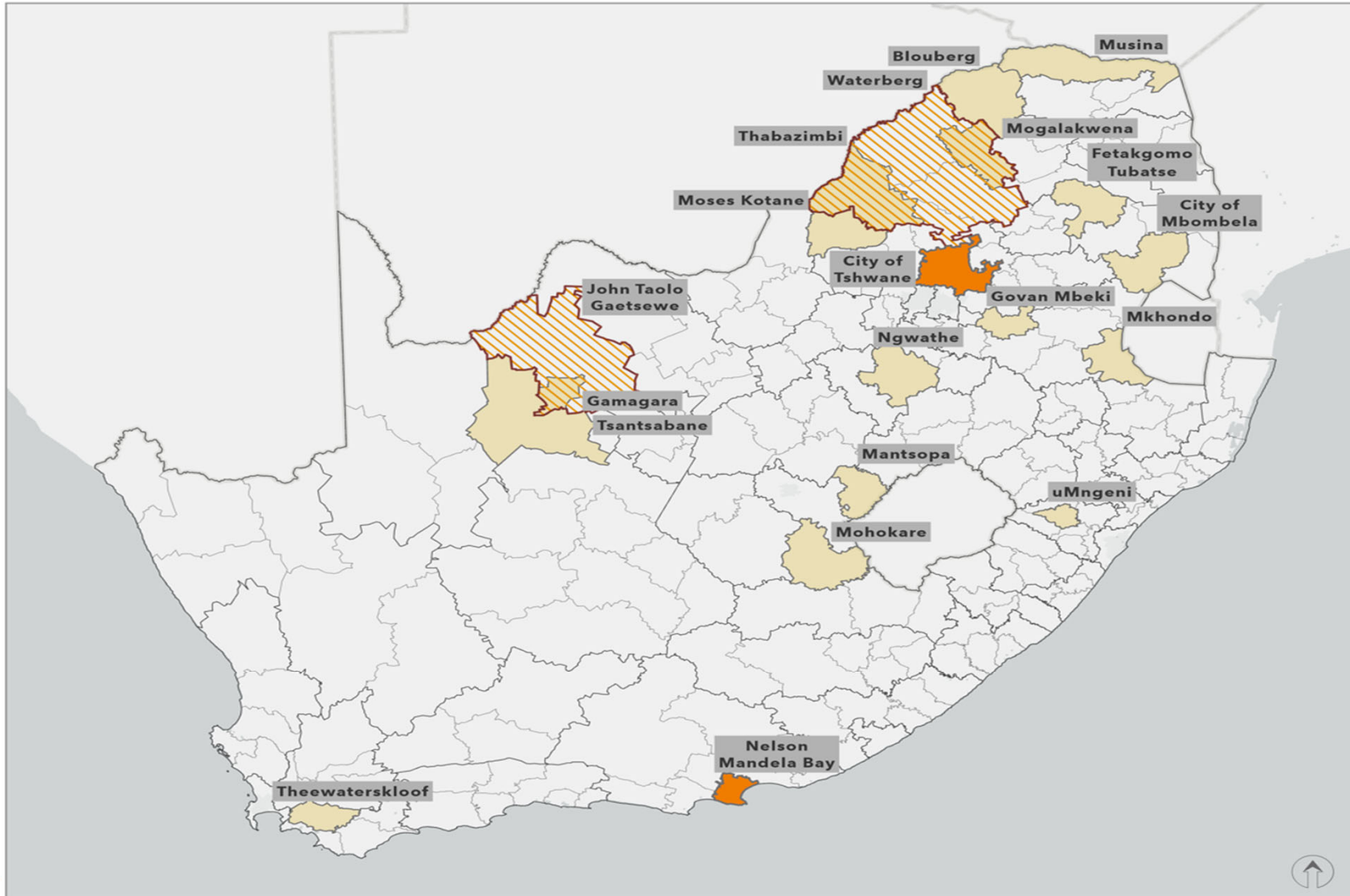
**Cities are always developed and transformed through the interaction between different social, political, economical, and technological forces.
(Khan & Nilufan: 1992)**



SALGA WORKING WITH EUP PILOTED 20 MUNICIPALITIES ON SPATIAL TRANSFORMATION MONITORING



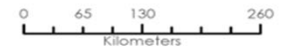
Spatial Transformation Barometer: Study Areas



