

South African Functional Town Typology 2018

van Huyssteen, E. Green, C. Sogoni, Z., Maritz, J. and McKelly, D. South African Functional Town Typology (CSIR 2018 v2). Available at http://stepsa.org/socio_econ.html#Indicator

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Overview

The CSIR Functional Town Typology has been developed with the specific purpose to provide a fine grained, but nationally comparable overview of regional scale settlement patterns and trends. The latter provides a mechanism to identify, calculate and analyse a set of development information and trends pertaining to the range of towns and cities, as well as high density rural settlements across South Africa. It enables profiling of specific settlements and or the analysis of demographic and economic trends of a set of settlements with similar scale and type. The typology enables calculating the population and the economy of functional town areas, comparing town areas relative to non-town areas and exploring regional and spatial inter-relations. It also enables temporal and spatial comparison at a regional scale of settlements independent of municipal boundary demarcation.

Profile

The share of Africans living in urban areas is projected to grow from 36 percent in 2010 to 50 percent by 2030. The continent's urbanization rate, the highest in the world, could either lead to economic growth, transformation, and poverty reduction or increased levels of poverty if the right policies are not implemented. This trend also holds true in the South Africa context. Although much of the growth is in established and recognised towns and cities there is also a growing trend of concentrated settlement formation in areas commonly seen as rural.

Shaping an urban and urban-in-rural future and actively harnessing the urban dividend in an increasingly uncertain and volatile context such as South Africa requires more than mere tracking and reporting increasingly standardised indicators. It requires identifying relevant patterns, probes and framing conditions and thus, understanding the dynamics, patterns and risks associated with the functional and highly relational system of investment, use and movement within and between cities, towns and settlements.

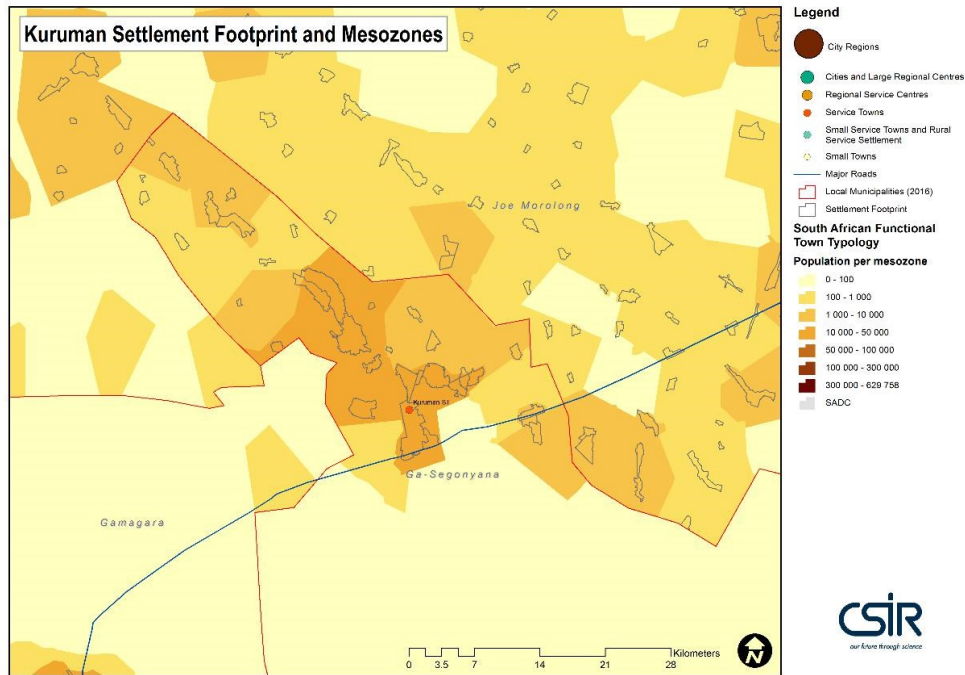
In order to actively shape, adapt and transform the quality and future of settlements, it is critical to explore intra and inter-settlement patterns, trends, dynamics, as well as inter-relational and temporal shifts of the types of places and settlements that form distinct functionally linked places.

