

Provocation Piece | April 2026

# The Role of a Shared Spatial Data Framework in South Africa's Planning System

South Africa's spatial planning system, through SPLUMA, is intended to align planning across national, provincial, and local government spheres. In practice, that alignment remains difficult to achieve.

Spatial Development Frameworks (SDFs) are often outdated, inconsistent, static, and difficult to access, with limited standardisation to support comparison or integration. Neighbouring municipalities and provinces frequently work with different assumptions, resulting in conflicting spatial visions and missed opportunities for wall-to-wall spatial planning. At a finer scale, data gaps on smaller settlements, inconsistent place names, and a limited understanding of how places function further constrain regional planning. Many plans also lack a clear narrative or strategic "golden thread," making it difficult to trace how analysis informs spatial priorities.

**The result is a fragmented system.** Plans are produced, but they are difficult to compare or align. Data exists, but it is uneven in quality and not easily accessible. Tools are emerging, but they do not yet form part of a coherent, connected system. Capacity varies widely across municipalities, shaping what is possible in practice.

At the same time, the spatial planning field is evolving. The City of Johannesburg has demonstrated what a live, integrated spatial data platform can look like. The Department of Agriculture, Land Reform and Rural Development (DALRRD) is advancing the National Spatial Data Observatory (NSDO) as a national spatial data backbone. The National Strategic Hub (NSH) is developing the Living Atlas of Places and Living SDF Portal.

The opportunity lies in connecting these efforts to enable alignment across the system.

## Where alignment breaks down in practice

Work undertaken by the National Strategic Hub to map SDFs across the country points to recurring issues that hinder alignment. SDFs vary significantly in quality, structure, and scope, and often reflect differing assumptions about growth, infrastructure, and spatial priorities across neighbouring municipalities, with limited visibility of how plans intersect.

Several persistent issues emerged from our analysis:

-  **Inconsistent structure and format**  
SDFs differ widely in organisation, level of detail, and how spatial proposals are represented, making alignment difficult.
-  **Variable data quality and depth**  
Some plans rely on limited data, while others draw on more comprehensive evidence.
-  **Conflicting assumptions**  
Population projections, infrastructure capacity, and development trajectories are not aligned, even within the same region.
-  **Weak representation of settlement systems**  
Smaller settlements, lower-order nodes, and functional economic areas are inconsistently defined.
-  **Inconsistent spatial referencing**  
Place names, boundaries, and spatial units are not standardised.

Alongside these structural issues, a more fundamental challenge emerges around **narrative and planning logic** - In many SDFs, the spatial strategy is presented as an end product, without clearly showing how it was derived. The connection between data, analysis, and spatial proposals is often not explicit.

It becomes difficult to understand:

- How different datasets and sector inputs were brought together
- How trade-offs were considered
- Why certain areas are prioritised over others

*This weakens the ability of SDFs to function as strategic instruments and makes alignment with other strategic documents (such as IDPs) and across jurisdictions more difficult.*

A further issue is institutional ownership and continuity. In many municipalities, SDFs are outsourced, which can limit how well their underlying logic is embedded. This affects how plans are interpreted, updated, and implemented over time.

Taken together, these issues point to a system where plans are not easily aligned, interrogated, or collectively used to guide development.

## The underlying constraint: a fragmented planning environment

These challenges point to deeper structural issues in how spatial data and analysis are produced and used. There is no shared spatial reference framework across government: place names, boundaries, and spatial units are inconsistently defined, and datasets are held by multiple custodians with limited interoperability. This makes it difficult to bring information together for planning.

The constraint extends beyond data to how analysis is undertaken. Socio-economic, infrastructure, environmental, and land use analyses are often produced separately and not integrated into a coherent understanding of place. As a result, the link between evidence and spatial priorities is not always clear.

Data gaps and access constraints compound this. Infrastructure data, for example, remains uneven, and where datasets do exist, they are often difficult to locate or use, limiting planners' ability to work iteratively and build a shared, evidence-based view of space.

**In practice, this affects how planning functions.** The result is a system where planning is difficult to align and sustain. When data is inconsistent or inaccessible, spatial analysis loses credibility. When plans cannot be easily compared or layered, coordination across municipalities becomes constrained.

The absence of a clear narrative within many SDFs reinforces this. Without a transparent link between evidence and spatial proposals, it becomes difficult to test assumptions, engage stakeholders, or adapt plans over time. Where plans are developed externally and not fully internalised, continuity between formulation and implementation is limited, affecting how consistently spatial priorities are applied.

## From diagnosis to direction: a common spatial reference framework

If the core issue is alignment, then the focus shifts to the conditions required to enable it.

