



science  
& technology

Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA

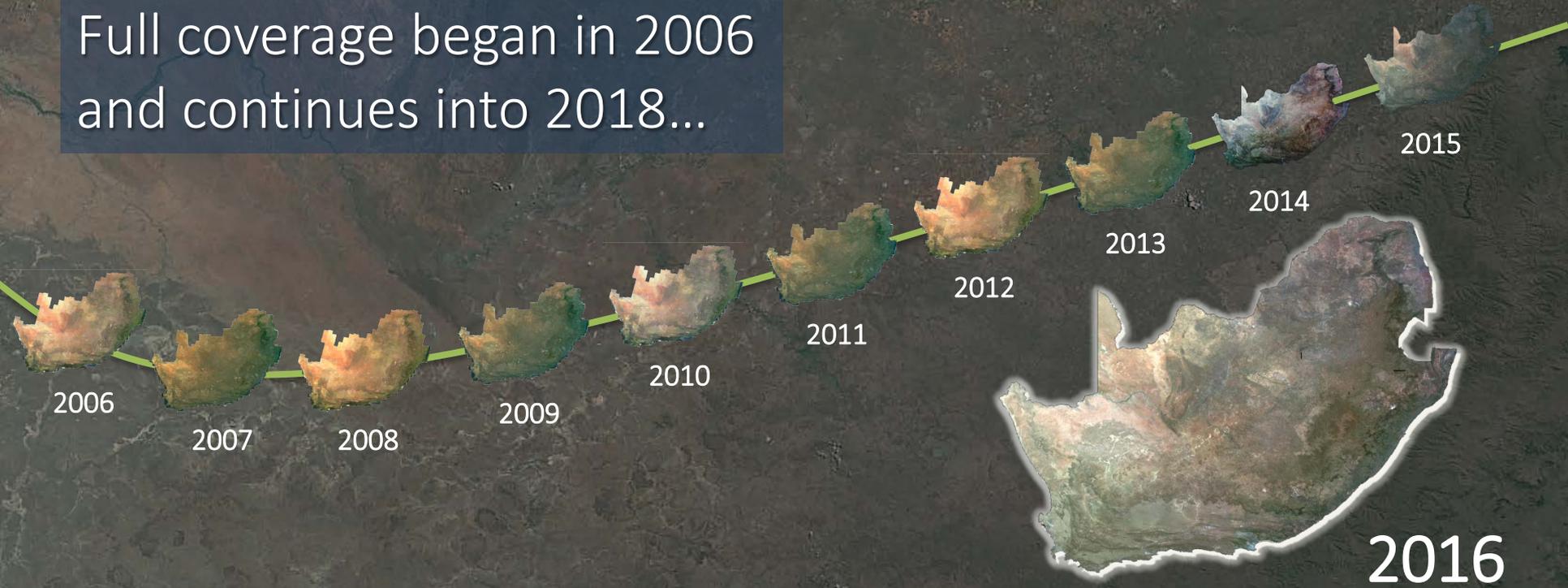
# Towards understanding of human settlement growth in South Africa

Naledzani Mudau, Thomas Tsoeleng, Morwapula Mashalane  
Human Planet Initiative, University of Twente, Enschede,  
12-15 September 2017

# Introduction

- ❑ In South Africa, urbanisation has increased from 52% in 1990 to 62% in 2011 (South African Institute of Race Relations, 2013)
- ❑ Urbanisation in South Africa is attributed to abolishment of apartheid pass laws, rural-urban migration and natural population growth
- ❑ Urbanisation in South Africa results in urban sprawl , proliferation of informal settlements and inequality
  - ✓ Effective and Sustainable urban planning
  - ✓ Mapping and monitoring of human settlement developments

Full coverage began in 2006  
and continues into 2018...