The CSIR Town Typology was developed to explore settlement dynamics at regional and national scale, identifying functional town and settlement areas in the South African context, where firstly, official data are captured at municipal scale (where large municipal areas incorporates multiple settlements and rural areasⁱ), and secondly even where due to the apartheid legacy even where finer grained information is increasingly availableⁱⁱ (See Figure 1):



concentrated functional town areas are still not easily identifiable by name or a contiguous densely settled area of separated development of former Black and White township areas, and large numbers of people were excluded from formal urban areas and forced to live in high density rural areas where growth are often not regarded as 'urban' because of the traditional and formal nature thereof.

Figure 1: Value and basis of national settlement profiling in South Africa - Kuruman used as an example



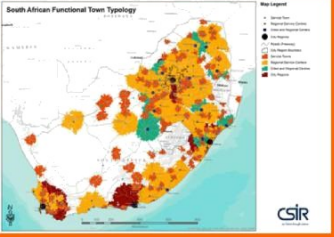

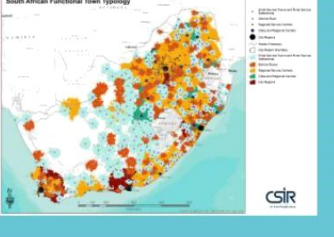

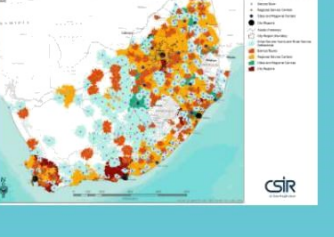

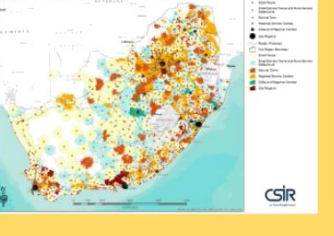

Settlement types have been developed to describe and provide an overview of size, but also function of the functional town within the broader network of settlements in South Africa. It's important to note that place names of the biggest and most well-known town/settlement are used for ease of reference and location identification and metro's and secondary cities are included within the 'city area' category within the typology.





Table 1: CSIR Town Area Typology, Categories, Descriptions and Regional Roles

CSIR Town Area Typology <i>Regional Location and conceptual illustration of regional service roles and reach</i>	Description of Functional Town Area Types / Sub-types Based on urban function in surrounding region and urban area size	Example of Morphology
City Regions	<p>Population: > 1 million people Morphology: Large urban conurbations (functional regions) Economy: Diverse, Economic output > R40 816 mill/yr (2013) Places: Cape Town City Region, Gauteng City Region, eThekweni City Region, Nelson Mandela Bay City Region</p>	
Cities and Very Large Regional Centers	<p>Population: > 500 000 people (cities), >300 000 (Very large towns) Morphology: Dense urban areas with interconnected settlements in functional hinterland areas Economy: Service related. Economic output >R7 900mill/yr (2013) (Cities); and >R4 000mill/yr (2013) City Examples: Buffalo City, Polokwane, Mangaung Very large regional centers: Welkom, Tzaneen, Witbank, New Castle</p>	
Large Regional Centres	<p>Population: 100 000-300 000 people Morphology: Regional node consisting of interconnected settlements, with significant reach in hinterland. Significant social and economic service role in region. Economy Total economic output above R 1400mill in 2013 Examples: Mokopane, George, Mthatha, Ladysmith</p>	
Regional Centres	<p>Population: < 100 000 people Morphology: Regional node consisting of interconnected settlements, with significant reach in hinterland. Significant social and economic service role in sparsely populated region. Economy >Total economic output above R 1100mill in 2013 Examples: Bela-Bela , Bethlehem, Grahamstown, Mossel Bay</p>	



