Bigdata and implementation of Goal 11 targets

Experiences from UN-Habitat

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UN-Habitat at a glance

**Mandate**
To promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all.

**Focus**
To promote transformative change in cities and human settlements through knowledge, policy advice, technical assistance and collaborative action to leave no one and no place behind.

**Data**
Our work is anchored on rigorous research and evidence.
SDG 11, *10 Targets.*
Make cities and human settlements inclusive, safe, resilient and sustainable.

- Housing and slums
- Suitable transport
- Participatory planning
- Cultural heritage
- Disaster and risk reduction
- Air quality and waste management
- Public spaces
- Rural-urban and regional planning
- Mitigation of climate change and resilience
- LDC support - Buildings
Bigdata and SDG 11 applications

For any smart city, big data lies at its core of technological innovations.

- Smart-traffic decision system depends on big data analytics.
- Waste management
- Big data for public safety management.
- Air quality monitoring
- Big data for smart decision making for spending effectively on repairs, beauty, renovations, expansions etc.
- Health and happiness of the city
- Urban sprawl management and city planning
- Building energy efficiency (heating and lighting costs management)
- Transport services development
- Hyper-local weather forecasting
Grid-Level COVID-19 Risks Assessment at City Level

- DAU model assesses risks against:
  - Built-up area density
  - Population density
  - Settlement morphology
  - Basic Service availability
  - Risk accelerators – age, health status

- Grid level focus helps understand intra-city & intra-settlement risk variations
Slum mapping to assess COVID-19 vulnerabilities

Collaborative process with partners, slum residents

**What exists**
- Water point
- Public space
- Health facility
- Hand washing facility
- Communal sanitation facility (e.g., latrine)
- Communal kitchen
- Education facility
- Social hall / community centre
- Market
- Transport stops (matatus, bodas)

**Where is it?**

**Is it working?**

**Who manages/pays for it?**

COVID-19 Emergency Response
Facilities density mapping/heatmaps from Kibera, Nairobi

Villages with the highest concentration of facilities are Gatwekera, Kambi Muru and the lower Laini Saba. Ayany and the northern parts DC, Makongeni, Mashioni and Laini Saba have the least concentration of facilities.
The COVID-19 Preparedness and Response Platform


https://unhabitat.citiiq.com/
City profiles

NAIROBI | KENYA
Total population (2018): 3,897,078 (15% of 25,910,342)

Prevailing urban conditions
Access to basic services
- Access to safe water: 88%
- Access to sanitation facilities: 30%
- Access to electricity: 45%

Housing conditions
- Overcrowding: 38% (1.6 M)
- 44%: Average household size is 4 people

Health system
- 0.6: Number of hospital beds per 1,000 people
- 13: Number of hospital beds per 100,000 people

COVID-19 vulnerability level
- Low risk areas: 37% (1,644,766)
- Medium - High risk areas: 35% (1,556,126)
- High - Very high risk areas: 28% (440,892)

Source: UN-Habitat - Global Urban Indicators Database

COVID-19 vulnerability level
Based on a grid-level analysis of built-up area density, population density, and the prevailing preventive and governance structures, the city of Nairobi residents face varying COVID-19 risk levels.

Source: Global Urban Indicators database
Main challenges

- Much of the big data with the most potential for public good is collected by the private sector. Public-private partnerships are key.
- In developing cities, the reality is that operations are uncoordinated and data capture is still a heavy manual process.
- Scale up of technology and pricing and regulation.
- Data aggregation for nations with many cities——quality assurance.
Thank You

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