International Seminar On United Nations Global Geospatial Information Management

Geospatial Information, Earth Observations and the Urban SDGs

6th – 7th November 2018
Tribe Hotel, Nairobi, Kenya

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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
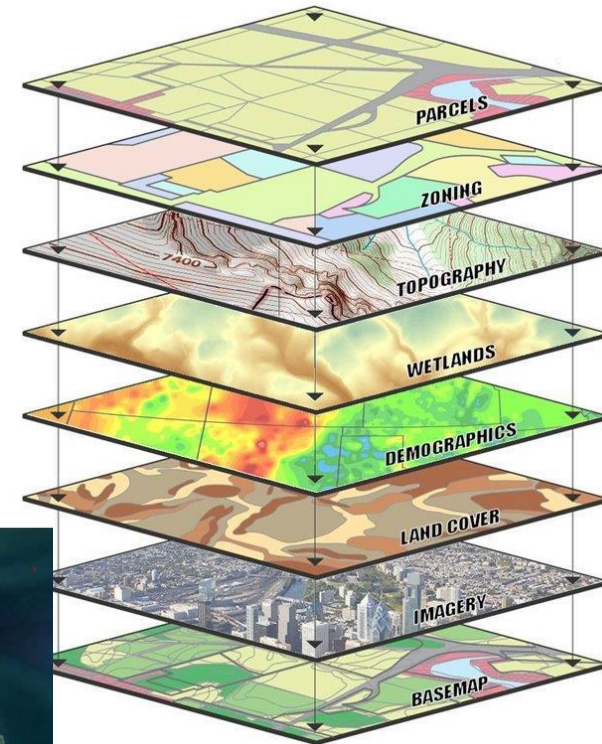
Geospatial information, EO and SDG 11 indicators

- 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

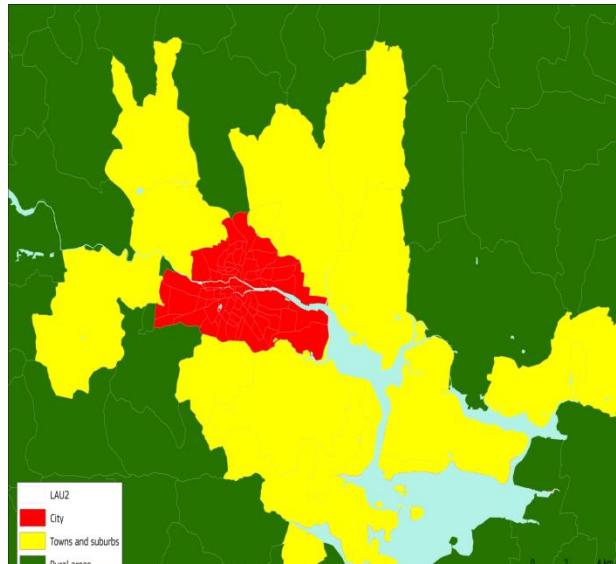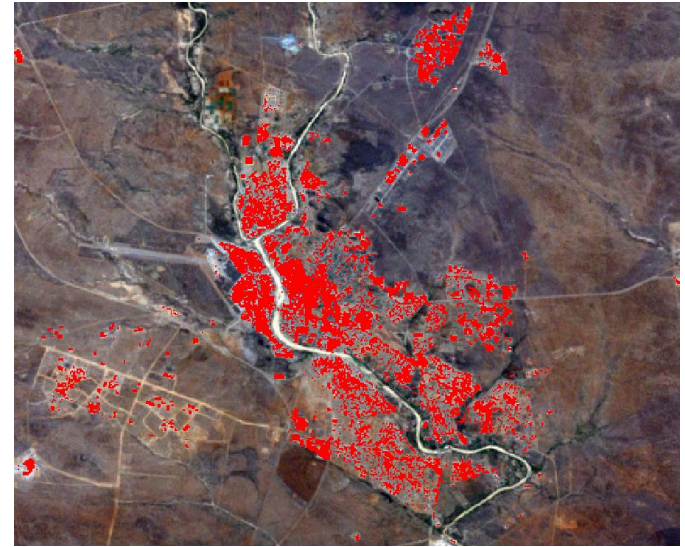**11.3.1 - extraction of information on settlements, form/character and urban growth patterns**
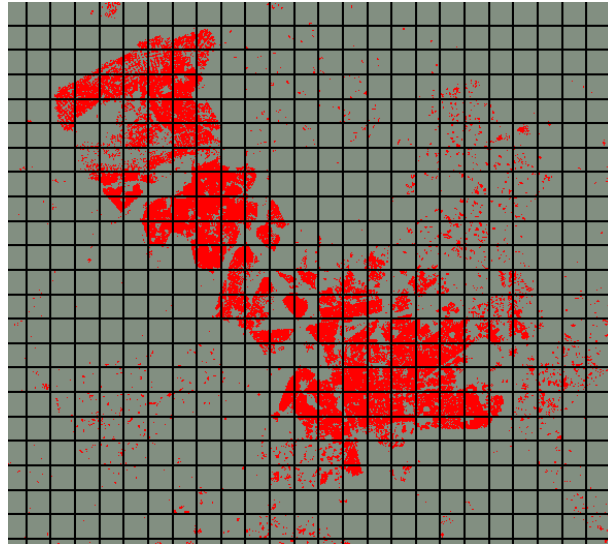
11.5.2 – mapping of effects of disaster on key infrastructure