Legend

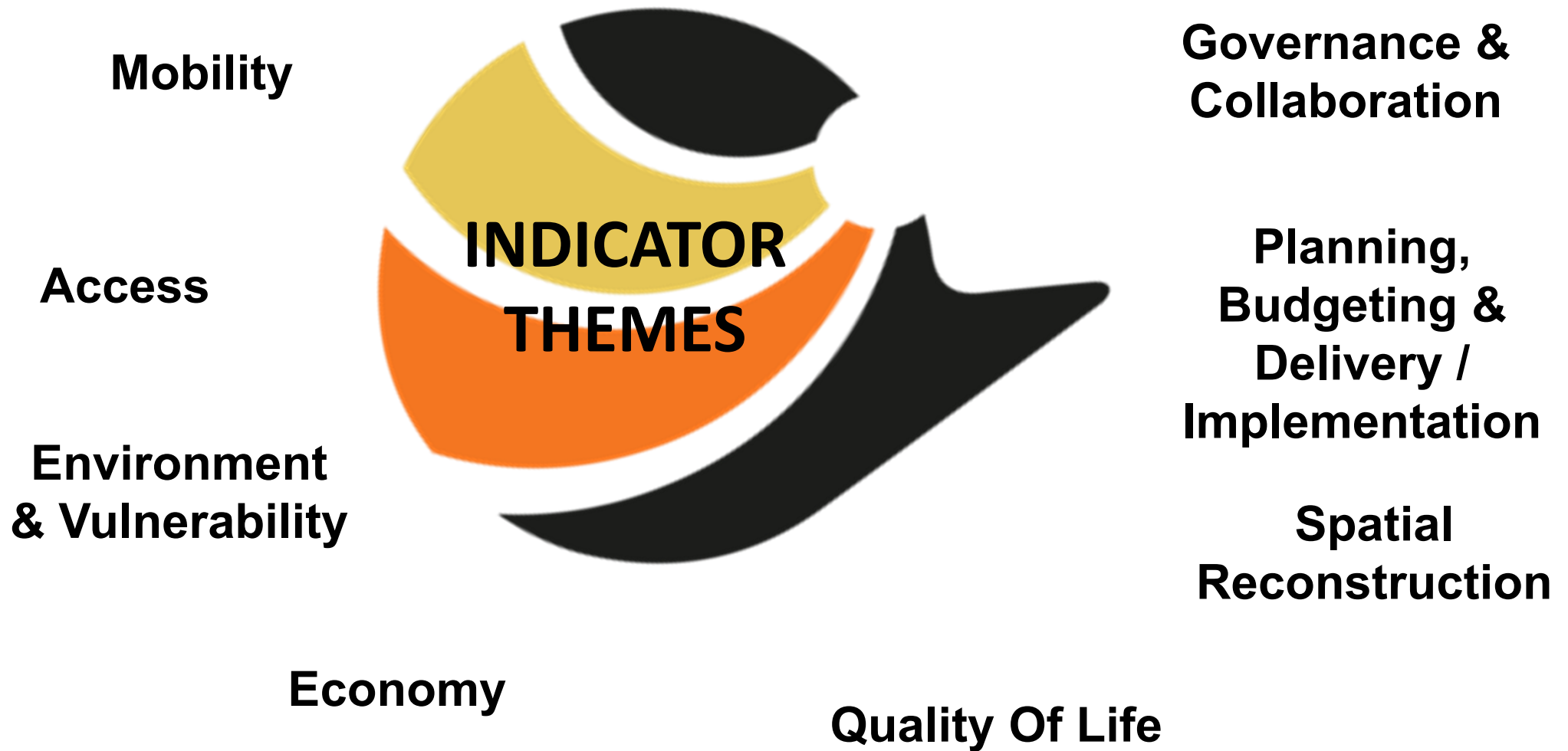
- LocalMunicipalities2018_Final alb
- Metropolitan Municipality
- District Council
- Local Municipality

Sources:
 EUP 2023
 SALGA 2023



Coordinate System:
 South Africa Albers Equal Area Conic
 Date created:
 Wednesday, 31 May 2023
 Author: willem@mandalagis.co.za

