

**International Seminar On United Nations Global Geospatial  
Information Management**

**Geospatial Information, Earth Observations and  
the Urban SDGs**

6<sup>th</sup> – 7<sup>th</sup> November 2018  
Tribe Hotel, Nairobi, Kenya

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UN-HABITAT



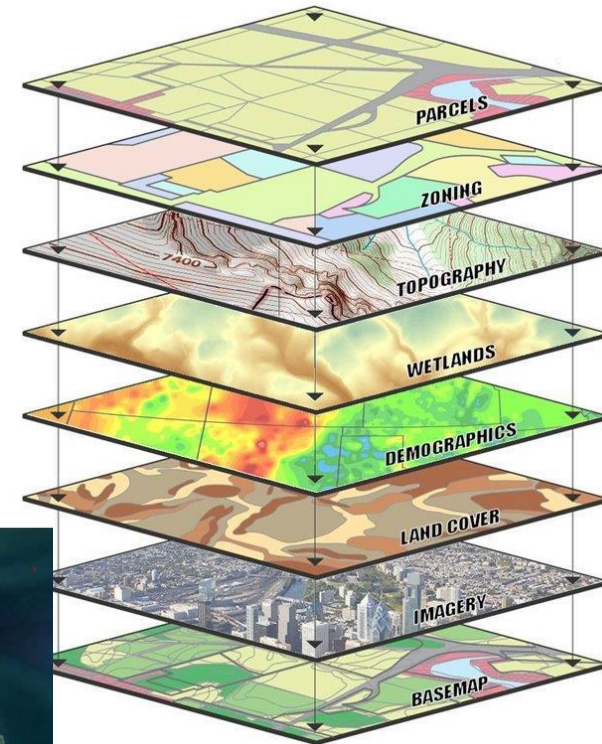
# Context

- > 50% of SDG targets have an urban component
- Measurement required at the local level, aggregation to national level
- Use of alternative/non-conventional data sources – surveys, spatial data/methods



# What GI and EO offer for Urban SDGs monitoring

- Cheap to implement methods producing accurate data
- Replicable and repeatable approaches
- Ability to monitor and track human settlements trends over time
- Ability to collect data in hard to reach areas – disaster struck, war torn
- Important baseline layers in places with no data



# Geospatial information, EO and SDG 11 indicators

- All indicators – SDG or otherwise – have a link to space, but some rely directly on EO data and GI methods for measurement;



11.1.1 characterization of settlements to formal / informal based on physical character



11.2.1 – mapping transport networks, location of public transport facilities, habited and serviced areas



11.3.1 - extraction of information on settlements, form/character and urban growth patterns