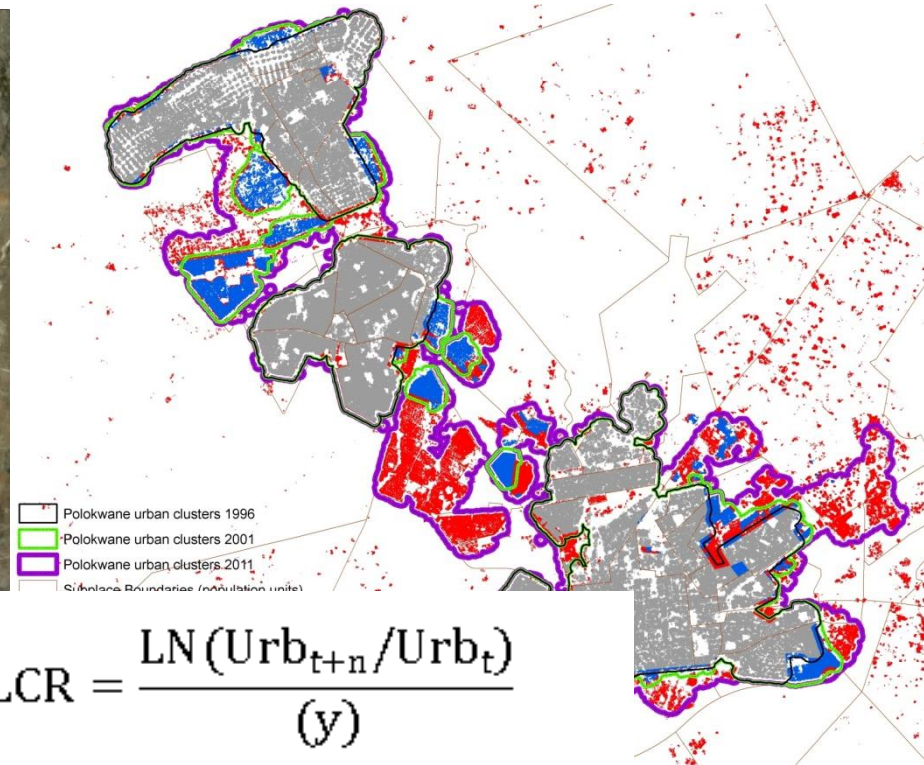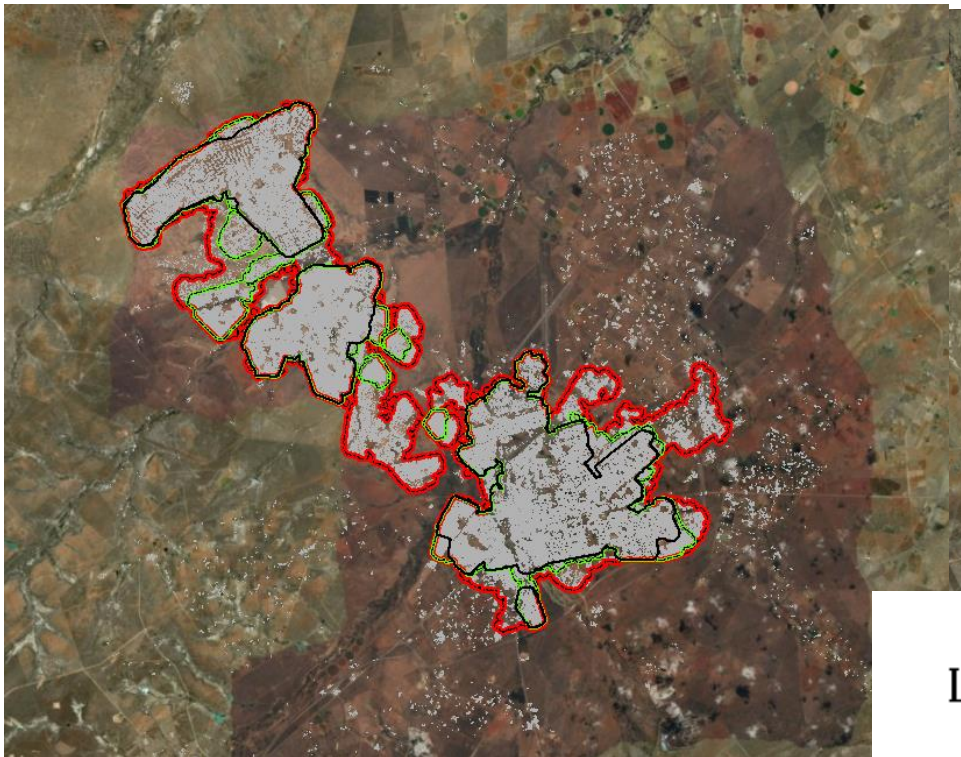**11.7.1 – extraction of data on location of open spaces, sizes and distribution, serviced areas**