# Human settlement developments

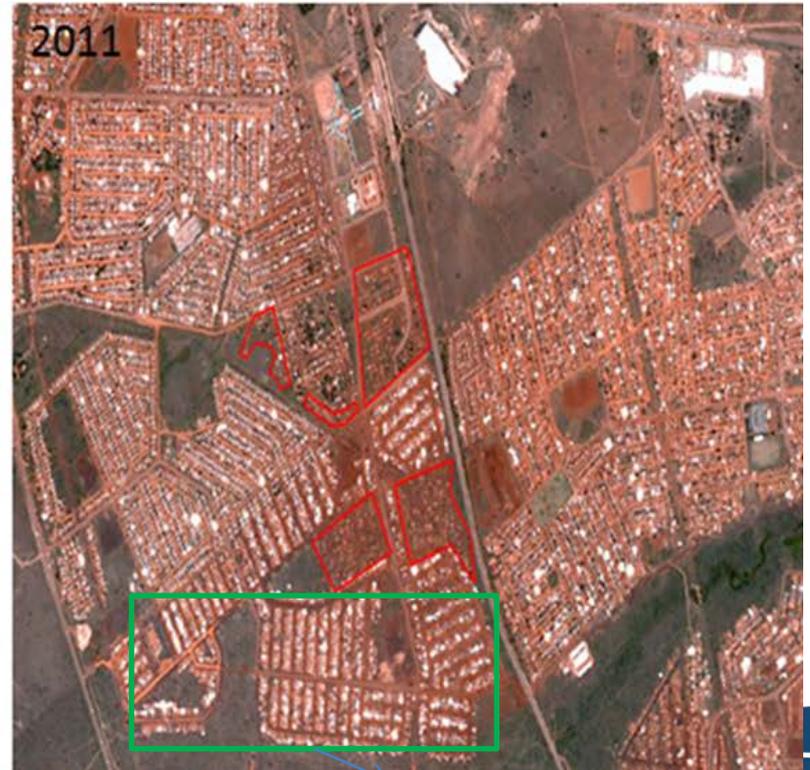
2007



2014

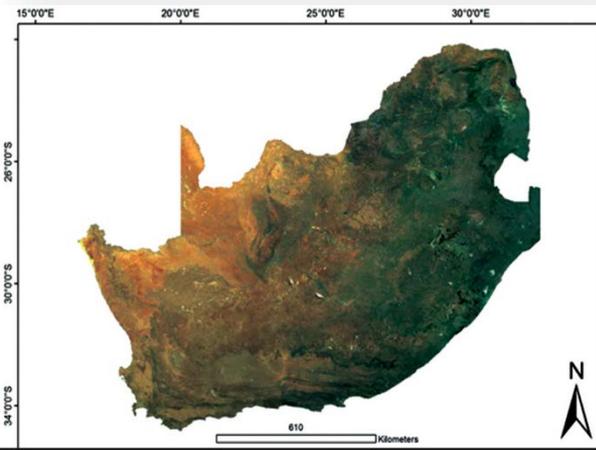


# Transformation of settlements

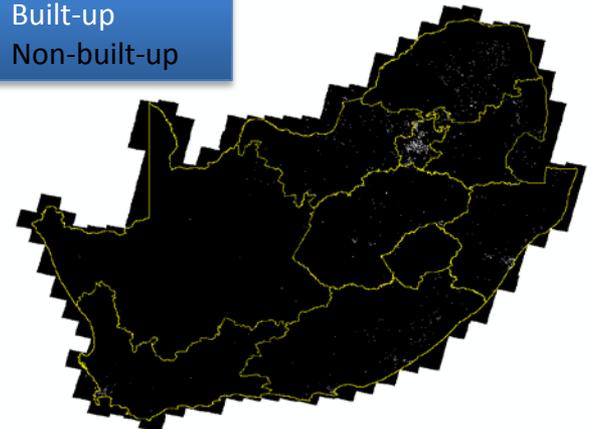


Government subsidised housing

# National Human Settlement Layer



Built-up  
Non-built-up

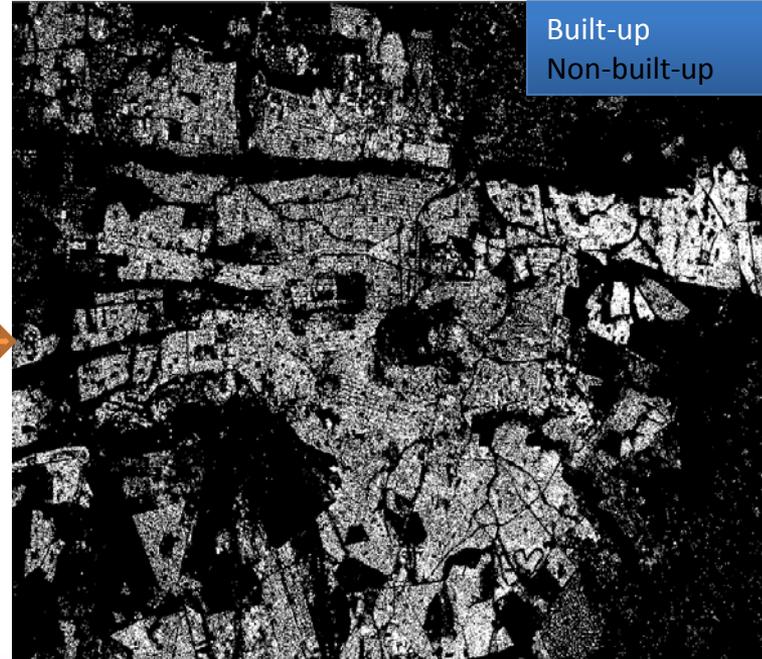


