

# Planning for Social Facility Provision Social Facility Toolkit and SA Town Typologies

Linking and aligning facility provision in a regional context Settlement Typologies and the link to Standards Provision for KZN November 2018

www.socialfacilityprovisiontoolkit.co.za



#### **Background**

- 2015/6 CSIR contracted by DRDLR to undertake research & develop access & threshold standards to guide the development of social facilities in rural RSA.
- Differentiated provision standards for government provided social facilities and emergency services.
- Support application & planning for new investment & prevent "unsustainable" investments.
- Need to make smarter and informed investment choices.
- Use of empirical data to support investment of enabling infrastructure at settlement level.
- Not just about facilities- but about supporting infrastructure for selected towns





#### Facility planning principles

- Accessibility and equity of services
- Optimal location
- Effective investment
- Central place theory; Regional service centres
- Insufficient funding for uniform provision in all areas
- Provision standards relate to location; access distance & population
   threshold







#### **Social facility provision Toolkit!**

Web based Toolkit developed for the Department of Rural Development and Land Reform by the CSIR in collaboration with Retro Rabbit Copyright (2016)

#### What it does:

- ✓ Supports planning & budgeting of social facility provision
- ✓ Provides guidelines on facility provision standards & their application especially in rural areas
- ✓ Provides demographic & morphological profiles of service catchment areas across South Africa
- ✓ Calculates typical social facility service provision for catchments

Freely available at <a href="http://www.socialfacilityprovisiontoolkit.co.za">http://www.socialfacilityprovisiontoolkit.co.za</a>

Can be used online or if preferred, offline (after first downloading it to a local machine)



### Where can we use the outputs?

Regional planning / SDF or sector specific planning. For example:

- IDP processes
- Sector planning
- Capital budget evaluations
- Backlog determination
- Greenfields planning
- Support in community consultation









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## Basic principles of facility planning: WHO gets WHAT, WHERE and HOW MUCH

Citizen perspective



Service provider perspective

#### **Objective 1:**

Improvement of service accessibility and availability from the perspective of existing and potential customers

#### **Objective 2:**

Attraction of the threshold volume of customers needed to cover the overheads and make the service viable



## Assumption and considerations- facility use

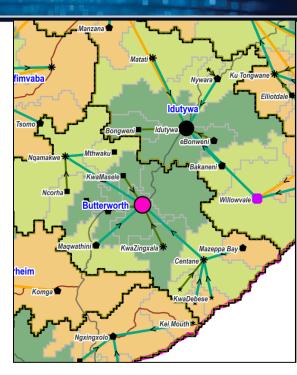
- People will mostly travel to their closest service point
- All services have a critical access distance beyond which utility of accessing the service declines (ACCESS DISTANCE)
- All services need a minimum level of support/population within this distance to be viable (THRESHOLD)
- There is a critical link between the context (density, distance, centrality, etc) and how standards are applied and facilities located & distributed.





## Using Service Centres for planning & locating facilities

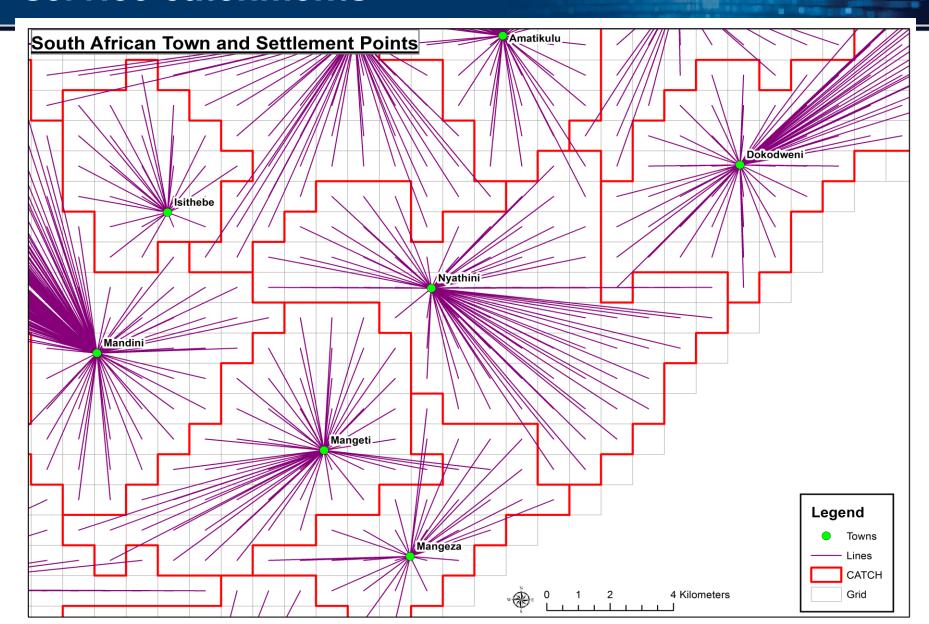
- Settlements play a key role in serving their surrounding areas
- Concepts of central place, accessible service reach used to define service catchment areas
- Population assigned to closest settlement
- Distances to surrounding places mapped
- Developed a hierarchy of linkages