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

Legend:
- Polokwane urban clusters 1996
- Polokwane urban clusters 2001
- Polokwane urban clusters 2011
- Subplace Boundaries (population units)

$$LCR = \frac{LN(Urb_{t+n}/Urb_t)}{(y)}$$

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

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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
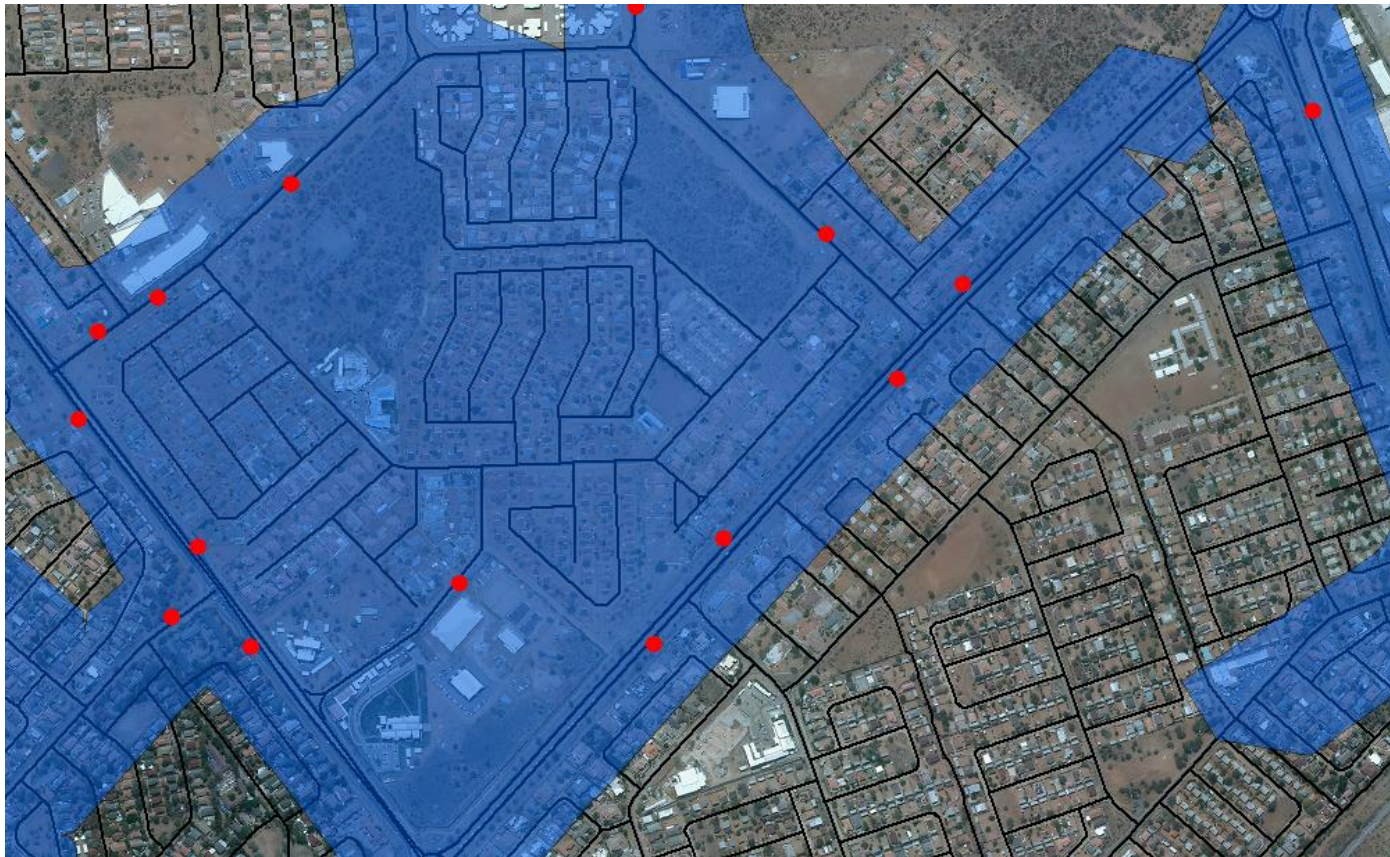
Integrate spatially disaggregated population data to determine level of access