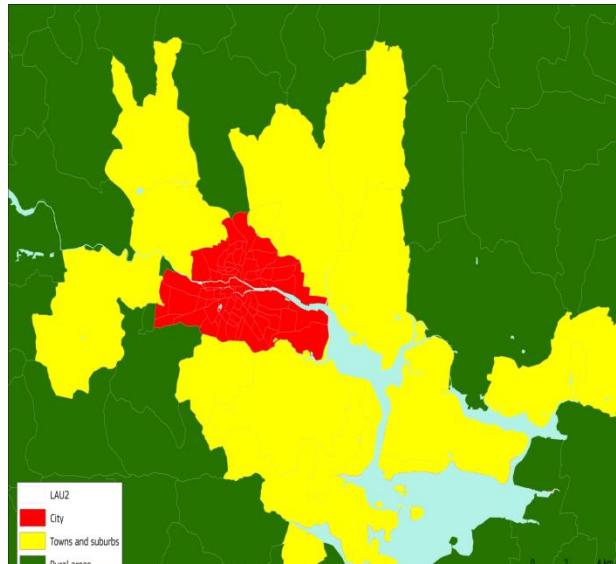
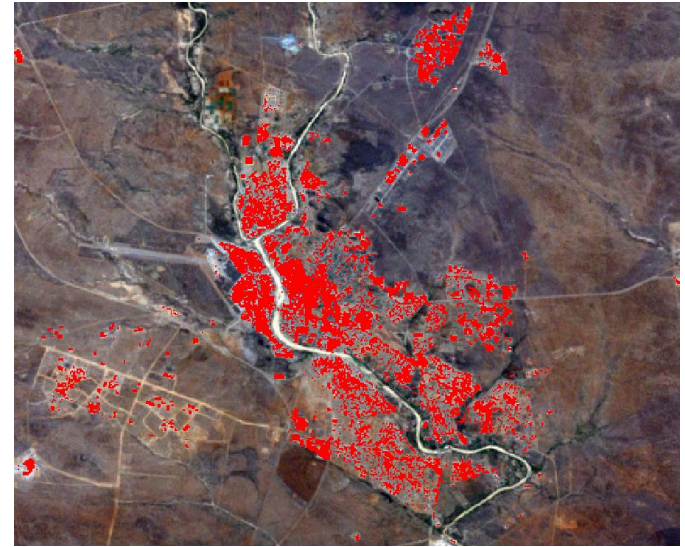
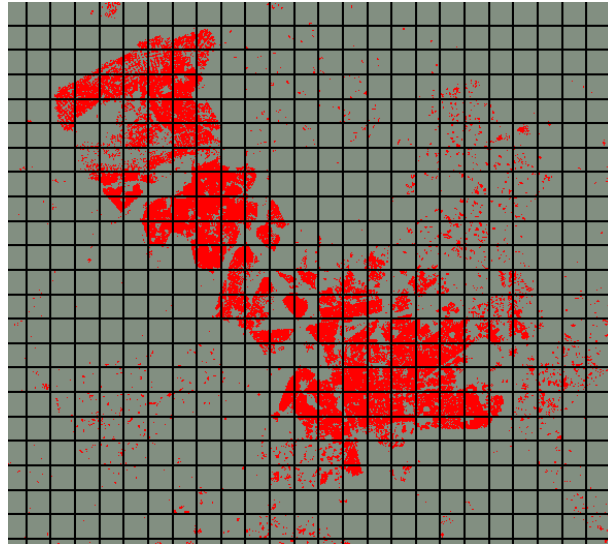
11.5.2 – mapping of effects of disaster on key infrastructure



11.7.1 – extraction of data on location of open spaces, sizes and distribution, serviced areas