## Catchment approach- national set of regional service catchments







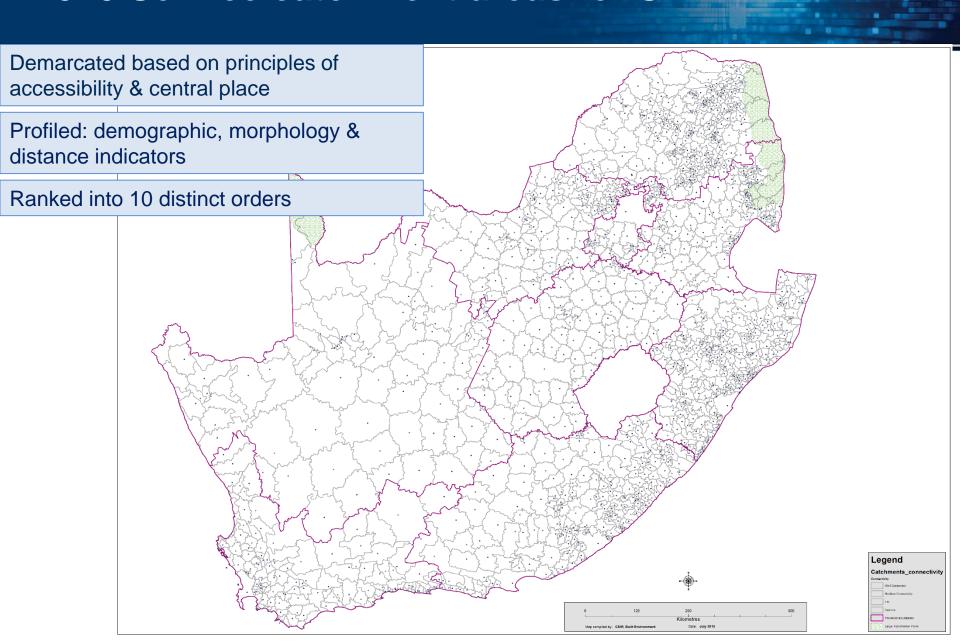
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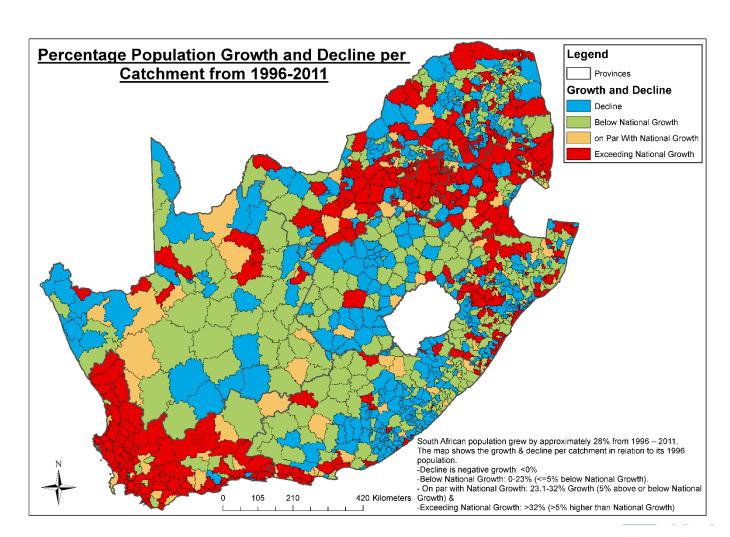
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#### 1328 Service catchment areas for SA



### Population attributes

- ☐ Population 1996, 2001 and 2011
- PopulationDensity
- ☐ Growth/
  Decline
  between 1996
  and 2011
- Age groups
- Distribution around centre
- Economic sectors
- Links to other settlements

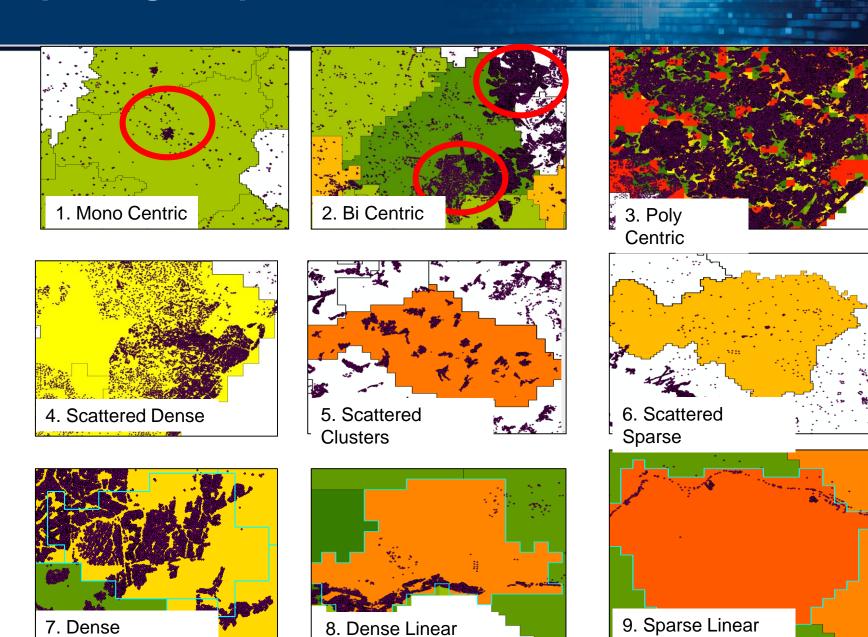


#### Morphological profile

- Settlement distribution and density are key informants together with total population of how service provision should be distributed.
- Each catchment was classified based on its settlement structure.
- 9 Major classes were identified



## Morphological profile



## Classification of catchments in absence of Town Typologies

#### Catchments were ranked into 10 distinct orders / levels or hierarchy.

- Order 1 City regions/ metros e.g. Cape Town, eThekwini, Ekhuruleni, Johannesburg
- Order 2 Cities & proposed metros e.g. Pietermaritzburg, Richards Bay, Nelspruit
- Order 3 Regional centre e.g. Bushbuck Ridge, Butterworth, New Castle, Kimberly, uMtata
- > Order 4 Service town or Sizable or Remote LM or DM Seat / or contextually significant e.g. Laingsburg, Sterkspruit, Harrismith, Pongola, Calvinia, Madibogo, Orkney, Springbok
- ➤ Order 5 >60k large population but less economically significant than another regional place close by. E.g Zakheni, Esikhawini etc
- ➢ Orders 6 10 were categorised based on 2011 Population size
  - ➤ Order 6 > 40k BUT < 60k Catchment population</p>
  - ➤ Order 7 > 20 BUT < 40k Catchment population</p>
  - Order 8 > 10k BUT < 20k Catchment Population</p>
  - Order 9 > 5k BUT < 10K Catchment population</p>
  - Order 10 < 5k Catchment Population</p>



Spatial
Targeting
and
Prioritisation
of
Settlements



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#### Why spatial targeting for service provision

- Opportunity for greater impact with reduced investment
- Based on 'Middle Order facilities' (not local facilities)
- Characteristics:
  - citizen registration services, Thusong Centres, larger/24h clinics, local hospitals, regional libraries & sports centres
  - located within 20-30km
  - typically required 20 000+ people for viability





### Approach & rationale to spatial targeting

#### Why worry, why target?

- Potential overlap & competition of service catchment where towns are close together
- 805 service points needed to reach 96% for middle order services if don't –