KEY INDICATORS USED ON 20 SELECTED MUNICIPALITIES



Mobility

Access

**Environment
& Vulnerability**

Economy

Quality Of Life

**Governance &
Collaboration**

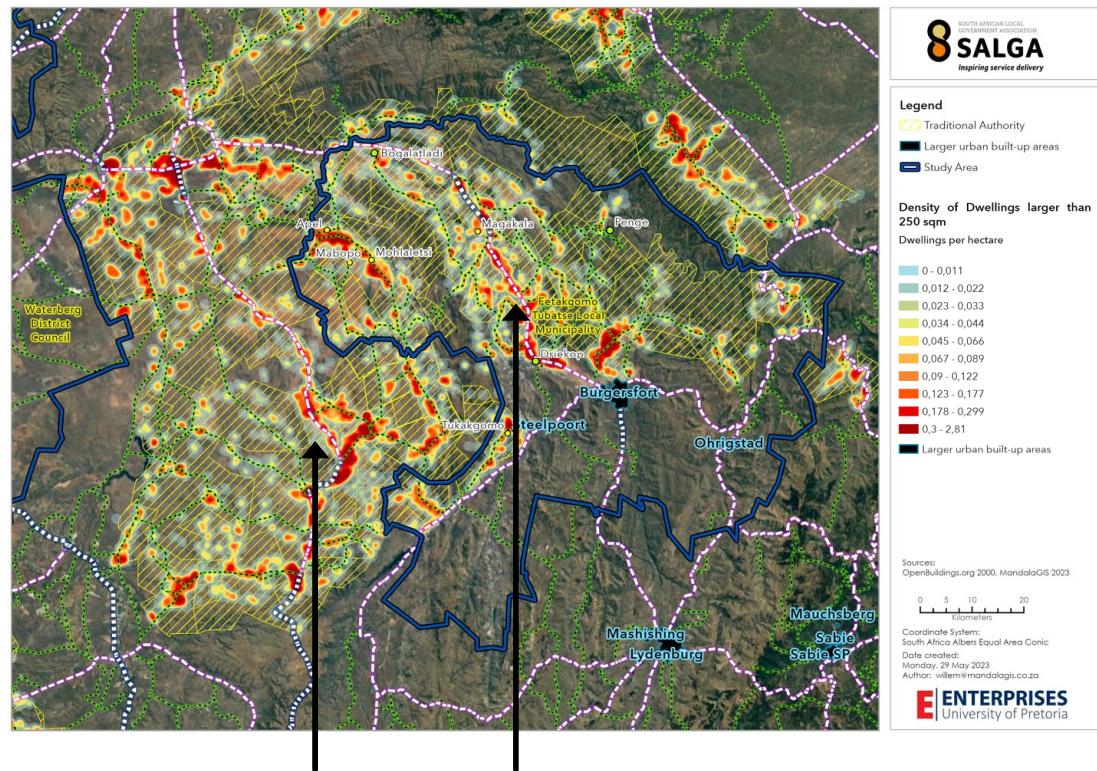
**Planning,
Budgeting &
Delivery /
Implementation**

**Spatial
Reconstruction**

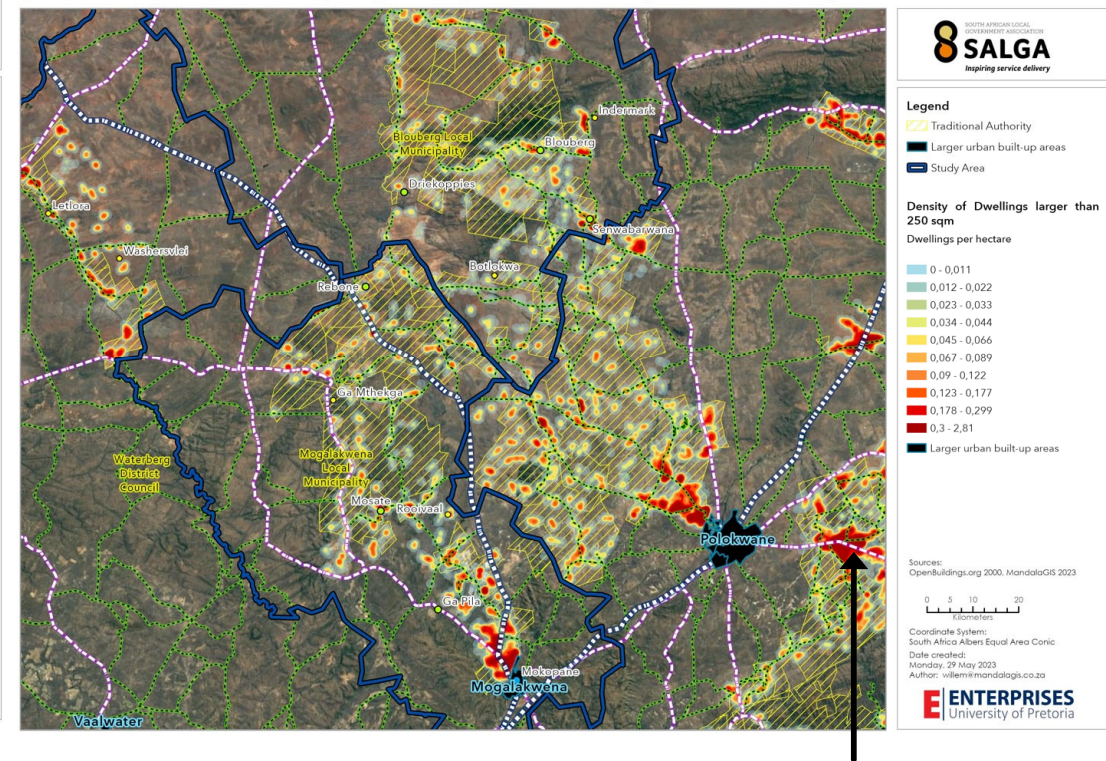


1. PENT-UP HUNGER FOR LAND, RESPONSES AND CONSEQUENCES (CONTINUED)

Spatial Transformation Barometer: Density of large dwellings in Traditional Authority and Rural Areas - Fetakgomo Tubatse LM