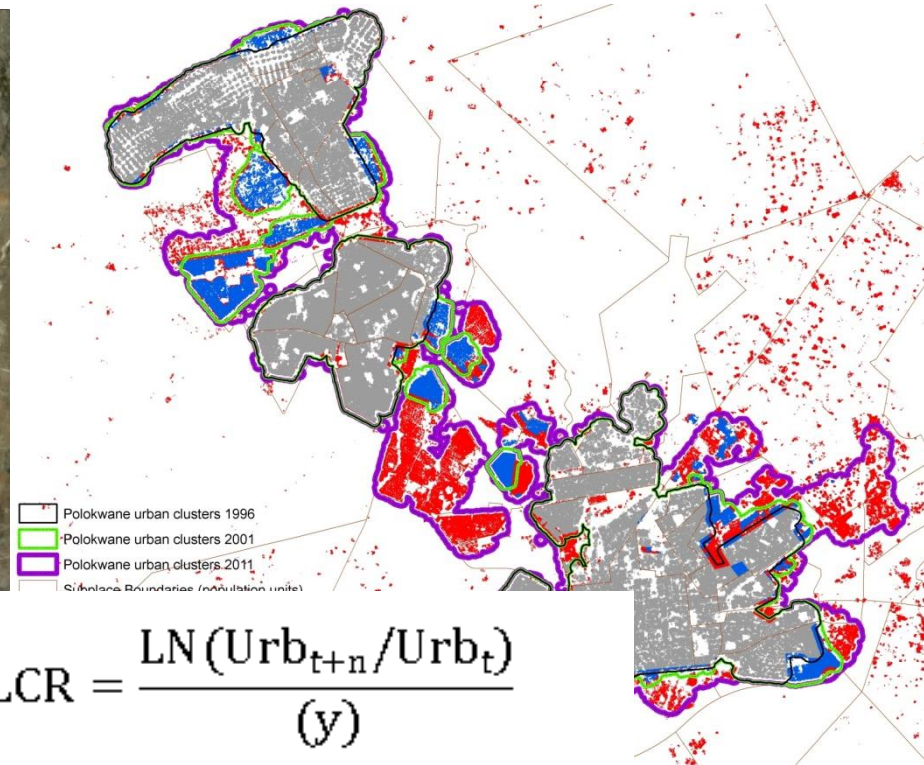
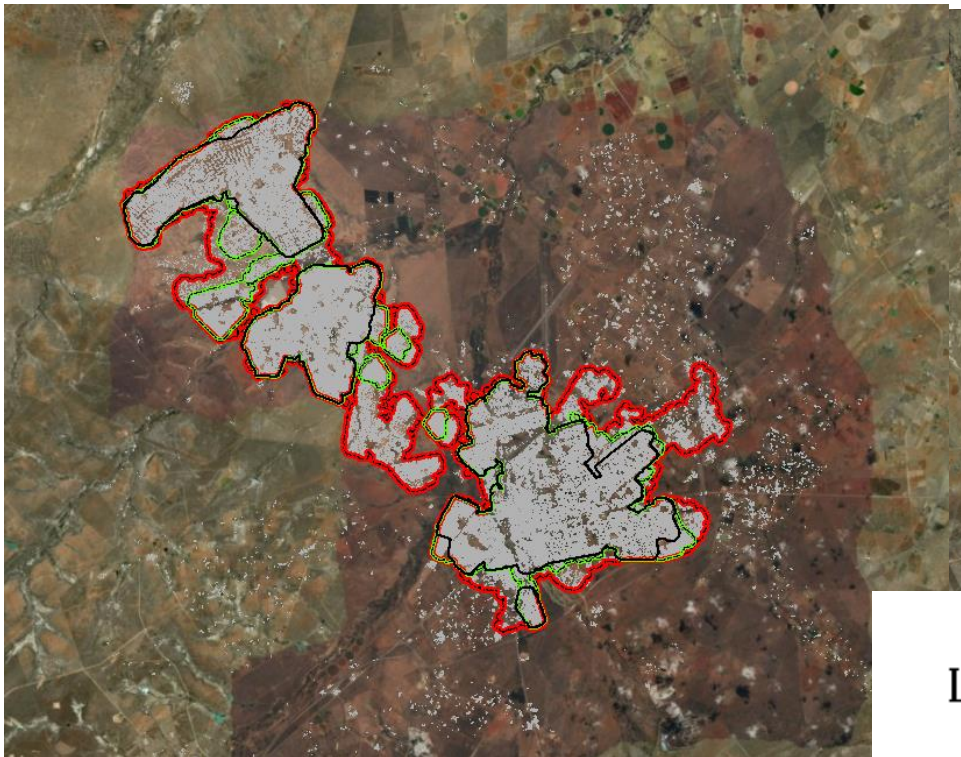
# Settlement characterization / delineation