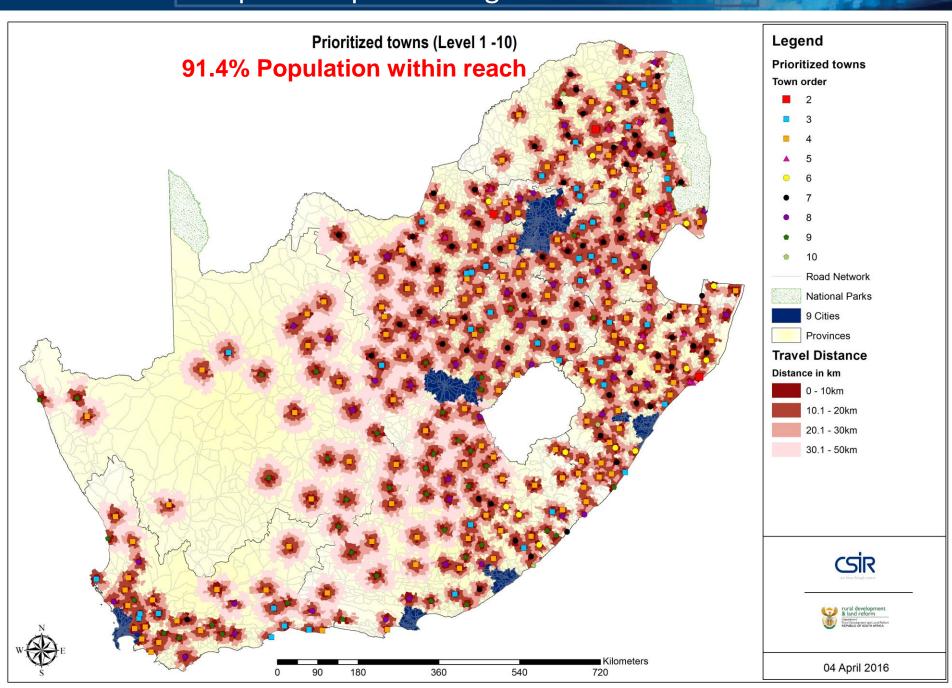
#### **Spatial optimization approach**

- Minimize number of investment locations maintain service coverage at 90%
- Use 30km access distance to maintain access and equity (in low density areas 50km)
- Iterative demarcation of on-overlapping 30/50km service catchments around towns based on the density and size of population
- Population size of service catchment (order level) used as basis for prioritisation.

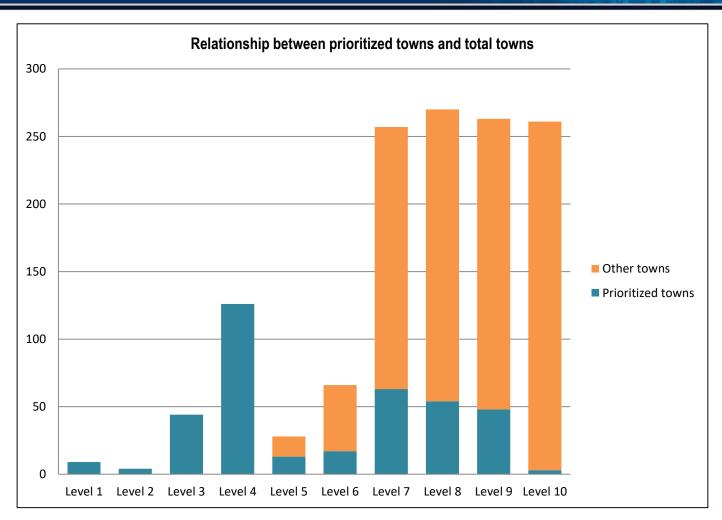




#### Spatial impact of targeted investment



#### **Statistics**





## Impact of prioritisation for middle order services

Non- targeted investment

Targeted investment

All level 1 – 8
catchment nodes =
805 middle order
service
points with 96%
coverage



Prioritised & spatially targeted investment in selected nodes @30/50km distance = 380 metro and non-metro points = 94.1 %

OR

Non-metro SA = 89.5% access coverage



### Value of spatial targeting / prioritisation

- Identified settlements with highest accessibility & population concentration.
- Apply provision norms & standards after selection of optimal places.
- Cost savings of capital & operating costs through 'accessible to most'.
- Concentration & spatial alignment of investment for maximum impact.
- Provided input to South African Functional Town Typology (SAFTT) 2018 ito.
   selection/ hierarchy level of smaller SERVICE places
- Which in turn informed NSDF.









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## Typology timeline

#### **2010 SACN/CSIR:**

- Functional Settlement Typology developed by the CSIR as part of the National Spatial Trends Overview project (2008-2009) for SACN.
- Used by The Presidency and former DPLG to inform Cabinet discussions on urban development policy aspects & developing National Urban Development Framework (SACN et al, 2009).

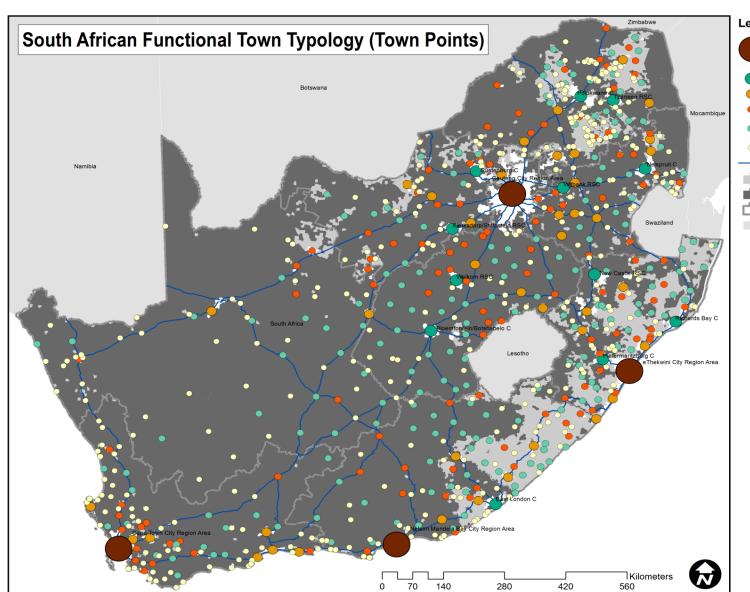
#### **2016** Social Facility Prioritization (DRDLR/CSIR) (population need)

#### 2018 South African Functional Town Typology (CSIR):

- New typology is unique. Includes functional footprint of the built up area of each settlement. SAFTT takes into consideration: settlement extent (built-up footprint); population size & level of economic activity, spatial location & role of the town within the surrounding hinterland.
- SAFTT informed NSDF Urban Cores, Regional Anchors and Rural Service Centres

IVOOLOOV Categories	Description of Functional Town Area Types / Sub-types, classification based on urban function in surrounding region and urban area size (pop and economy).	Examples
City Regions	Population:> 1 million people  Morphology: Large urban conurbations (functional regions)  Economy: Diverse, Economic output > R40 816 mill/yr (2013)	Place: Region, eThekwini City Region
Cities and Very Large	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)	Very large regional centers: Welkom, Tzaneen, Witbank, New Castle Examples: Pietermaritzburg, New Castle
Large Regional Centres	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: Stanger, Scottburgh
Regional Centres	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: Estcourt, Ladysmith
Service Towns	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: , Kokstad, Umzinto
Small Service Towns	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: Dalton, Greytown, Howick
Rural Service	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, Hlabisa, Nkandla
Small Towns	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, Lady Grey