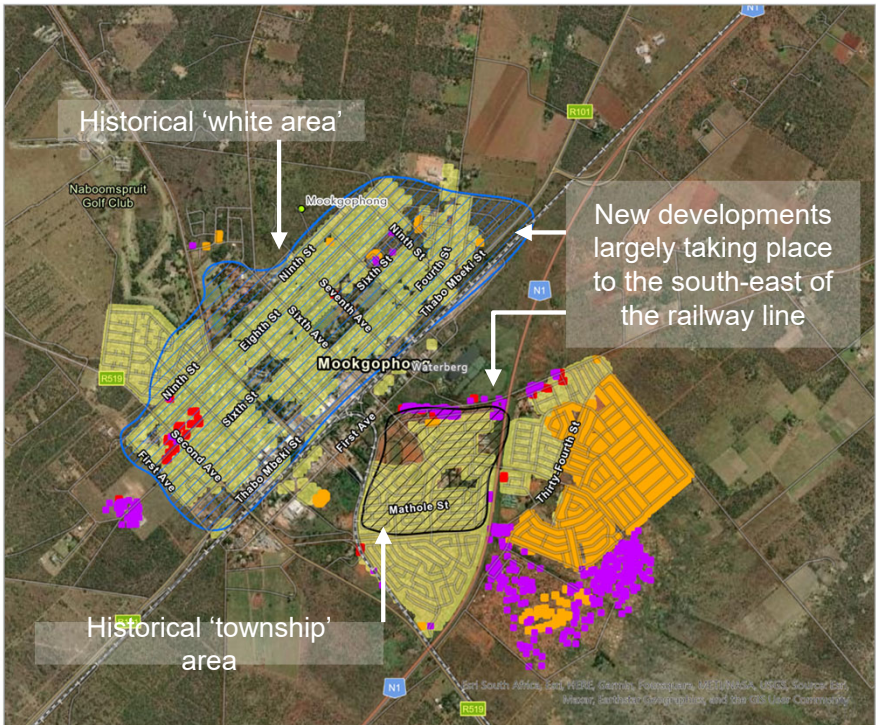
Spatial Transformation Barometer: Density of large dwellings in Traditional Authority and Rural Areas - Mogalakwena LM



Clear higher density of dwellings larger than 250m² on Traditional Authority land, generally along the main road systems.

2. PERSISTENCE OF COLONIAL AND APARTHEID SETTLEMENT PATTERNS AND FORMS (CONTINUED)

Spatial Transformation Barometer: **Mookgophong**



SALGA
Inspiring service delivery

Legend

Residential Footprint 1996

- Non-white Townships
- White Areas

Landuse Change

- Residential 2020
- Residential 2013
- Residential 2000
- Residential 1990

Railway

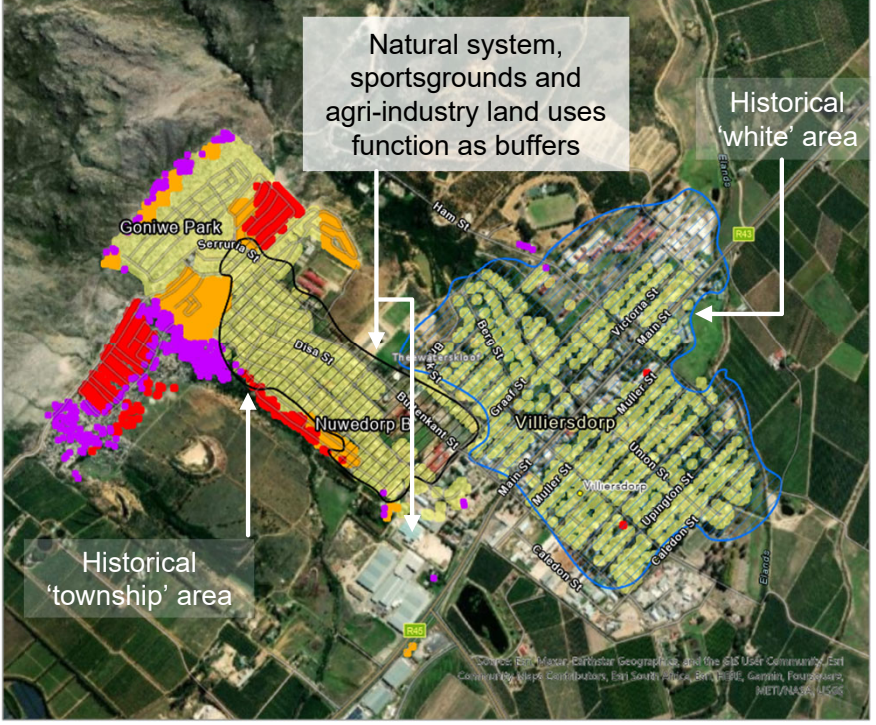
Sources:
 National Land Cover 1990, 2000, 2013, 2020
 Open Buildings Dataset - W. Srik, S. Kothubin,
 M. Ritter, A. Anirak, Y.S.E. Bouchareb, Y. Dauphin,
 D. Keyser, M. Neumann, M. Clise, J.A. Quinn,
 Continental-scale building detection from high
 resolution satellite imagery, arXiv:2107.12283, 2021.