### 1 A common spatial reference framework

Consistent place names, boundaries, and spatial definitions are essential to compare plans and integrate datasets. This provides a shared language for spatial planning.

### 2 Greater consistency in SDFs

Clearer expectations are needed on how data is used, analysis is presented, and spatial narratives are constructed. This is an area where South African Council for Planners (SACPLAN) and planning schools can play a stronger role, particularly in preparing planners to work with integrated data systems and evolving tools.

Capacity is central here: standardisation without capacity is difficult to implement, while capacity-building without a common framework risks reinforcing fragmentation.

### 3 Interoperability

Data platforms and planning systems need to connect, enabling datasets and plans to be layered and compared across scales. The direction of the NSDO reflects this emphasis on integration.

# The NSH's Living Atlas of Places and Living SDF Portal

Work underway at the National Strategic Hub is a practical means of addressing many of these challenges. The **Living Atlas of Places** and **Living SDF Portal** are being developed as complementary tools to strengthen how spatial data is structured, accessed, and used across the system.

The **Living Atlas of Places** functions as a national, evolving spatial base. It is a structured environment that brings together multiple spatial layers into a coherent, standardised view of the country. This includes settlement hierarchies and typologies, infrastructure networks, service access, environmental risk, and economic activity. It establishes a consistent way of referencing places (standardising names, boundaries, and spatial relationships) so that datasets can be combined and compared.

The Living Atlas of Places is designed to support interpretation. It enables users to layer datasets, explore spatial relationships, and build a clearer picture of how places function and change over time. This addresses a key gap in current planning practice, where data exists but is seldom integrated into a coherent account of place.

The **Living SDF Portal** is being developed to build on this foundation. Rather than static documents, Living SDFs will become continuously updated planning environments where analysis, narrative, and spatial strategy are directly linked. The system will make planning logic explicit:

- Data inputs and assumptions are visible and updatable
- Analysis is traceable and can be refined over time
- Narrative and spatial proposals are tied to underlying evidence
- Maps form part of an interactive analytical process
- AI-supported guidance to prompt analysis, flag gaps, and improve consistency

*The Portal will make it possible to see how plans move from analysis to strategy.*

In practice, this introduces several shifts in how SDFs operate:

- From static maps to live GIS environments
- From once-off analysis to ongoing refinement
- From isolated plans to connected, comparable spatial environments
- From outsourced outputs to institutional planning tools

**The approach also recognises uneven municipal capacity.** By providing a shared spatial foundation and embedded analytical tools, it lowers the barrier to entry while still supporting more advanced use.

In this way, it aims to raise the overall quality and consistency of planning across the system.

## The National Spatial Data Observatory

Currently in its conceptual phase, DALRRD's NSDO aims to enable integrated access to spatial datasets across government custodians.

- Provides a single point of access to spatial data, improving discoverability and usability
- Focuses on standardisation, metadata, and interoperability across sectors and spheres
- Supports evidence-based planning and alignment with national spatial priorities
- Positioned as core data infrastructure, rather than a planning tool

## The City of Joburg's Integrated Spatial Data Platform

The City of Johannesburg's ISDP illustrates what is possible when data is brought together into a single, accessible environment to support planning and coordination.

- Integrates spatial and non-spatial datasets into a unified platform
- Enables real-time access, visualisation, and analysis for planners and officials
- Supports cross-departmental coordination within the municipality
- Demonstrates how integrated data systems can strengthen planning and implementation

## Connecting the Living Atlas of Places and Living SDF Portal to existing efforts

The value of the NSH's Living Atlas of Places and Living SDF Portal lies in how they reinforce work already underway across government and the profession.

These tools are being developed with a clear line of sight to national efforts, particularly DALRRD's National Spatial Data Observatory. The Living Atlas of Places can serve as a practical, user-facing layer within this ecosystem, organising and standardising spatial data in support of the NSDO's role as a national backbone. The Living SDF Portal, in turn, translates this shared data foundation into municipal planning practice.

Platforms such as those developed by the City of Joburg demonstrate the potential of integrated spatial systems. The Living Atlas of Places and Living SDF Portal can complement these by providing a consistent national reference and enabling interoperability across systems.

For the profession, this signals a shift in practice. Working in this environment requires the ability to interpret integrated datasets and translate them into coherent spatial strategies - *an area where SACPLAN has an important role in ensuring training and standards keep pace.*

## Conclusion: towards a more aligned planning system

There is clear momentum in South Africa's spatial planning landscape. National initiatives are advancing, local innovation is emerging, and there is growing recognition of the need for better integration between data and planning.

The central challenge is how to translate this momentum into alignment.

## Resources

The National Strategic Hub Portal



City of Johannesburg's Integrated Spatial Data Platform



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