Current global city definition methods rely on GI & EO data and methods



# Measuring settlements land consumption fully relies on GI & EO

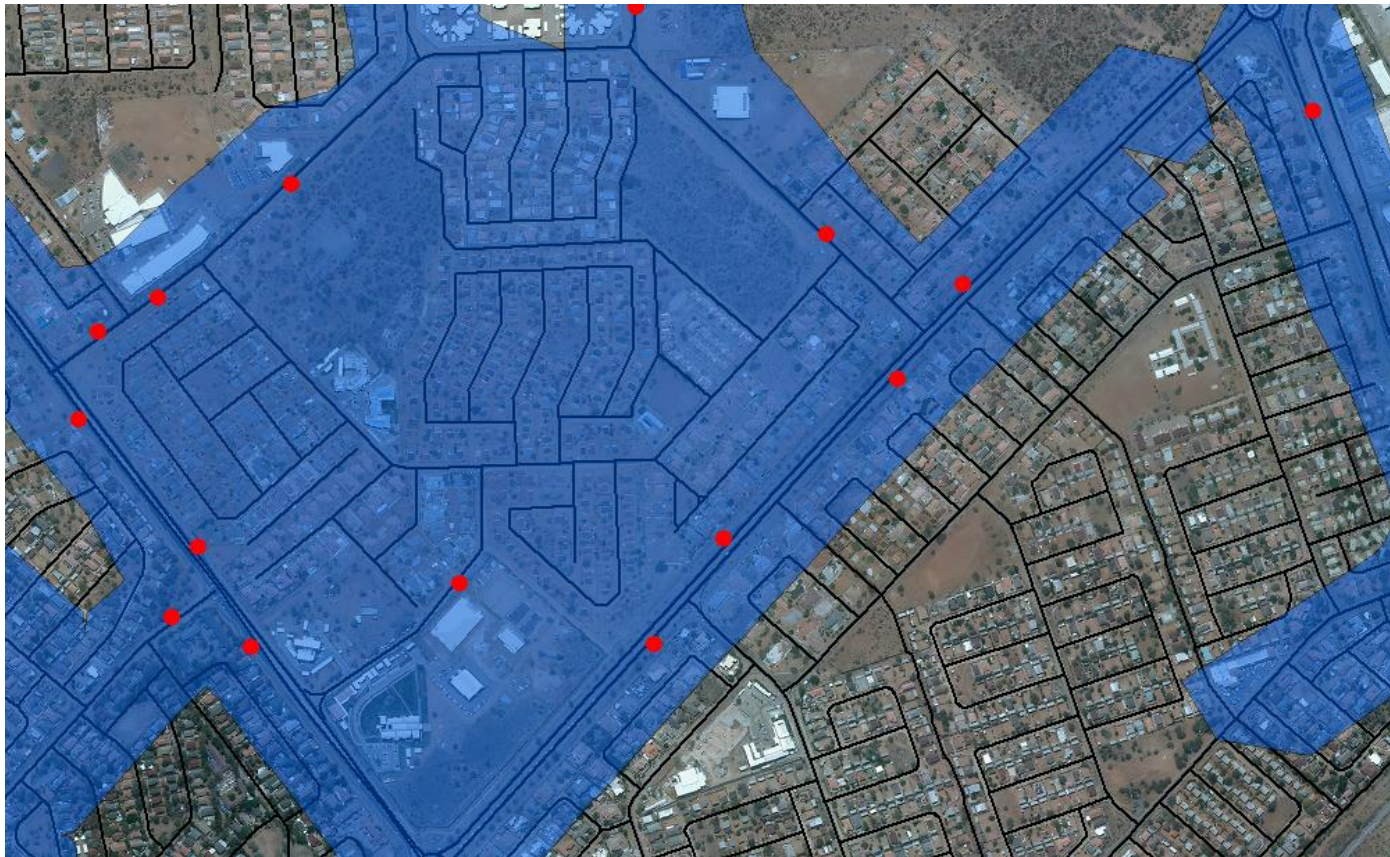
- **Indicator 11.3.1:** Ratio of land consumption to population growth rate