# The Nation Human Settlement Layer

SPOT 5 Natural Colour



Human Settlement Layer



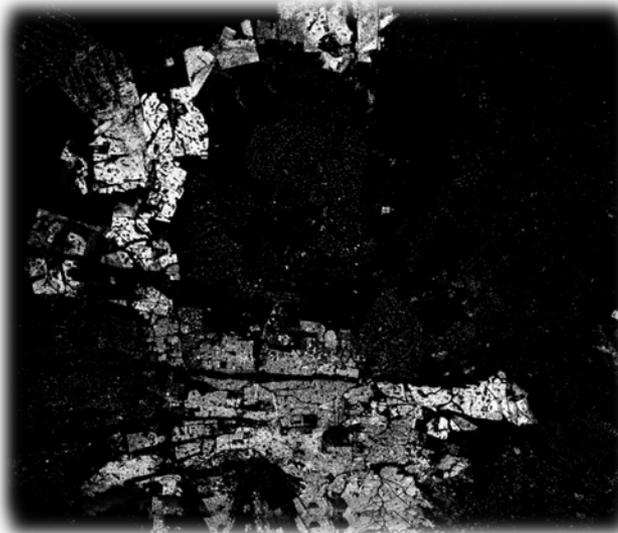
City Of Tshwane

# National Human Settlement Layer

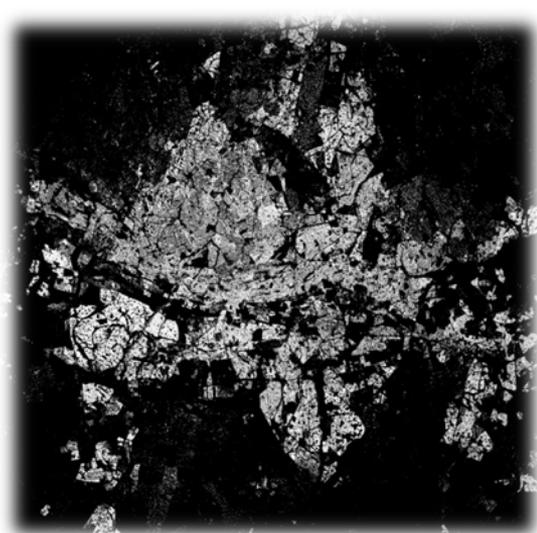
Bloemfontein



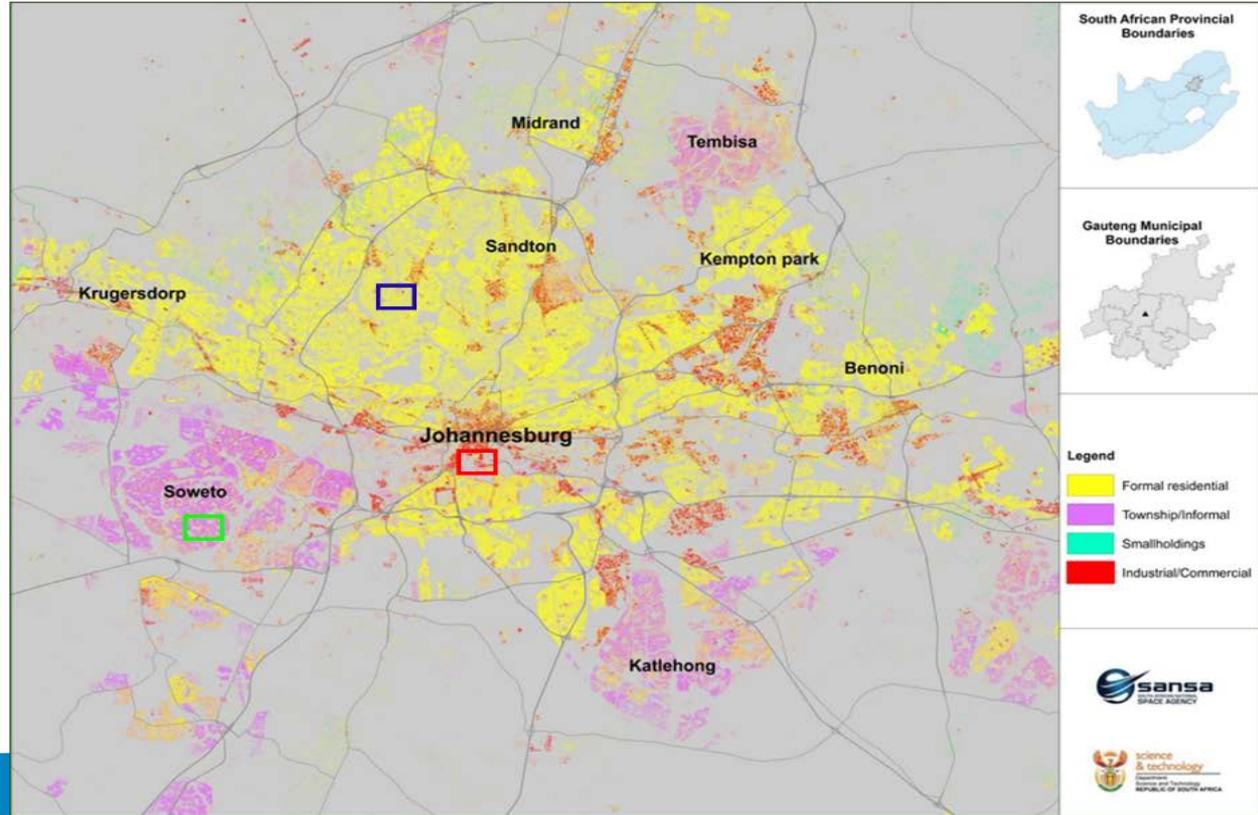
Pretoria



Johannesburg

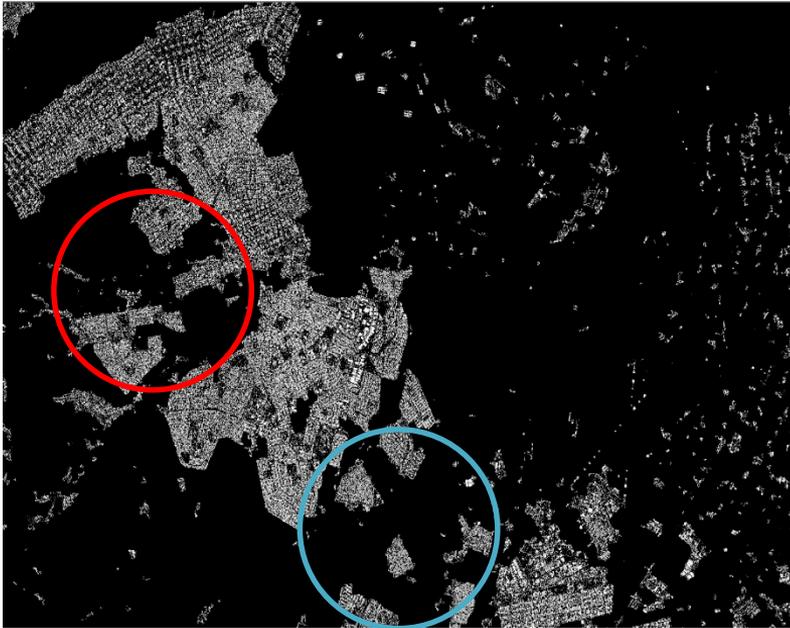