<p>Service Towns</p> 	<p>Population: Population variation between 15 000 to 100 000 population Economy and Services: Providing an economic and social service anchor role in hinterland. Total economic output >R270mill (2013) in (Average Service related economic output R670mill/town) Examples: Jane Furse, Harrismith, Jeffreys Bay, Thabazimbi, Taung</p>	
<p>Small Service Towns</p> 	<p>Population: Less than 20 000 people in town itself. Morphology: Monocentric small towns, often apartheid landscape double centre towns Local Service role: Playing an anchor role as social service point, serving a large number of people within 30km from the town in denser areas and within 50km from the town in sparser areas. Economy: Government and community services significant in local economy. Examples: Nkandla, Piketberg, Victoria West, Swartruggens</p>	
<p>Rural Service Settlement</p> 	<p>Population: Varied in nodal settlement, large population in direct hinterland Morphology: Emerging nodes of consolidation in Dense Rural Settlements Local Service role: Strategically located to play an anchor role as social service point, serving a large number of people within 30km from the town in denser areas and within 50km from the town in sparser areas. Examples: Jozini, Port St Johns, Lady Frere, Highflats</p>	
<p>Small Towns</p> 	<p>Population: Less than 20 000 people in town itself Morphology: Monocentric small towns, often apartheid landscape double centre towns in sparse western parts of SA Economy and service role. Primarily serve local population and/or 'niche' economic activity such as mining, tourism or fisheries. Examples: Burgersfort, Coffee Bay, Nqamakwe, Lady Grey</p>	



<p>Rural Settlement Areas & Villages</p>	<p>This area incorporates both (i) Formal Rural settlement area - EA's and Settlements Footprints classified as formal as well as (ii) Traditional Authority Rural Settlement Area - EA's and Settlement Footprint areas classified as traditional. Both have very small formal service economy activities. Within such areas Rural Service Settlements and smaller nodal settlements with limited population and economy but forming part of the South African group of towns can be identified for location of social services as applicable based on the population threshold and characteristics. These places will be separately identified in the next update of the typology.</p>	
<p>Sparsely Populated Rural Areas</p>	<p>Sparsely populated areas (meso zone areas without rural settlements) Sparse East (more than 10 persons per sq km) while in the Sparse West this is defined as less than 10 persons per sq km and has an impact on the accessible travel access distance and threshold of certain social services.</p>	