## **SA Functional Town Typology 2018**

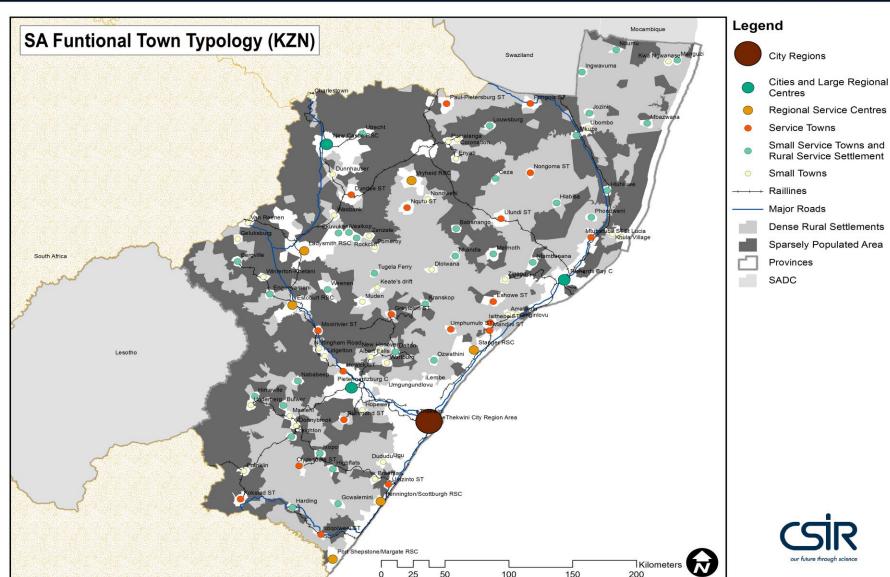


#### Legend



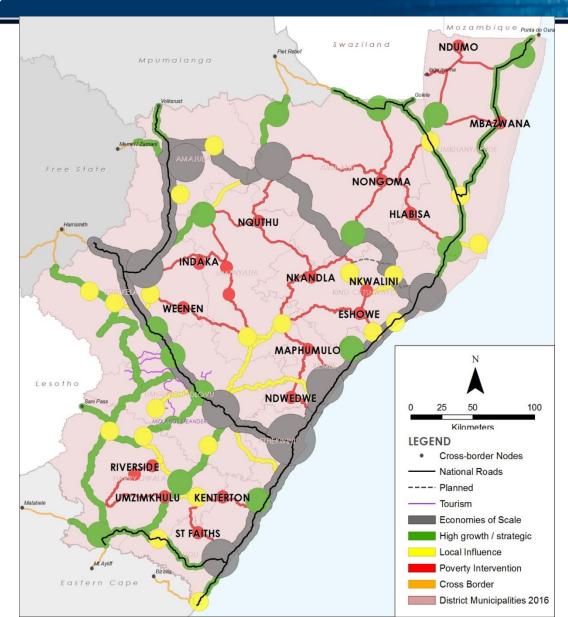
- Cities and Large Regional Centres
- Regional Service Centres
- Service Towns
- Small Service Towns and Rural Service Settlement
- Small Towns
- Major Roads
- Dense Rural Settlements
  - Sparsely Populated Area
- Provinces
- SADC