GI and EO are key to disaggregating population data

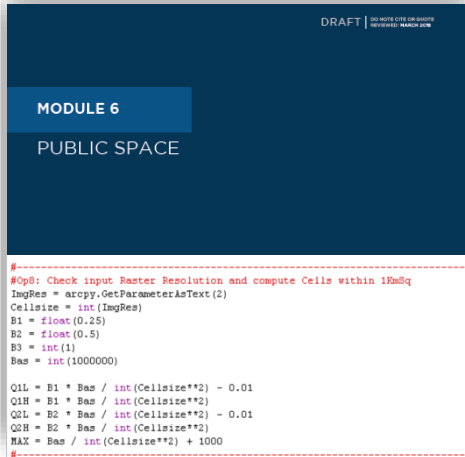- All spatial SDG 11 indicators require highly disaggregated population data
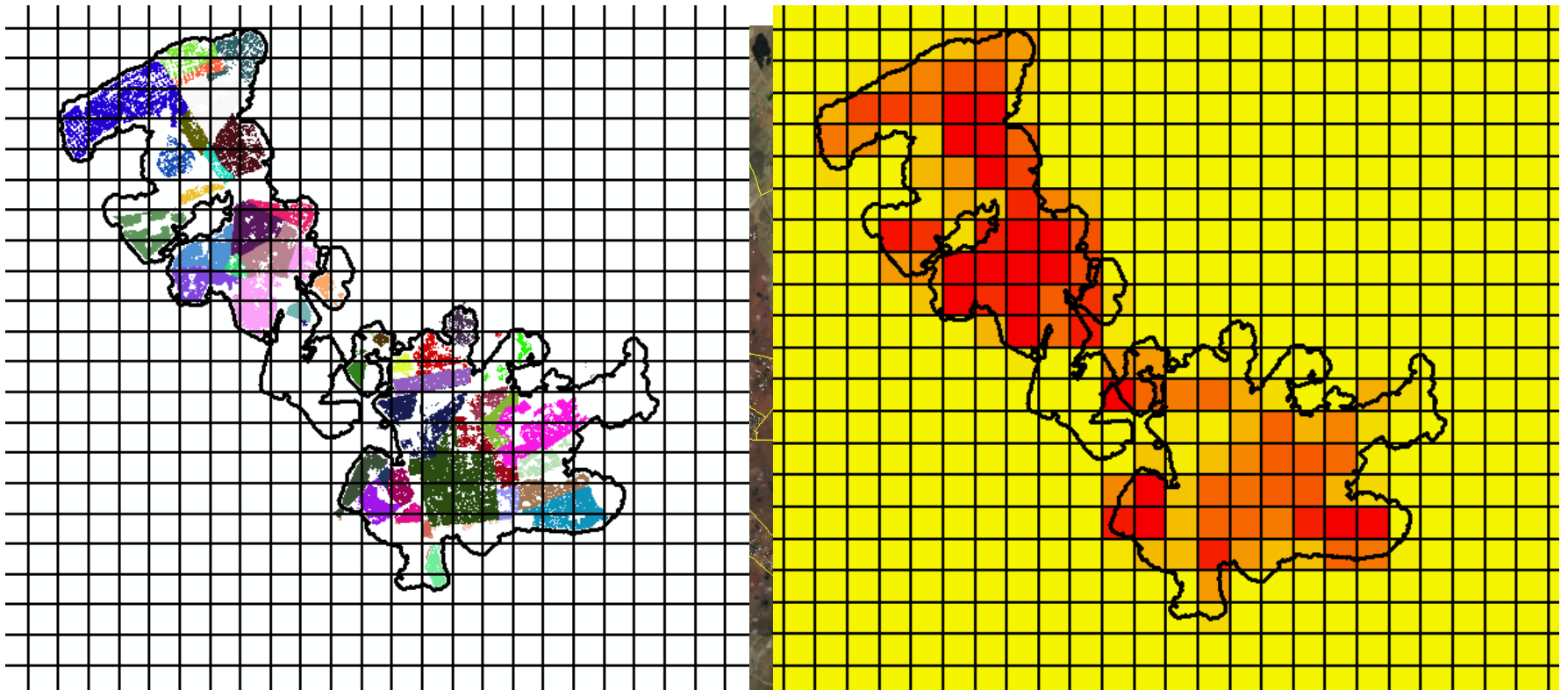
However, more is needed…..

- 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

Supporting countries in data generation / compilation & results interpretation

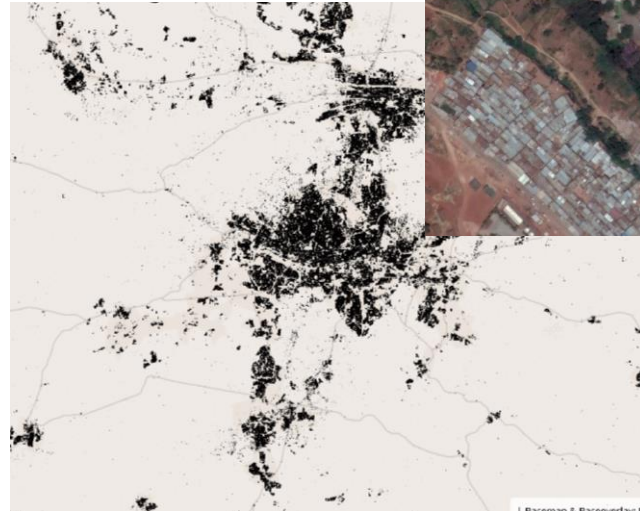Platforms to use data for informed decision making egs CPI, LUOs

- 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

THANK YOU

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