# Classification of human settlements

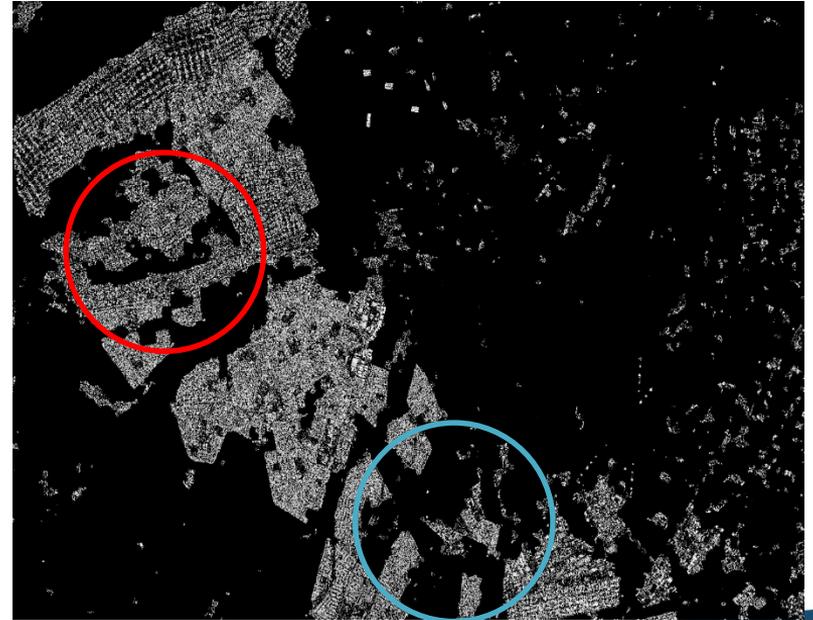


# Human settlement growth assessment

2007



2014



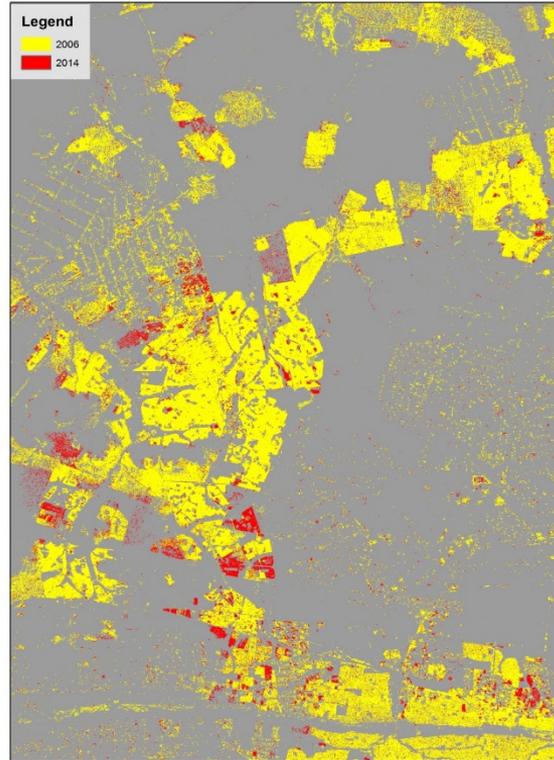
# 2007 -2014 urban growth



SPOT 5: 2014

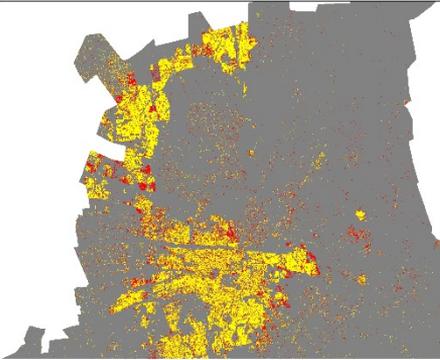


Change map

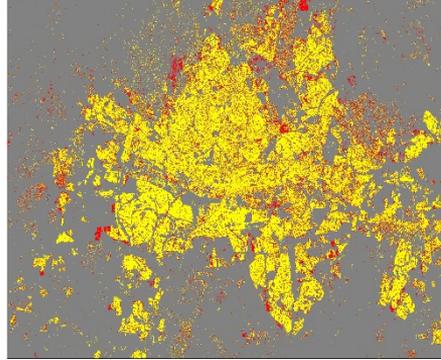