## 2018 SA Functional Town Typology- points view-**KZN** example

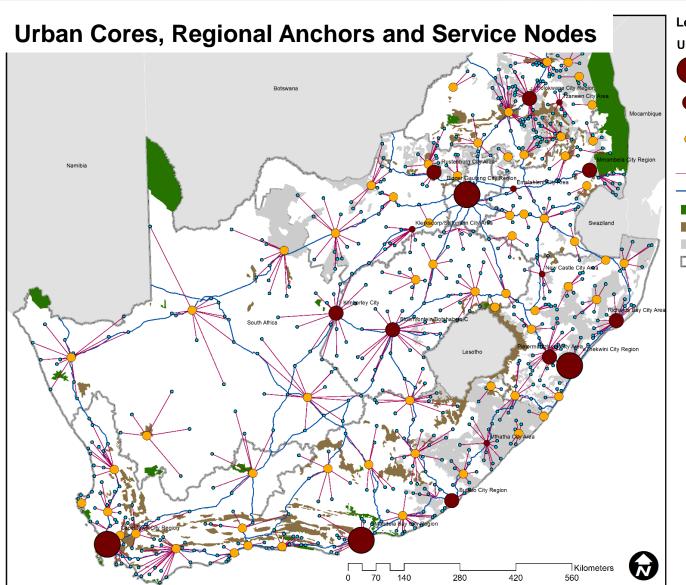




## KZN Provincial Spatial Economic Development Strategy



## **NSDF Interpretation of Typology**



#### Legend

#### **Urban Core Areas**







Regional Anchors

Service Nodes

— Regional Anchor Link

— Major Roads

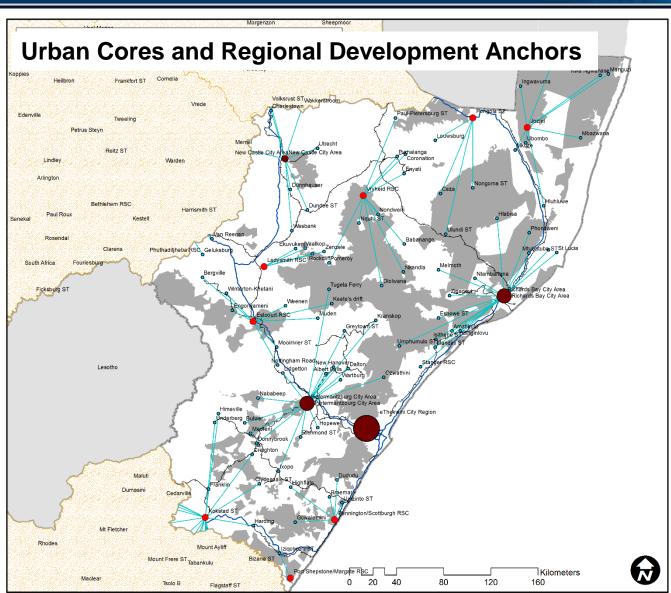
SA National Parks Mountains

Traditional Authority Land

Provinces



### **NSDF Adaptation of Typology - KZN**



#### Legend

#### **NSDF Typology**



Big Urban Cores



Medium Urban Cores



Smaller Urban Cores



Regional Growth Centres

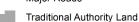




National parks

















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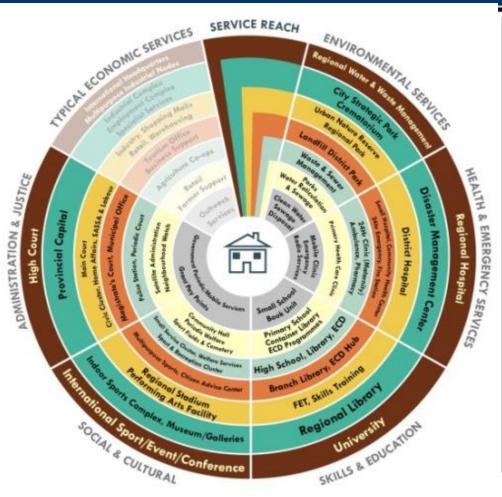
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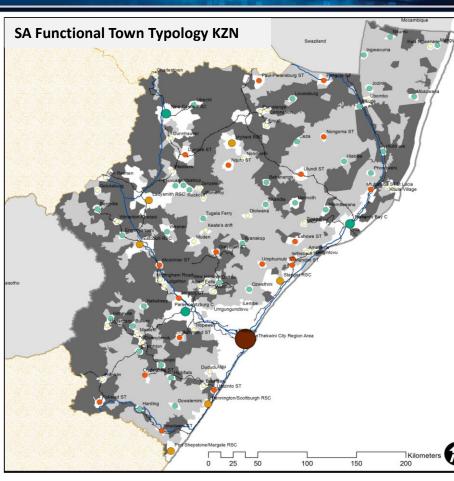
## Linking settlement hierarchy to service provision levels

- Social service types have an order hierarchy that can be linked to population size / role of towns & social facility standards could be linked to specific town typologies.
- Conceptual link between the SA Functional Town
  Typology and the social facility standards is illustrated
  in the form of a 'Service Wheel'.
- Wheel illustrates the 'ideal minimum' relationship between the size & role of places with respect to the strategic location of different categories of social services.



## **Linking services to Town Typology**





CITY REGIONAL SMALL LOCAL CITIES & SMALL VICE TOWNS REGIONS TOWNS LARGE TOWNS SERVICE CENTERS **POINTS** REGIONAL CENTERS SERVICE CENTERS

## 2018 SA Functional Town Typology

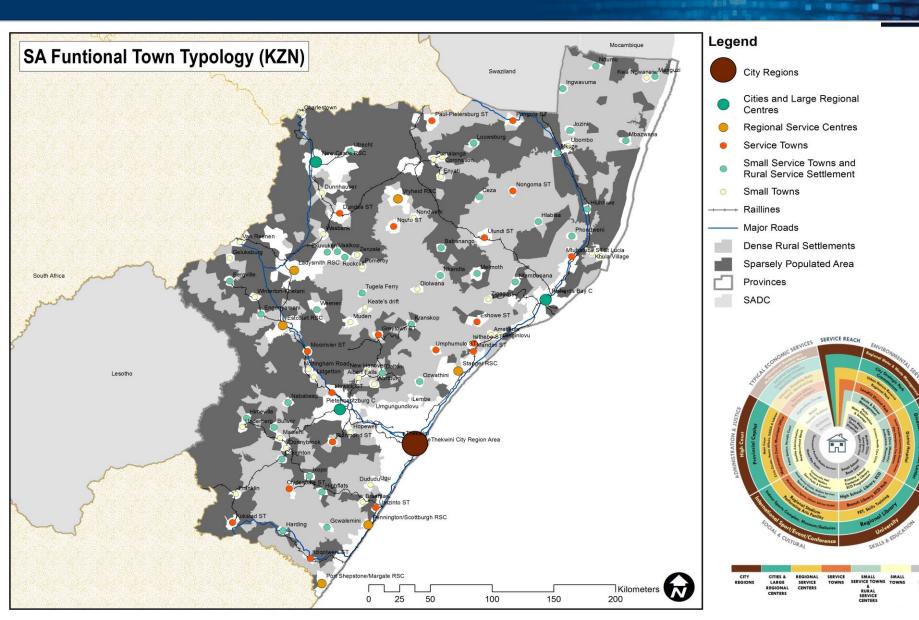


Illustration of Service Reach of Settlement Hierarchy



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### City Regions

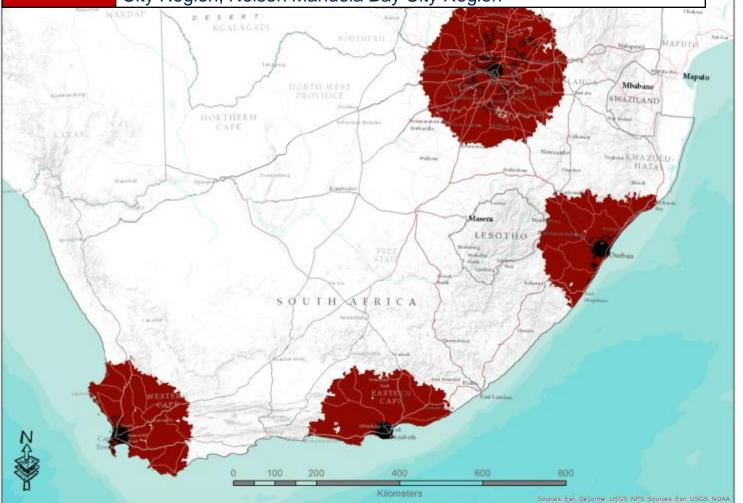
Population:> 1 million people

**Morphology**: Large urban conurbations (functional regions)

**Economy**: Diverse, Economic output > R40 816 mill/yr (2013)

Places: Cape Town City Region, Gauteng City Region, eThekwini

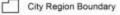
City Region, Nelson Mandela Bay City Region













### Cities and Very Large Regional Centres

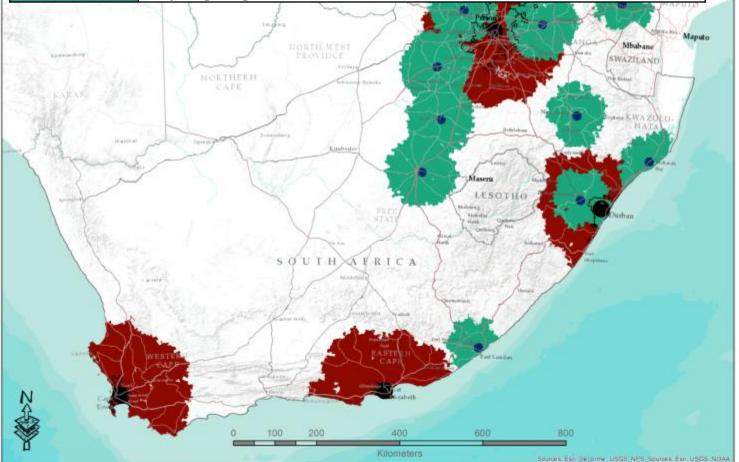
**Population**: > 500 000 people (cities), >300 000 (Very large towns)