0 0.23 0.45 0.9
kilometers

Coordinate System:
 South Africa Albers Equal Area Conic
 Date created:
 Thursday, 01 June 2023
 Author: willem@mandalogs.co.za

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Spatial Transformation Barometer: **Villiersdorp**



SALGA
Inspiring service delivery

Legend

Residential Footprint 1996

- Non-white Townships
- White Areas

Landuse Change

- Residential 2020
- Residential 2013
- Residential 2000
- Residential 1990

Sources:
 National Land Cover 1990, 2000, 2013, 2020
 Open Buildings Dataset - W. Srik, S. Kothubin,
 M. Ritter, A. Anirak, Y.S.E. Bouchareb, Y. Dauphin,
 D. Keyser, M. Neumann, M. Clise, J.A. Quinn,
 Continental-scale building detection from high
 resolution satellite imagery, arXiv:2107.12283, 2021.

0 0.1 0.2 0.4
kilometers

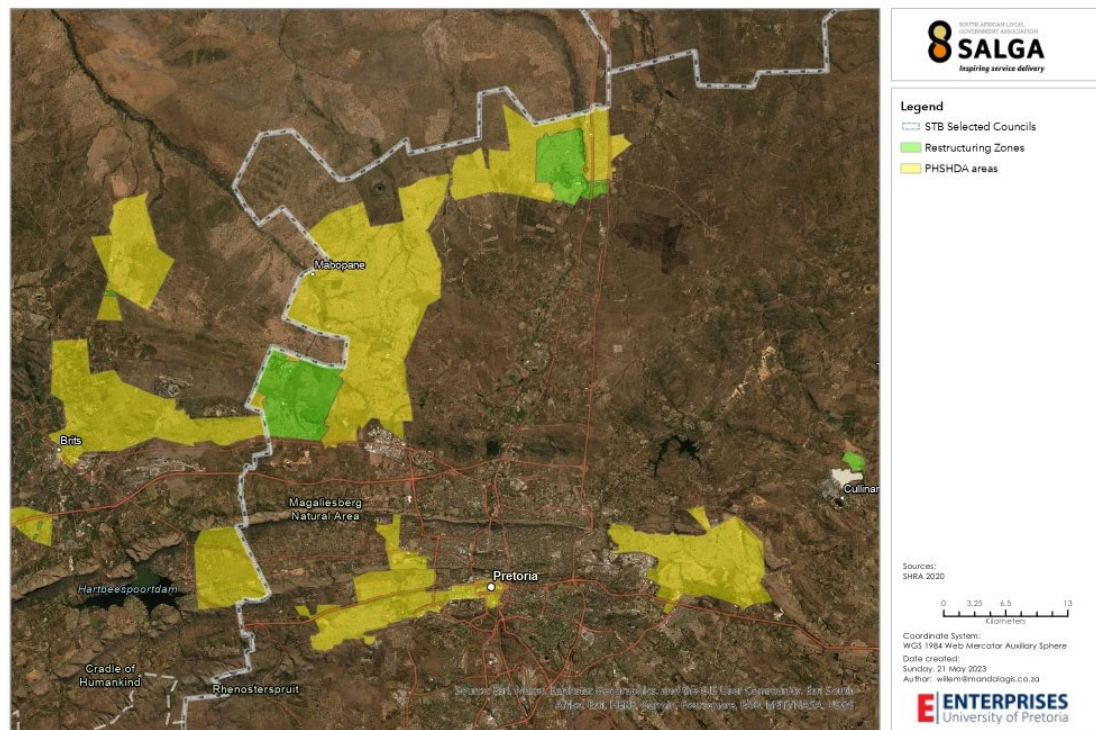
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 Date created:
 Tuesday, 30 May 2023
 Author: willem@mandalogs.co.za