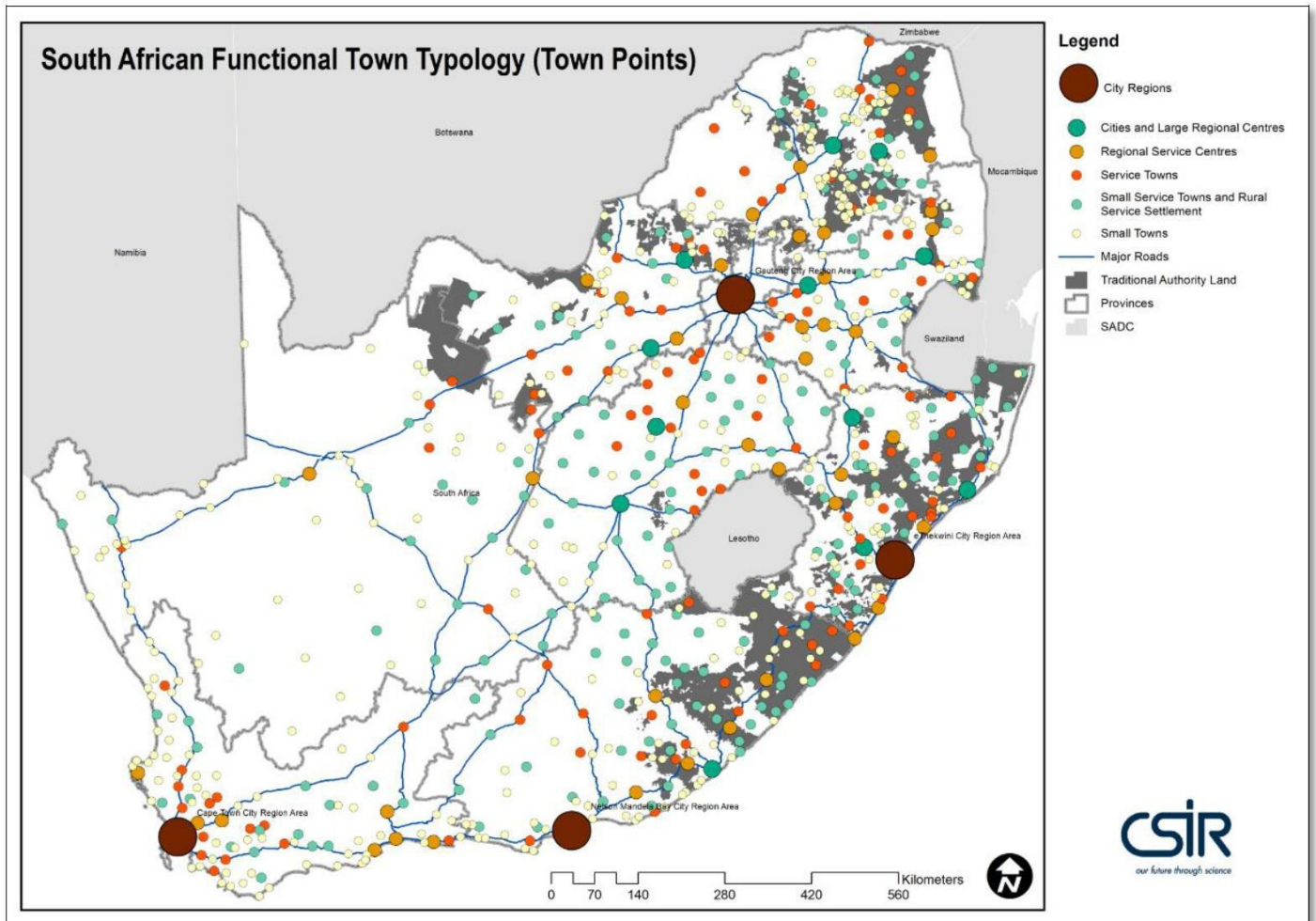
A breakdown of the number of settlements of each type as well as the numbers of people living in the various categories is shown in Table 2 below:

Table 2: Names of settlement types, population and number of settlements within each settlement type per province.

CSIR Town Functional Area Classification	EC	FS	GT	KZN	LMP	MP	NC	NW	WC
Nelson Mandela Bay City Region: Nelson Mandela Bay Metro	1								
Gauteng city region in Fezile Dabi District		1							
eThekweni City Region				1					
Gauteng city region			1						
Gauteng city region in Nkangala District						1			
Gauteng city region in Bojanala District								1	
Cape Town City Region									1
City Area	1	2		3	1	1		1	
Large Regional Centre (RC1)		1		1	1	1		1	
Mid-sized Regional Service Centre (RC2)	5	2		6	5	5	2	3	3
Regional Service Centre (RC3)	1	1		1	2	3		1	5
Service Town	19	16		20	17	14	9	13	15
Rural Service Settlement	5			6	4	2	1	1	
Small Service Town	34	31		28	20	10	18	12	17
Local Towns/Settlement Nodes	58	23	2	34	73	28	45	25	58

The spatial distribution of cities, towns and settlements according to the typology is set out in Figure 2.