**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 centres: Welkom, Tzaneen, Witbank, New Castle



- Cities and Regional Centers
- City Regions
- Roads (Freeway)
- Cities and Regional Centres
- City Regions
- City Region Boundary



Large
Regional
Centres &
Regional
Centres

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:** Upington, Kimberley, George, Mthatha, Ladysmith

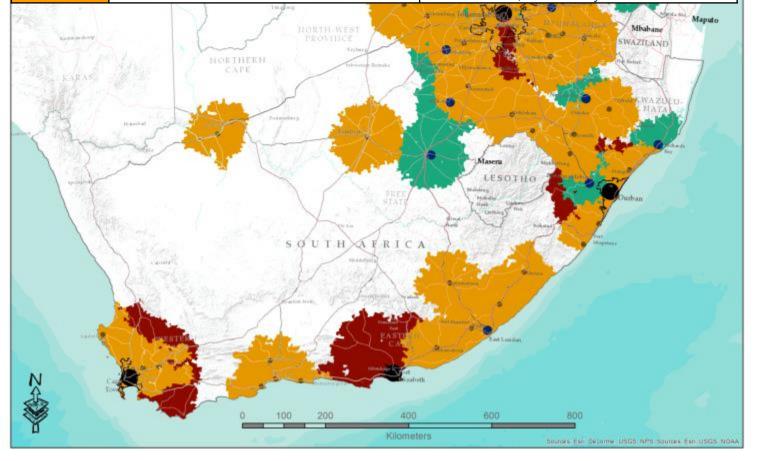
Population: < 100 000 people

**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

- Regional Service Centres
- Cities and Regional Centers
- City Regions
- Roads (Freeway)
- Regional Service Centers
- Cities and Regional Centres
- City Regions
- City Region Boundary



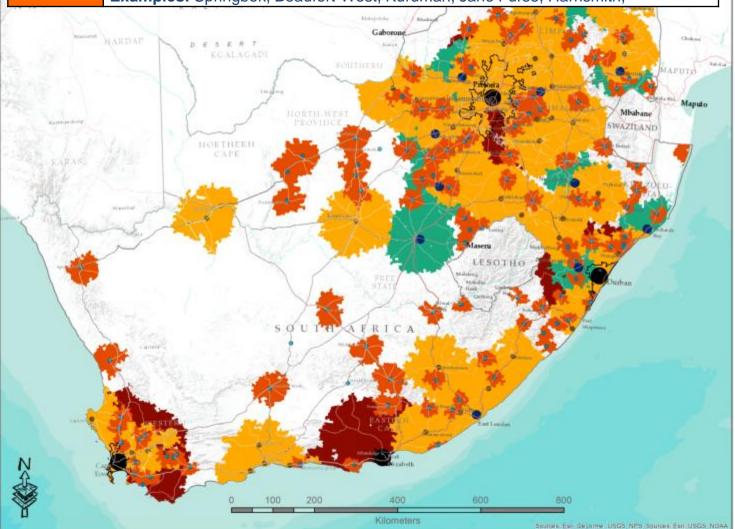


Service Towns Population: Population variation between 15 000 to 100 000 population

Economy & Services: Providing an economic and social service anchor role in hinterland. Total economic output >R270mill (2013)

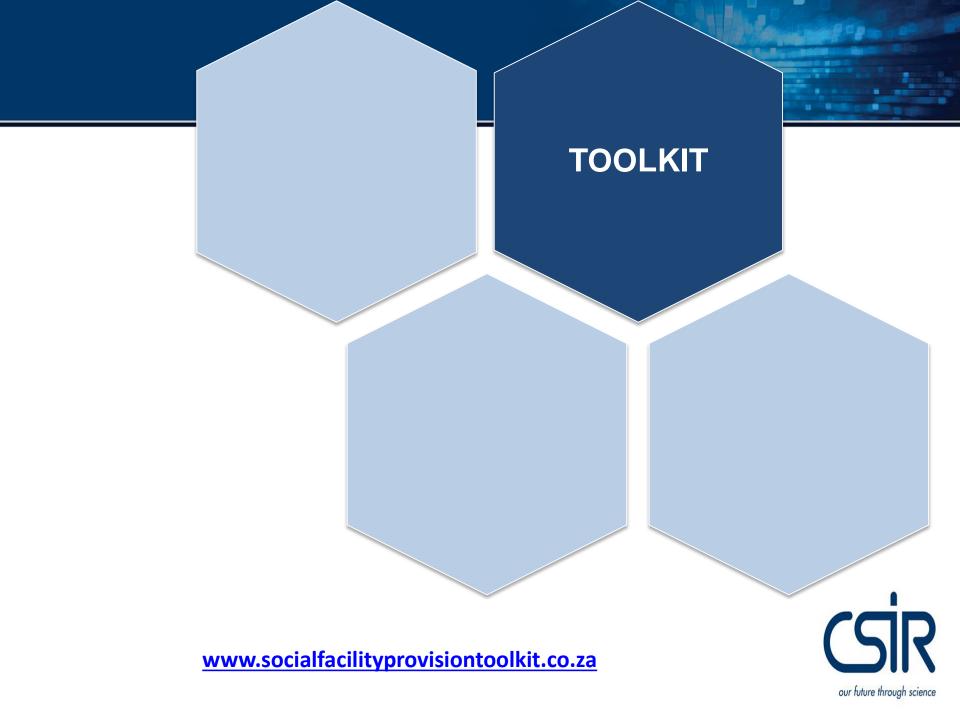
(Average Service related economic output R670mill/town)

Examples: Springbok, Beaufort-West, Kuruman, Jane Furse, Harrismith,



- Service Town
- Regional Service Centres
- Cities and Regional Centers
- City Regions
- Roads (Freeway)
- City Region Boundary
- Service Towns
- Regional Service Centers
- Cities and Regional Centres
- City Regions