Tier II indicator thanks to advances and adoption of GI & EO data and methods

# Measuring access to public transport heavily relies on GI & EO

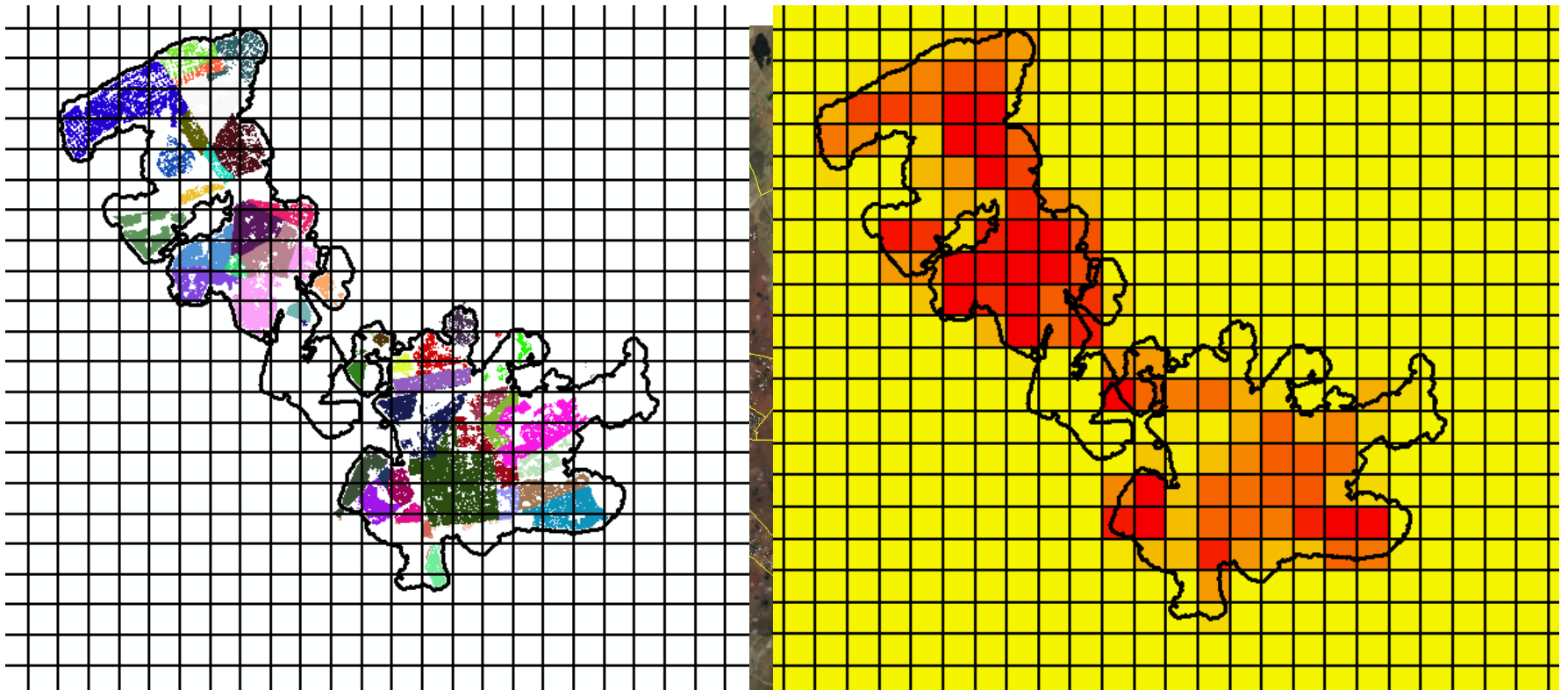
- **Indicator 11.2.1** – Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities



Integrate spatially disaggregated population data to determine level of access

# GI and EO are key to disaggregating population data

- All spatial SDG 11 indicators require highly disaggregated population data





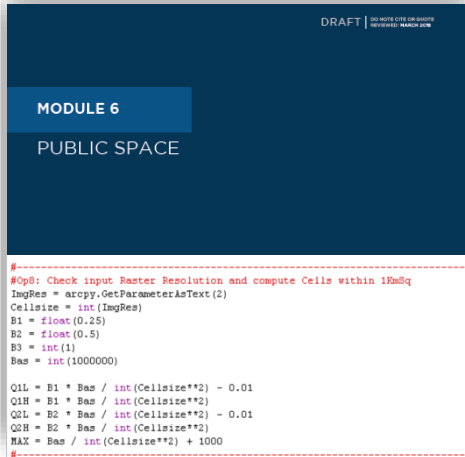
## However, more is needed.....