ENTERPRISES
University of Pretoria

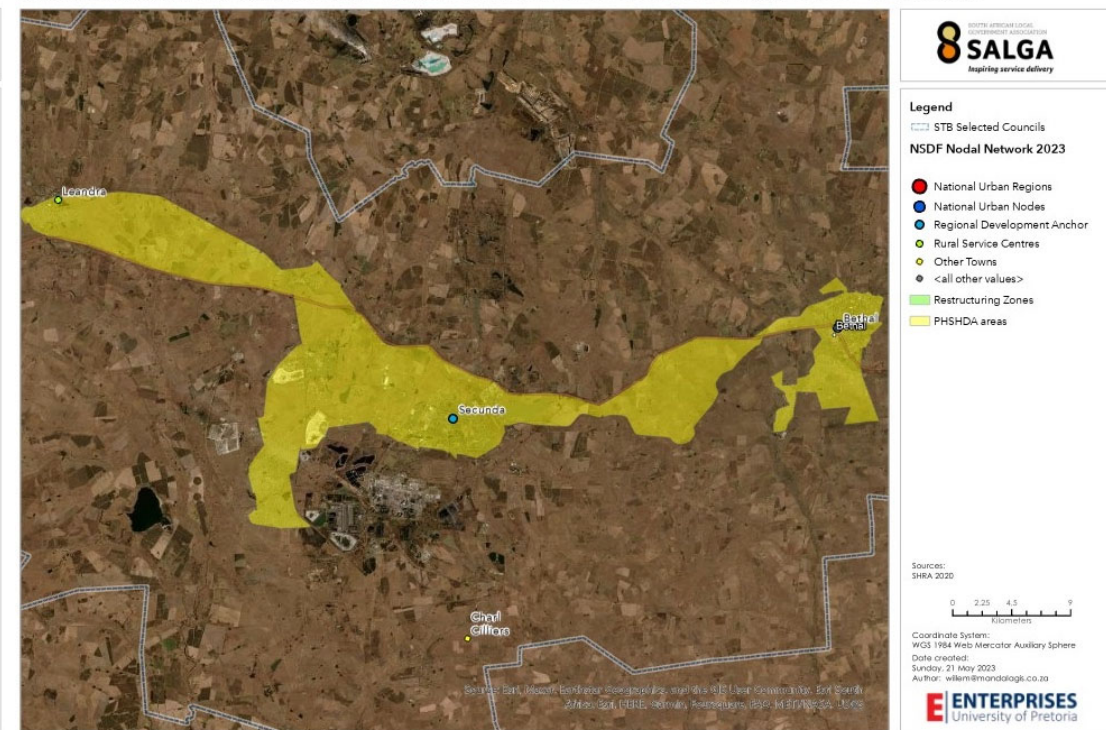
Natural and human-made buffers posing serious challenges to the integration of settlements.

3. FAR TOO LITTLE IMPROVEMENT IN THE QUALITY OF TOWNSHIP AND INFORMAL SETTLEMENT LIFE (CONTINUED)

Spatial Transformation Barometer: PSHDA Areas and Restructuring Zones - City of Tshwane




Spatial Transformation Barometer: PSHDA Areas and Restructuring Zones - Secunda



The large zonal size/‘spatial footprint’ of PSHDAs and Restructuring Zones vis-à-vis the often relatively small number of units allocated within them, meant that housing was not always provided at the more localised/ precinct level in the areas that the municipalities would like them to be.


4. LIMITED POSITIVE ECONOMIC TRANSITION / CHANGE IN TOWNSHIPS


ECONOMIC CHANGE IN TOWNSHIPS

- 
- In most of the municipalities, officials observed that:
1. They did not see the economic conditions of **township residents** as having experienced significant change since 1994; and
 2. **Township economies** have shown very little change in terms of growth/expansion, or a diversification of opportunities.

- 
- The only significant changes that were highlighted with regards to townships economies were:
1. The **rental market**, primarily in the form of backyard shack development;
 2. **Mall** developments; and
 3. The introduction of **foreign-owned spaza shops and small supermarkets**.

LIMITATIONS TO ECONOMIC CHANGE

- 
- The main contributors to job losses and economic despair were flagged as:
- The COVID-19 pandemic; and
 - Load-shedding

- 
- Investors, whether from the townships or elsewhere, by and large still opt for development in the ‘former white town’, which limits the establishment and expansion of businesses in townships. Officials highlighted the following as contributing to this historical spatial development trend:
- A scarcity of large enough plots/erven in townships; and
 - The lack of adequate and reliable water and electrical services in townships to service non-residential activities/developments.