SOCIAL FACILITY PROVISION TOOLKIT







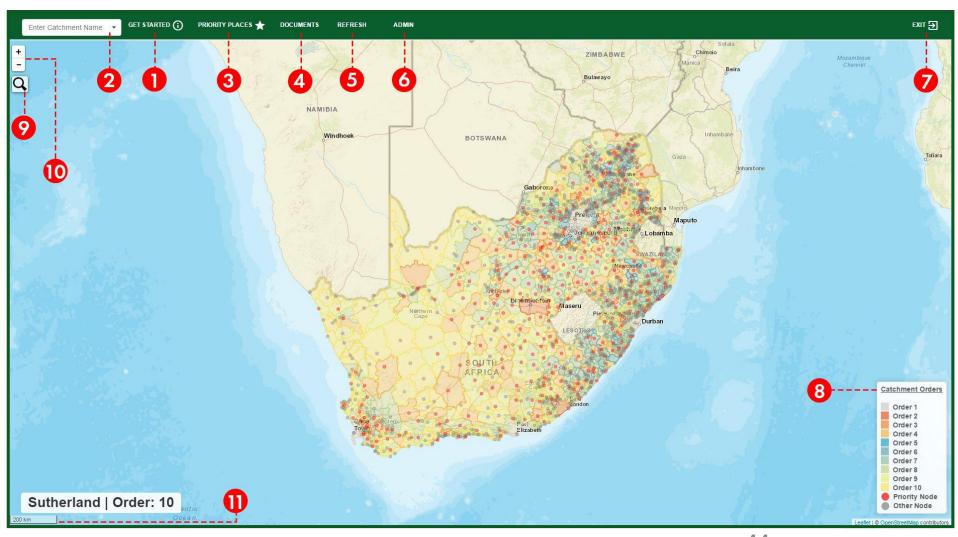
## Registration and login



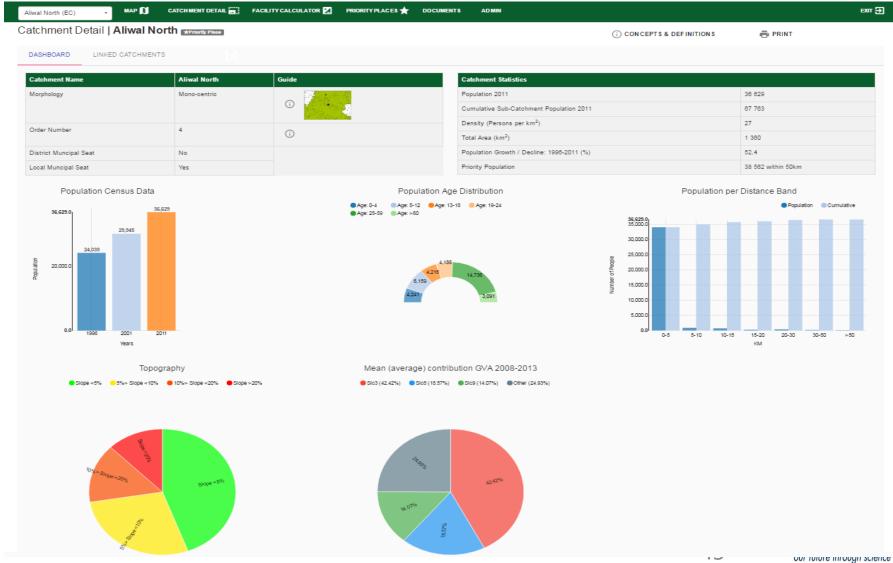




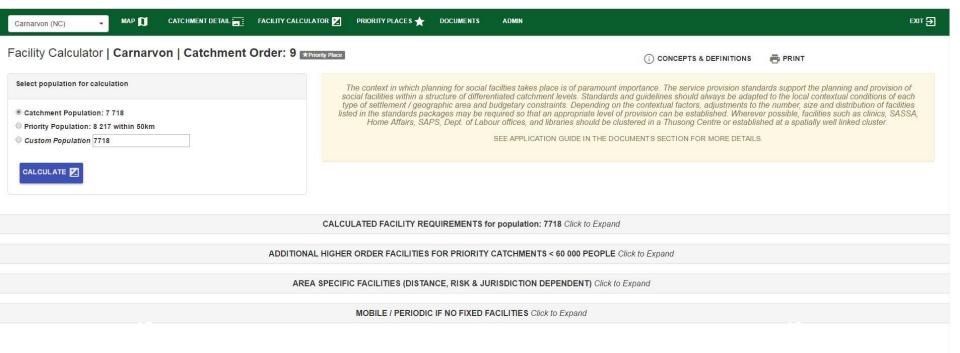
# Landing page orientation



## Catchment detail - dashboard



# Facility calculatorbuilt in algorithm based on standards





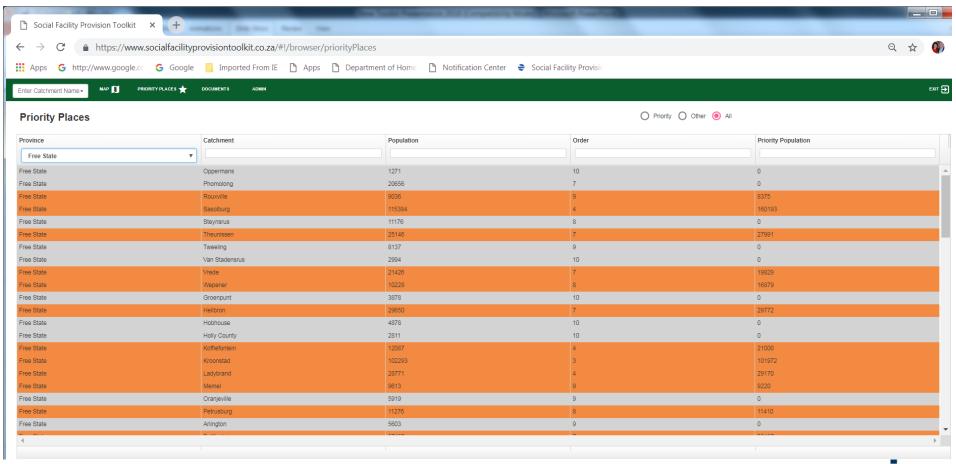
## Facility calculator – expanded lists



CALCULATED FACILITY REQUIREMENTS for population: 7718 Click to Expand

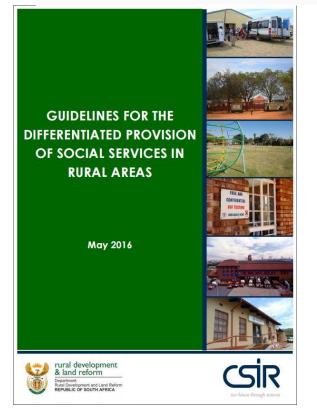
Sector	Facility Type   (1)	Number of Facilities	Population (min)	Population (max)	Within Distance	Notes
HEALTH	Basic Clinic	1,0	5 000	9 999	5	Open at least 4 days a week; 2 consulting rooms.
EDUCATION	Primary School – Medium	1,8	2 200	4 399	5	This result relates to medium schools of 311 - 620 learners each; Adjust school size to meet learner numbers; Learner enrolment is a critical factor (on average 14% of population are of primary school going age but this may differ in certain areas & must be verified). If 4 000+ people are within a 5km distance then could consolidate provision into larger schools.
EDUCATION	Secondary School - Medium	1,3	4 000	5 999	5	This result relates to medium schools of 401 - 1 600 learners each; Adjust school size to meet learner numbers; Learner enrolment is a critical factor (on average 10% of population are of secondary school going age but this may differ in certain areas & must be verified]. If 6000+ people are within a 5km distance then could consolidate provision into larger schools.
SOCIAL DEVELOPMENT	Crèche	2,2	2 400	3 500	5	Government support appropriate.
SOCIAL DEVELOPMENT	Social Grant Pay Point	Further study required.	100		5	Distance is the critical factor (within 5km of recipients); at least 100 grant recipients required for each pay point. Beneficiaries can also use various merchants, bank ATMs, or the Post Office to withdraw their funds.
THU SONG CENTRE	Thusong - Mobile Service (with minimum of Home Affairs & SASSA)	1,0	2 000	9 999	50	80m2 with toilets & an office. (In tribal authorities areas provision for office space for tribal council offices within community halls is recommended.)
COMMUNITY HALLS	E-grade Hall	1,0	5 000	14 999	10	80m2 with toilets & an office. (In tribal authorities areas provision for office space for tribal council offices within community halls is recommended.)  Note: Consideration for hall configurations based on other elligible halls.
SPORTS	Sports	4,3 ha	3 000		5	Total land requirement for Sports not to exceed 0.56ha/ 1000 people & to be divided according to sports codes. Typical provision of: Level surface playing fields (ground/ gravel); Single hard surface courts. Preferably linked to a school & park.
LIBRARIES	Basic Public Library	1,0	5 000	24 999	5	Only provide if not within 10km of a branch library.
PARKS	Community Park	3,1 ha	2 000			Overall provision ratio of 0.4ha/ 1 000 people for 1 or more parks (preferably adjacent to schools & sports fields and can be provided at identified recreation points, i.e. beaches, dams, etc.)
CEMETERIES	Cemetery	2,0 ha				The ratio of 0.26ha per 1000 people is for a 30-year period and assumes an annual death rate of 1.6%, that 100% of the dead are buried and that there is no recycling of graves. Depending on the rate of burials in a cemetery, replanning on a more frequent basis may be require (NB: If recycling of graves and cremation are practiced, the provision ratio could bedropped considerably. However, these are sensitive issues for many communities.) Further investigation is required in those areas where informal burial practices are still prevalent as burials are subject to legal restrictions.
Facilities shaded in green are of a higher order.						

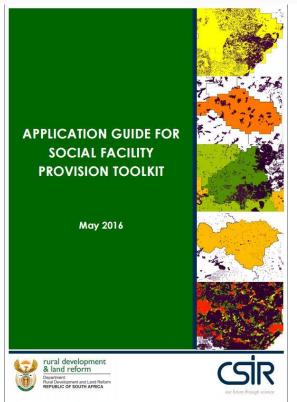
# Ranking priority and non priority catchments

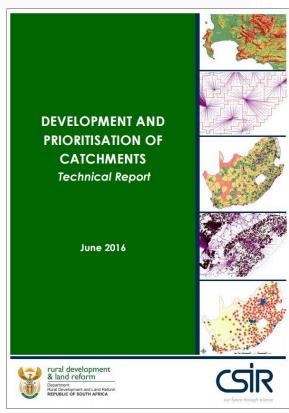