# 2007 -2014 urban growth

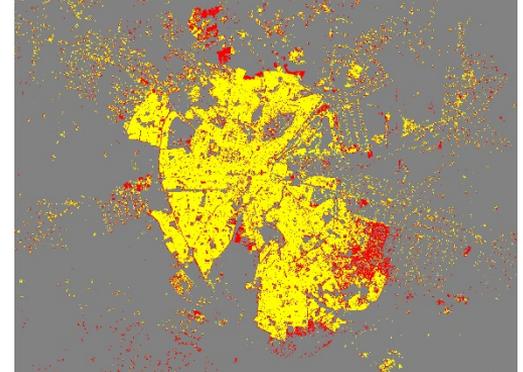
Tshwane



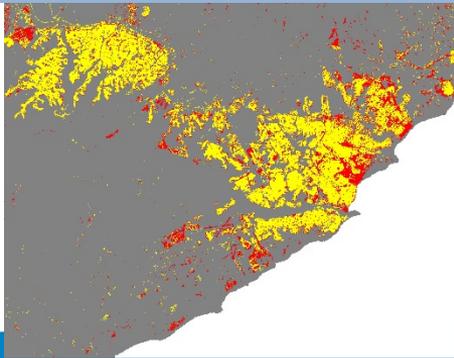
G. Johannesburg MA



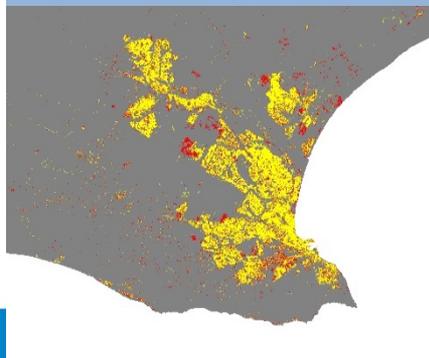
Mangaung



Buffalo city



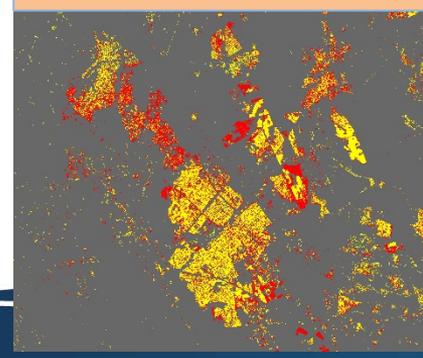
Nelson Mandela Bay



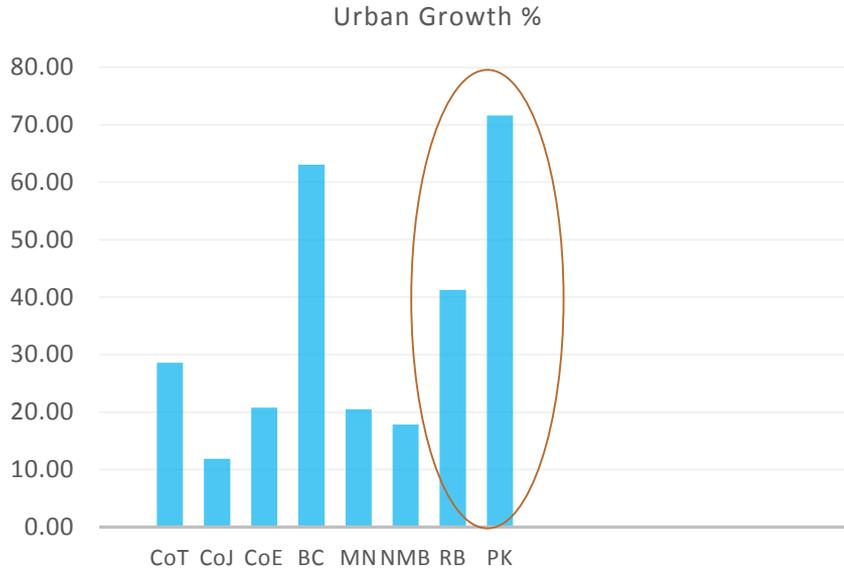
Polokwane



Rustenburg



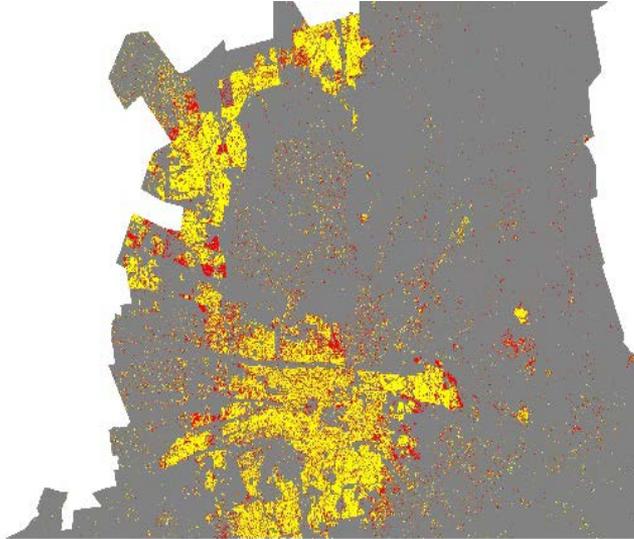