5. HIGH LEVELS OF VULNERABILITY TO CRIME AND ENVIRONMENTAL AND ECONOMIC SHOCKS

Municipalities generally do not do well in assisting vulnerable groups, with communities living in townships and villages, and especially the ones furthest away from the 'main town', suffering from the highest levels of vulnerability to environmental and economic stresses:



Crime: Which is a major concern in municipalities and has become ever more prevalent as the economy has entered a difficult period, is especially detrimental to already vulnerable communities. This, it emerged in the engagements, was particularly prevalent in municipalities bordering on neighbouring countries where cross-border crime has become a huge problem.



Disasters: While officials noted that municipalities are mindful of the disasters their areas are prone to, and plans have been prepared to mitigate these, they also raised concerns as to their ability to implement them, given funding constraints from provinces and national government, particularly in cases of drought. A lack of Disaster Management Units, vehicles, equipment and staff were also mentioned as huge challenges in giving effect to the principle of 'spatial justice' insofar as attending to disasters in township areas and far-off, rural settlements was concerned.



Disability: With regards to persons with disabilities and the pursuit of 'universal access' in spatial planning and design, officials expressed an appreciation for the need of it, but highlighted that it was a difficult issue for them to pursue given the huge needs and backlogs confronting their municipalities. In several cases, it was indicated that 'persons with disabilities' fell under 'Special Programmes of the Mayor' and were, given the 'silo-nature of work in municipalities', not sufficiently dealt with in spatial planning.

6. PERSISTING CHALLENGES WITH ACCESS AND MOBILITY IN TOWNSHIPS AND INFORMAL AREA-RESIDENTS

Challenges with Transport:



- The **spatial legacy of colonialism and Apartheid** makes transport of **key importance** in connecting residents of townships and informal areas to opportunities in town/the suburbs.
- **Public transport** is a key contributor towards **realising several societal goals**, such as employment, education, improved environmental conditions and accessibility. Despite the dire need for it, it is a **major shortcoming**, and most townships are **still badly served by public transport**. Many rural municipalities only have **long-distance, but not internal taxi services**.
- **Roads are also a major concern** for both public and private transport, with very few township roads being tarred or paved, rendering them of **little to no use during and after heavy rains**. The weak state of the road network in most municipalities also **threatens economies and livelihoods**

7. INADEQUATE FOCUS ON SPATIAL TRANSFORMATION AS PRIORITY / FOCUS AREA

While spatial transformation (1) as a rule is mentioned in municipal policy documents (IDPs and SDFs), (2) municipalities follow the legal requirements, policy prescripts and strategic guidance offered in national and provincial SDFs with regards to spatial transformation in their plans, and (3) municipal officials viewed it as very important, it is in most cases not prioritised or actively driven by municipalities.

Need and Available Resources



- It was highlighted that it is **not necessarily a case of it not being seen as important**, but rather that it **‘lost out’ to a myriad of other more important, more pressing matters** that communities demanded attention to, and councillors had promised to attend to, notably in the area of municipal service provision and jobs.
- Reference was also made to the fact that **funding for spatial transformation, and all that it entailed from housing to bulk infrastructure, was an issue**, and given the high costs associated with it, **in relation to the huge needs for the provision, upgrading and maintenance of basic services where people currently lived** – even if this was not necessarily in an ideal location – it was **not pursued**.
- On the issue of **making municipal land available in support of spatial transformation**, municipal officials pointed out that the Municipal Finance Management Act, Act No 56 of 2003 (MFMA) rules this out. It does, however, not prevent making municipal land **available for ‘use’**, which **some municipalities are doing**.

7. INADEQUATE FOCUS ON SPATIAL TRANSFORMATION AS PRIORITY / FOCUS AREA (CONTINUED)

Spatial Development Frameworks:



- SDFs **play**, according to several municipal officials, a ‘**passive painting-by-numbers role**’, **waiting for investment** and spending by others to fill-in/complete the spatial puzzle. Officials, it was observed, as a rule, ‘**follow the instructions in their SDFs**’ and make recommendations on land development applications to Municipal Planning Tribunals (MPTs) based on these planning instruments.
- As for the use of **SDFs in playing a more proactive, driving role**, of actively chasing investment and then allocating it in planned, desired spaces, **very little evidence** was found. (In a study of eight South African cities, Du Plessis (2019) observed that SDFs had only limited impact relative to their intended objectives. He also listed several deficiencies in SDFs, amongst others the absence of proper linkages to the municipalities’ Capital Investment Frameworks and their IDPs.)



An Absence of Focused Municipal Programmes on Spatial Transformation:

- Dedicated municipal programmes or specially funded spatial transformation-strategies, projects or programmes were **far and few between**.