## **Documents**









## **Application considerations**

- Support the planning and provision of social facilities determine the maximum number or total capacity of facilities required
- Can be used to acquire/allocate land, access funds / benchmark or evaluating facility backlogs
- Apply standards & motivate any deviations
- Adaptation to the local planning context critical (i.e. specific settlement / catchment area, demographic profiles & available budget)
- Total facility demand must be evaluated / compared to CURRENT provision





## Clustering & location principles

- Clustering & multi-use of buildings is important: IN RIGHT SPACES!!! Not just where land is cheap or owned
  - opportunities for facility sharing land savings and trip reductions
  - creates focused development nodes improved settlement structure
  - supports effective integration & spatially aligned service delivery
  - greater financial sustainability
- Lower order services:
  - Located close to people
- Middle and higher order facilities
  - Regional level: Located first at NSDF/ PSDF / rural anchor and service centres/priority nodes
  - Settlement level in CENTRAL LOCATIONS......not just where you have available/cheap land
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### **Location considerations**

- Consider settlement morphology of the service catchment, settlement role
   & hierarchy, existing facilities and clusters
- Cluster facilities within identified well located nodes
- Provide the largest suitable facility of appropriate type (within standards) Multi-ward/ regional approach critical
- Apply concept of service catchment areas based on allocation of population to closest settlement point
- Apply minimum thresholds minimum number of people before providing a facility
- Use mix of facility sizes (e.g. for health, schools, libraries) and match to morphology BUT do not over provide (unless special case ie. cross border visits are recorded)







## **Available resources**

- KZN DRAFT Norms and Standards
- CSIR Guidelines for the Provision of Social Facilities for South African Settlements 2012 and update 2015
- Social Facility Provision Toolkit
- Guidelines for the Differentiated Provision of Social Services in Rural Areas
- Application Guide for Social Facility Provision Toolkit
- South African Functional Town Typology
- NSDF
- www.stepsa.org





## What resources are found in the Toolkit?

### Web-based tool for viewing and accessing information covering:

- Demarcated service catchment areas for the whole country
- Profile data for the catchments linked to a hierarchy of settlements
- Differentiated standards for a range of facilities and densities
- Facility demand calculator for any catchment
- Application guides
- Spatially prioritised towns of different levels (for investment of middle order service provision)





# Key messages

#### **Standards**

 Differentiated but standardised provision of facilities in all areas based on context = KZN and DRDLR

### **Toolkit**

- Packages data, guides and calculator in an integrated, easy to use, accessible (online) manner
- Enables quick view of key profile data & rapid calculation of total facility requirement
- Toolkit outputs (can be used to support funding requests & evidence-based allocation of services
- Catchment profiles provide information to support planning, social investment and budgeting.

### Town Typlogy and Prioritisation

- Provides a high level indicator of what facilities (minimum) to provide at each settlement level
- Prioritisation also indicates possible phasing order in which investment of facilities at different location should occur
- Can lead to cost savings through targeted rational provision of services to rural areas







ngiya thokoza!

ro livhuwa!

dankie!

ke a leboga!

enkosi!

inkomu!

thank you!

ago linkuma

ke a leboha! siyabonga! hgiyabohga!

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