- Need higher resolution alternative data to understanding quality of urban areas, facilities, spaces



- High resolution population data key for all indicators – the small the spatial unit the better

# What we are doing



Developing methodologies, tools, programmes

## C. RESULTS AND INTERPRETATION

- Between 2001 and 2017, the rate of land consumption in Francis Town was 1.27 times that of population growth. In actual numbers, between 2001 and 2017, the estimated population of Francis Town urban extent increased by 28,128 (from 69,737 to 97,865 people) against an increase in newly urbanized land of 10.74 Km<sup>2</sup> recorded over the same period (20.06 to 30.80). This translated to an increase in the available urban land per person in the urban extent. Over this period, the land consumption per capita increased from 287.6 m<sup>2</sup> to 314.7 m<sup>2</sup>, equivalent to an annual increase of 0.29%.
- Based on these figures, Francis Town is experiencing a fast rate of urban sprawl, characteristic of low density developments. The incremental growth of several satellite neighbourhoods to the core urban cluster – linked by main transport thoroughfares – is evident from satellite imagery analysis (figure 2)
- The outwards growth of Francis Town, if not properly planned is likely to affect the city authorities' ability to effectively provide basic urban services, especially where sparse settlements which do not meet the minimum standards for basic services.
- The growth trend recorded by Francis Town to Zimbabwe is attracting more satellite settlements in the main cluster is attracting more satellite settlements recorded in these directions in the future growth is accompanied by

LCRPGR	Built up area per capita (m2/person)	
	T1	T2
6.178927325	150.2558828	179.0422644
1.078099952	119.6877998	137.7442962

Supporting countries in data generation / compilation & results interpretation



Platforms to use data for informed decision making eg's CPI, LUOs

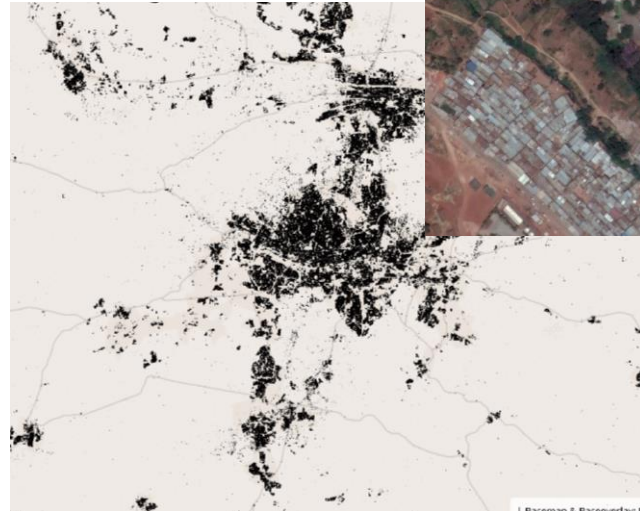


- Technical skills for countries / NSOs

- Comparing performances of cities / countries & best practice transfer
- We are eyes and ears for countries to emerging opportunities

# What is needed

- High resolution imagery
- Increased resolution of global databases through collaboration
- Sharing of technology – machine learning techniques, codes
  - Data ownership is key for countries
- Disaggregated population data
- Guidance and standards – competition is good for science, but need proper coordination
- Policies for integration of EO and GI data to official statistics
- Support in providing technical skills, systems support to countries



```
@@ -145,6 +145,10 @@ export class ToolbarDropdown ex
tends React.Component<
145     this.state = { clientRect: null }
146   }
147
148 + private get isOpen() {
149 +   return this.props.dropdownState === 'open'
150 + }
151 +
148     private dropdownIcon(state: DropdownState): Octic
onSymbol {
149     // @TODO: Remake triangle octicon in a 12px ver
sion,
150     // right now it's scaled badly on normal dpi mo
nitors.
151
@@ -249,6 +253,13 @@ export class ToolbarDropdown ex
tends React.Component<
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**THANK YOU**

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