Figure 2: CSIR South African Town Typology 2018 (Update of the former SACN/CSIR Functional Settlement typology, 2013)

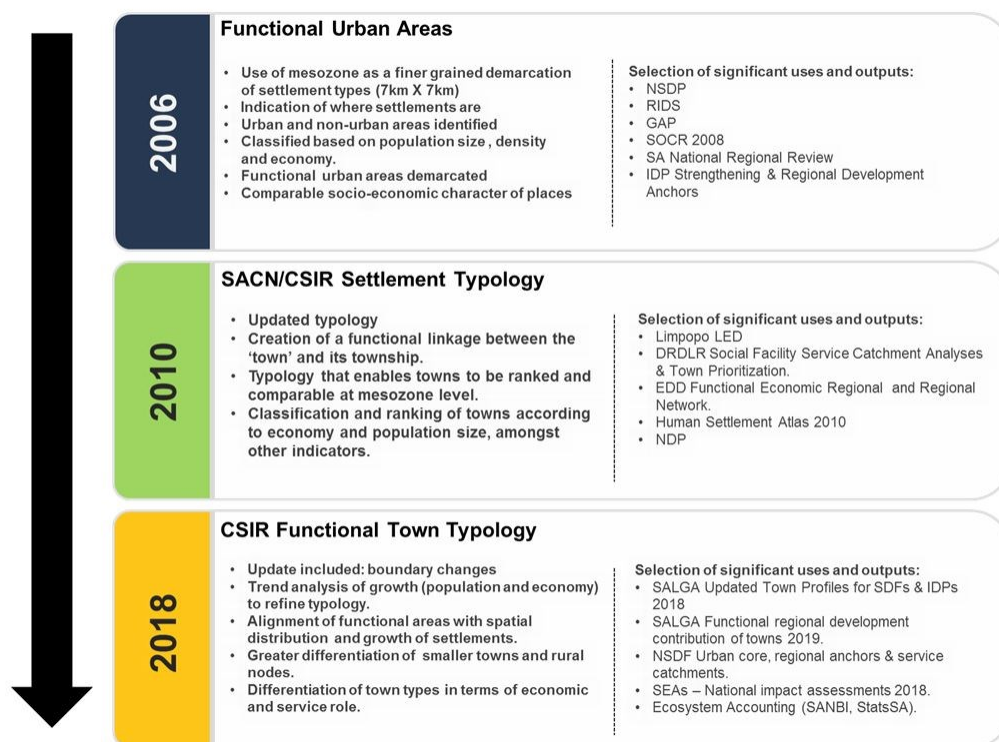


Development overview

The Town Typology forms part of a range of typologies developed by the CSIR together with a number of other role players, over the last couple of years (See Figure 3). These typologies were developed to provide spatial planning evidence, analysis, modelling outputs to provide a platform support to government planning and development and with a focus on strengthening strategic regional, inter-regional and intergovernmental planning, resource allocation and monitoring and evaluation in South Africa.



Figure 3: Development of Functional Town Typology



The latest 2018 typology is unique in that it further enables the separate calculation and analysis of the population and the economy of functionally linked areas relative to non – built up areas within each municipal area. The updated typology has had immediate impact through application in the Draft NSDF 2018 framework as well as the CSIR/IRDC Greenbook on Climate Change Adaptation (To be released 2019). The latter was a key stimulus and a contributor to the new South African Functional Town Typology 2018, as it increased the urgency for the demarcation of the settlement footprint and developing the open settlement layer for built-up areas across the country.

For access to the spatial frame (mesoframe) and socio-economic indicators, see http://stepsa.org/socio_econ.html #Indicator.

To download the South African Functional Town Typology 2018 data available at the [Meso Frame level follow this link.](#)

Insights and Use

Using the CSIR Town Typology however, it is estimated that almost 79% of South Africa's population of 55.8 million people, reside within cities and towns throughout the so-called urban and rural landscapes. It is calculated that by 2016 of the 42.7% of South Africa's population resided within the four functional city region areas of Gauteng, Cape Town, eThekweni and Nelson Mandela Bay (as identified in the typology) and 10% lived within Cities and large regional towns, about 25% in a network of large and smaller service towns, and a further 18% of South Africans reside in 'rural' settlements¹, it is evident that South Africa needs to harness the future - to be addressed within its network of cities, towns and settlements. The magnitude of this is set out in Table 1 below.