# 2007 -2014 Urban Growth



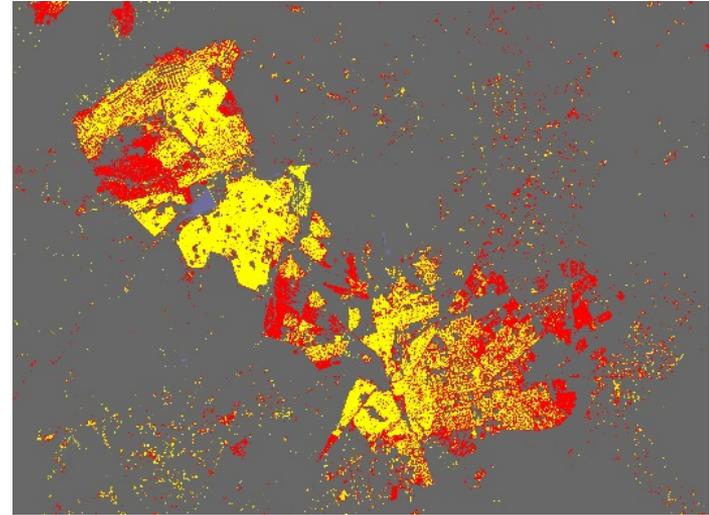
Municipality	Municipality	Urban Growth %
City of Tshwane	CoT	28.59
City of Johannesburg	CoJ	11.87
Ekurhuleni Metropolitan Municipality	EMM	20.79
Buffalo City	BC	63.07
Mangaung	MN	20.46
Nelson Mandela Bay	NMB	17.83
Northern Cape	NC	41.25
Polokwane	PK	71.58