8. LACK OF KNOWLEDGE AS TO THE MEANING/DEFINITION OF THE CONSTRUCT OF 'SPATIAL TRANSFORMATION' & HOW IT IS TO BE ACCOMPLISHED IN PRACTICE

Several Questions arose in the Interviews about the Meaning/Definition of 'Spatial Transformation', i.e.:

- **What exactly** do you/we understand 'spatial transformation' to **be/mean/entail**?
- What does the abstract term 'spatial transformation' **mean in practice**?
- Is spatial transformation **only about fixing the colonial and Apartheid past**?
- Is spatial transformation about '**creating a better future**' in which settlements are more compact, housing for all income groups are provided, land-uses are mixed, pedestrian and bicycle ways are built, public transport is the norm, etc.?
- Is spatial transformation **only about urban areas**, and if so, **what about the vast tracts of rural settlements that many municipalities have**?
- Following on from it, it was in some cases also asked **how spatial transformation was perceived to be brought about by municipalities**, especially so given their **limited power and means** (in terms of both funding/financial resources and human capacity).

9. STATUS AND SHORTAGES OF PROFESSIONAL PLANNERS AND GIS PROFESSIONALS, HUGE WORKLOADS & A LACK OF 'COMPLETE GIS-SYSTEMS'

Lack of Qualified Professionals:



- While the interviews suggested that there is a **general recognition in municipalities of the importance of qualified and registered professional planners and Geospatial/GIS professionals** for (1) municipal planning, (2) prioritisation, (3) budgeting, and (4) infrastructure provision, upgrading and maintenance (and by implication also spatial transformation), and municipalities support and actively pursue professionalisation, **many municipalities do not have these officials in their employ.**
- In several cases, it was mentioned that **municipalities do not have 'senior, seasoned planners'**, and that **not much is done to attract such planners or develop planners** in the municipality into such experienced planners and **ensure that they get registered** with the South African Council for Planners (SACPLAN).
- Frequent references were made to the **positive impact** that (1) the **support provided by the Municipal Infrastructure Support Agent (MISA)** in many municipalities, and (2) the **drive by the Department of Cooperative Governance and Traditional Affairs for professionalisation** in the local government sphere have had. However, officials indicated that **the still far too limited number** of spatial planners, engineers and GIS professionals is of concern and is **impacting negatively** on municipalities' attempts at (1) conceptualising, (2) planning for, (3) popularising, and (4) undertaking spatial transformation.
- **Aggravating** this situation, it was argued, is **the high turnover of planners**, which also leads to **'stop-start spatial transformation endeavours'**, and, coupled with the **already lower status** that spatial planning generally enjoys in municipalities, to spatial planning (and hence spatial transformation) **'not getting a foothold in the municipal prioritisation ladder'**. The **lack of information/knowledge management** in their municipalities, coupled **with the continuous loss of institutional memory**, also impeded the development of such a **core 'spatial transformation-thrust'** in the municipality **that could outlive the municipal terms of councillors.**

10. LACK OF FUNDS, COUPLED WITH DIRE ECONOMIC TIMES FOR PEOPLE AND PLACES

- In most of the engagements it was observed that **municipalities simply do not have the tax bases, income streams and hence the funds** to undertake all that is constitutionally mandated and legally required of them to do.
- Continuing along this line it was argued that, **irrespective of what they, their councillors or the communities in their municipalities thought or not about spatial transformation**, (1) the **national funding model** for municipalities, and (2) the **downturn** in the South African economy and the hard/difficult times people were finding themselves in, meant that **their municipalities just did not have the funds** to undertake anything that is **not of a ‘absolutely imperative/immediate nature’**, or **perceived not to be as such**, i.e. spatial transformation.
- Even though spatial transformation **could potentially play a major role in addressing the triple challenges of poverty, unemployment and inequality**, it is in most municipalities **not perceived and/or used as such**. The high levels of poverty and deprivation simply meant that, should there be any money, it will **be used on projects and programmes directed** at (1) **formalising** informal settlements and/or (2) **alleviating the hardship** people were experiencing through poverty alleviation and basic service provision.

The research yielded several **insights** and **lessons**, notably:

- ❑ The **hunger for land** is a major issue, and addressing it is of immediate national concern;
- ❑ Without (1) **strong and sustained political support** and (2) the **political will** to change the spatial patterns of the past, **decisive spatial transformation** that **will assist in addressing** many of the other spatial, access and economic challenges the country faces, **will remain elusive**;
- ❑ While SDFs are generally valued by planners as **useful and important tools**, unless they are given **the status that SPLUMA bestows on them in practice**, and are used **as envisaged** to (1) drive and (2) achieve spatial transformation, they **will not achieve these ideals**; and
- ❑ **Clarity is required** as to (1) what is **understood** under ‘**spatial transformation**’, (2) why it is **important**, (3) **how** it can be done, and (4) **what it could lead/contribute to** in terms of more equitable, resilient and sustainable future South African settlement forms.



Thank you!

Zanoxolo Futwa: TRP-SA

SALGA: Specialist Planning, Land & Rural Development

Email: zfutwa@salga.org.za



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