¹ For a definition of settlements (City Regions, Cities, Towns, etc.) see Table 1.1



Findings from recently conducted analyses also illustrate the crucial role that these populated places, and especially city region areas play as economic engines and job baskets within South Africa. An estimated 60% of the formal economy alone is being generated in the City Regions. We add to the City Regions the network of Cities and major towns this includes more than 83% of the total South African economy.

Table 1: South African Town Area Typology

CSIR Town Area Typology	Area (Km²)*	% of National Area	% of National Population	% Formal National Economic Activity
City Regions	19 547.43	1.60	42.72	60.55
Cities and Large Regional Centres	11 230.02	0.92	10.40	11.39
TOTAL METRO AREAS AND CITIES	30 777.45	2.52	53.11	71.94
Regional Service Centres	14 118.64	1.16	10.56	8.68
Service Towns	10 291.99	0.84	7.28	4.92
TOTAL MAJOR TOWNS	24 410.63	2.00	17.84	13.60
Small Service Towns & Rural Service Settlements	10 573.79	0.87	3.71	2.07
Small Towns	18 704.01	1.53	4.05	2.17
TOTAL SMALL & EMERGING RURAL TOWNS	29 277.80	2.40	7.76	4.24
Dense Rural Settlement Areas & Villages	134 515.71	11.03	17.94	4.54
Sparsely Populated Rural Settlement Areas	1 000 732.43	82.05	3.35	5.67
TOTAL REST OF SA	1 135 248.13	93.07	21.29	10.22
NATIONAL TOTALS	1 219 714.02	100.00	100.00	100.00

Due to its value to provide nationally comparative overview, the functional town area demarcation and town profiling was also over time used extensively as basis to describe and compare cities and towns across South Africa, as well as town growth trends in support of government policy. This inter alia includes use within the Chapter 8 in the NDP, 2012; the IUDF, 2015, the SA Risk and Vulnerability Atlas 1 & 2; the SACN SOCR, 2016; the DRDLR Social Facility Toolkit, 2016 and most recently in the Draft NSDF, 2018 to develop settlement scenarios for the future.

Contributors

The typology was developed with a range of collaborators over time, including The Presidency, the SA Cities Network, the Department of Rural Development and Land Reform. For more information on the updated South African Functional Settlement Typology contact:

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ⁱ Official socio-economic information in South Africa is made available and recorded at local municipal scale. Accounting and analyses are based on information at municipal administrative boundaries, made up of wall to wall areas of jurisdiction which incorporates towns and surrounding rural areas. The official data sets enables a comparison of size, growth and population distribution between municipalities (with changing admin boundaries), with a distinction between municipalities that are categorized as metropolitan, urban or rural (See Figure 1) but does not reflect functional town areas within, or between administrative areas.

ⁱⁱ Finer grained socio-economic information is available also at enumerator area or main place levels. However using spatial units designed for census enumeration purposes (demarcated to limit the number of people per unit for census management purposes) is not necessarily a useful unit of planning or analyses from a functional town level perspective. Especially as these units can't be compared spatially and temporally due to different sizes and changing boundaries over time (figure 2). Other than the official data sets, finer grained disaggregated and spatially specific data sets, based on the manipulation and analysis of a number of other primary data sets and have been progressively improved over the last 10 years. This data comprises a fine grained urban (built-up area) density analysis based on building and land-cover data sets, spatial disaggregation and sector or local specific information sets. Such analysis is increasingly enabled by technology and disaggregation tools and the use of 1x1km grid to calculate degrees of urbanism as set out by UND and the most recent CSIR Settlement Footprints are the most innovative examples (Figure 3).– the analysis outputs do not, however, directly enable profiling by functionally linked and distinct settlement areas, cities or towns