# Analysis of Change

Tshwane municipality



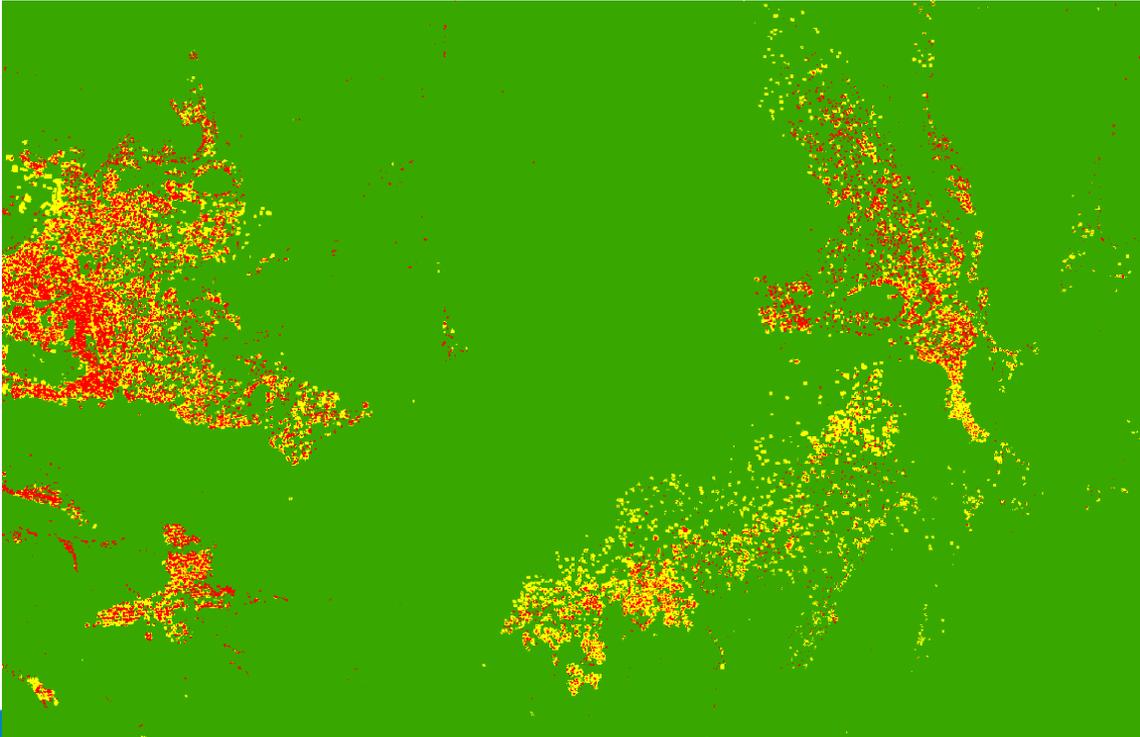
Polokwane Municipality



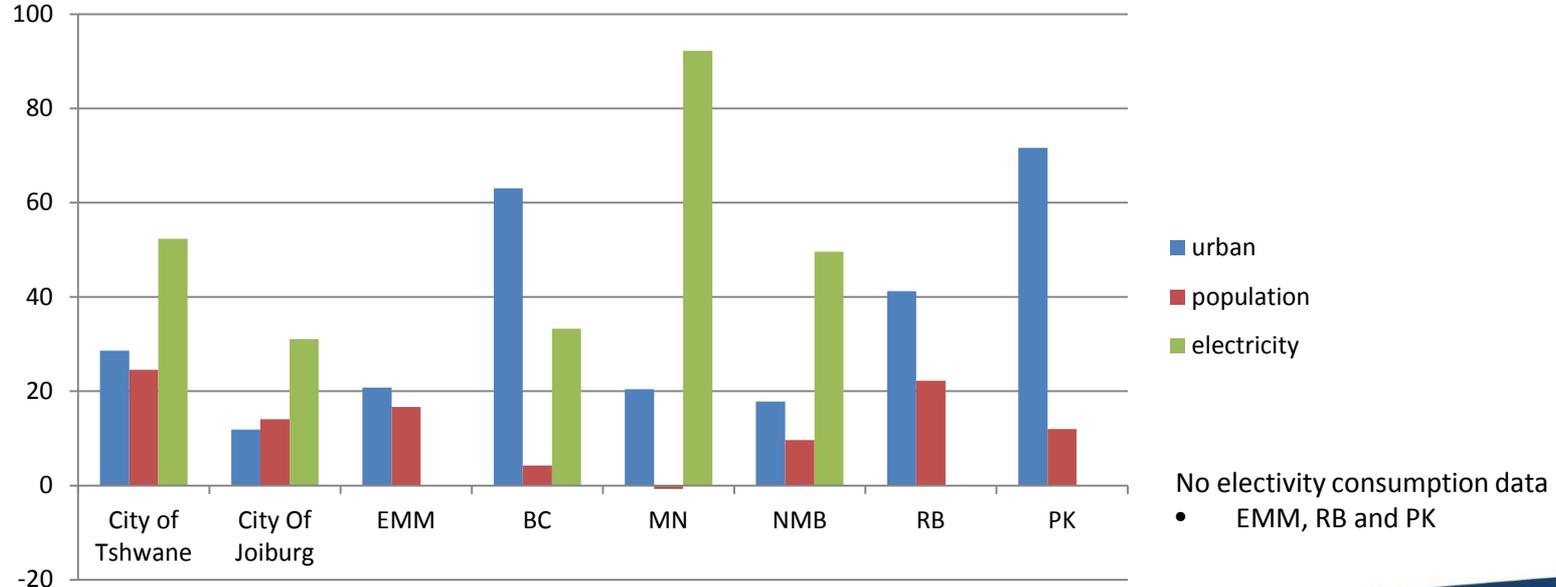
- More than 60% of change is in townships and informal settlements

# Analysis of change

Rural areas

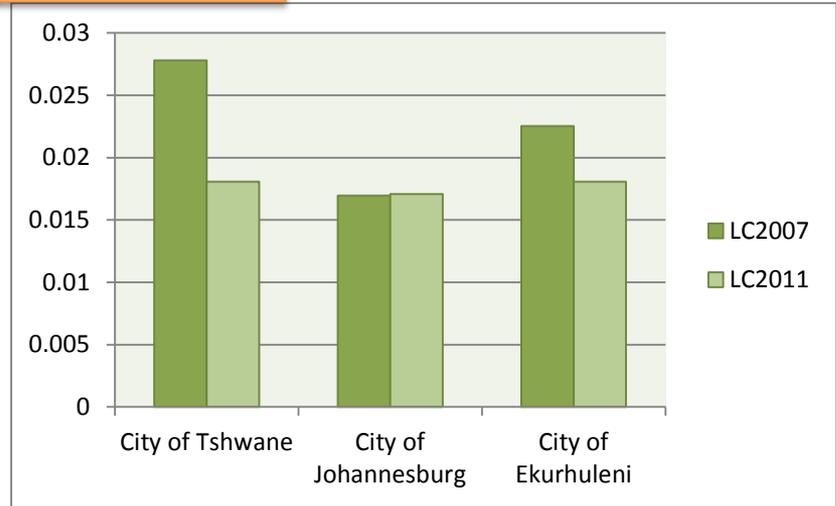
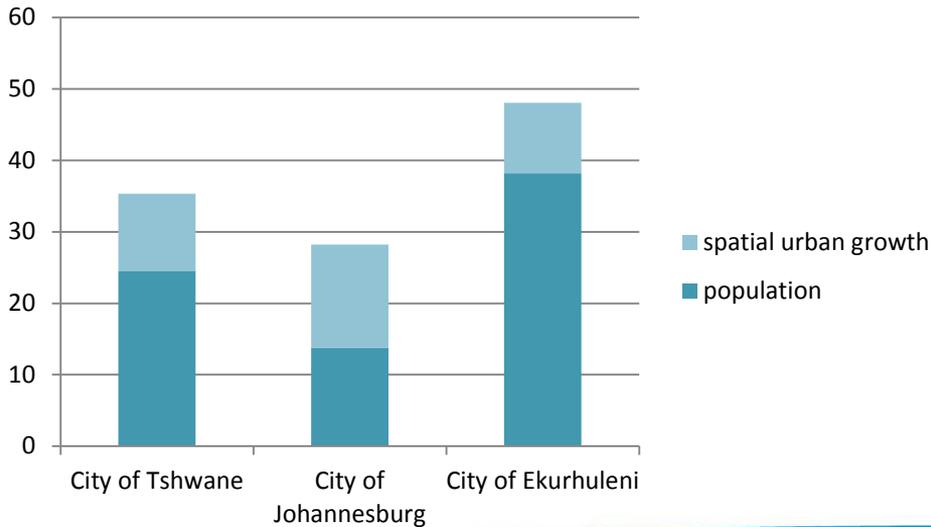


# Human settlement, population growth and electricity consumption



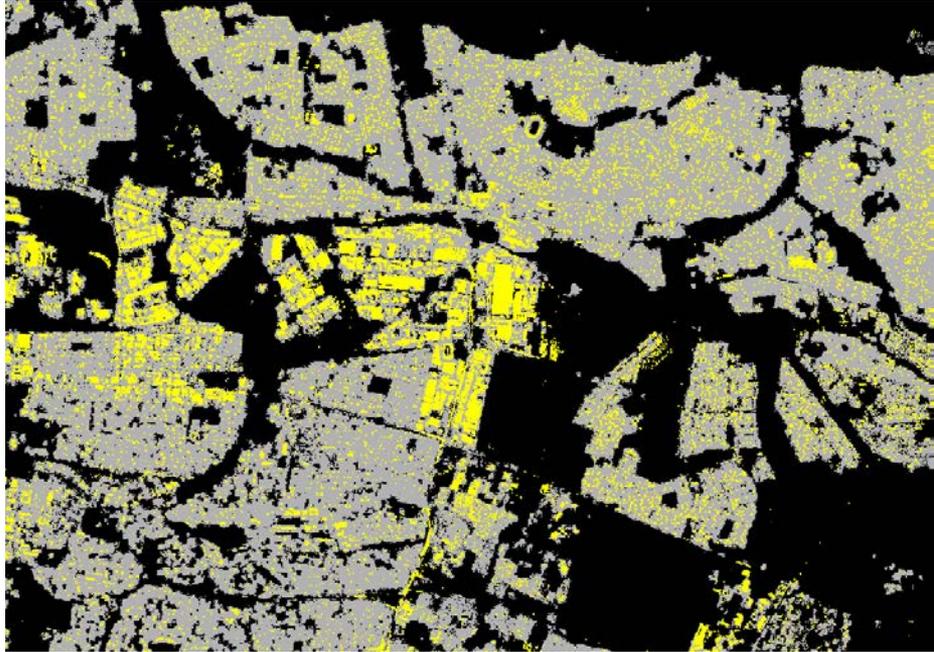
# Land consumption rate: 2007-2011

Case study: assessment of land consumption rate in Cities of Tshwane, Johannesburg and Ekurhuleni



# SPOT 6 Mapping

Tshwane: township



New Housing development project



# Informal settlement monitoring

Informal settlement detection



Informal structure mapping



# Need for human settlement data



## human settlements

Department:  
Human Settlements  
REPUBLIC OF SOUTH AFRICA



Organisation/Departments	Applications
National Department of Human settlement, provincial, district -local	Informal settlement upgrade planning and monitoring, low cost housing verification/progress assessment
Eskom	Electrification planning and load forecasting
Municipalities	Spatial planning and infrastructure development
Statistics South Africa	Population estimate and census planning
Independent Electoral Commission	Voting districts mapping/update
Housing Development Agency	Habitable land assessment
Department of Performance Monitoring and Evaluation	Performance monitoring of publicly funded projects/tracking government's investments in infrastructure projects
Municipal Demarcation Board	National demarcation boundaries update
Rand Water	Infrastructure monitoring and planning
Rural Development and Land Reform	Cartographic map update, land management
Department of Environment Affairs	Human settlement encroachment into protected areas
Department of Agriculture	Human settlement encroachment into agricultural land
Provincial Government Dept.	Informal settlement upgrade planning and monitoring, low cost housing mapping, etc



## agriculture, forestry & fisheries

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## rural development & land reform

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# Thank You

[NMudau@sansa.org.za](mailto:NMudau@sansa.org.za)

[www.sansa.org.za](http://www.sansa.org.za)