IDEA MAPS Network

Overview of IDEAMAPS

Caroline Kabaria, PhD
Associate Research Scientist
African Population & Health Research Center (APHRC)
Nairobi, Kenya

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1 in 4
African will live in slums by 2030

Currently, 1 billion people are estimated to live in slums and informal settlements worldwide

Many of them are not visible in the data used for policy and decision making

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Where are slums and informal settlements located?

What are the main priorities for improvement?

How can we use innovative digital technology to support these changes?

Photo: Johnny Miller, https://unequalscenes.com/

What

An integrated data ecosystem that enables **routine**, **accurate** mapping of slums, informal settlements, and other deprived areas across LMIC cities

www.ideamapsnetwork.org

IDEAMAPS concept paper: https://doi.org/10.3390/socsci9050080

Earth Observation and IDEAMAPS paper: https://doi.org/10.3390/rs12060982

Origin story

✓ Most accurate & context-relevant
✗ Does not scale across all cities

✓ Reflects social characteristics
✗ Slum HHs ≠ slum areas

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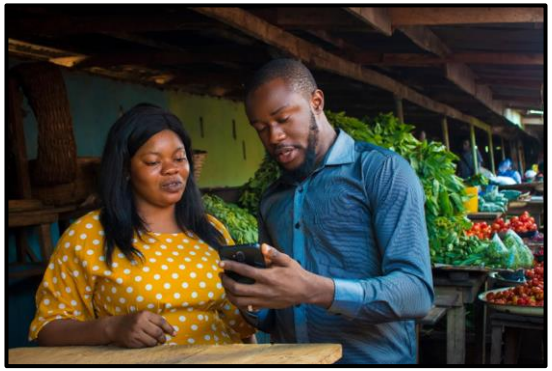
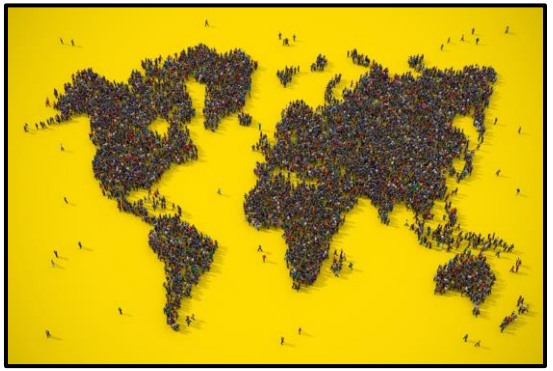
✓ Scalable across cities, repeatable
✗ Often divorced from local context

✓ Local expert (dis)agreement
✗ Does not scale across cities

Combining “slum” mapping approaches

Field Mapping using GPS or drawing on printed imagery. Often performed by residents to generate data for planning and advocacy.





Census & Survey approaches use household-level data to classify “slum” households, then aggregate. An area with >50% “slum” households is a “slum” area.

Computer models using AI or machine-learning methods and satellite imagery. Requires training data of slum/ non-slum areas.

Digitising imagery is done manually in GIS software, some times by a person unfamiliar with the local context. Digitized imagery is often used to train computer models.

Overcrowding

Poor garbage disposal

Poor drainage

Flooding

What do we envision achieving together?

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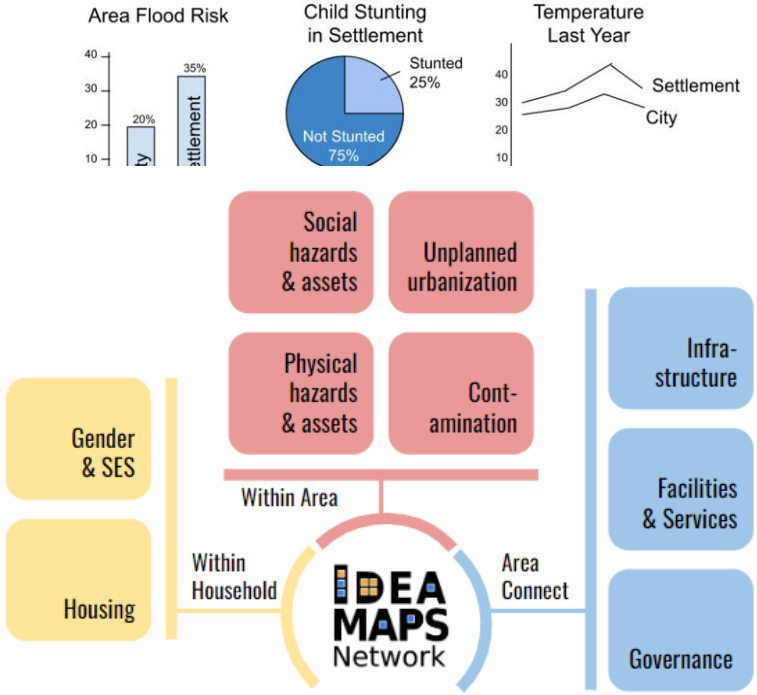
Project partners, communities, governments, researchers in Lagos, Kano and Nairobi

Improved data on slums and deprived areas

Improved access to data and characterisation of places and priorities

Characterisation of slum areas



Domains or Deprivation paper:
https://doi.org/10.1016/j.compenvurbsys.2022.101770

Data Ecosystem
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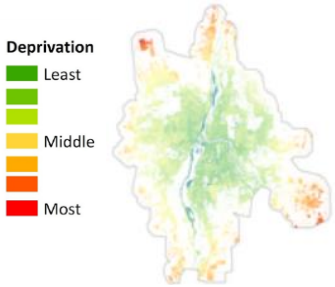
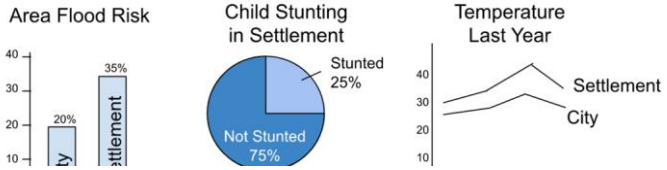
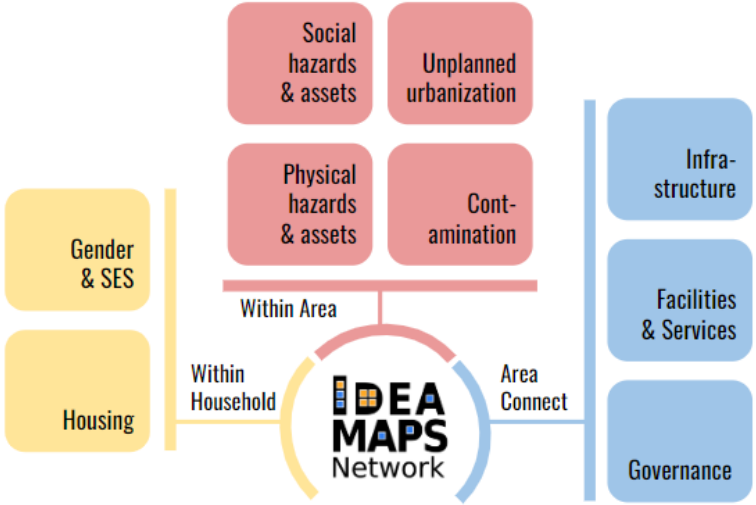
What we envision achieving together



Improved data on “slums” and deprived areas across the city; updated regularly

Characterisation of slum areas





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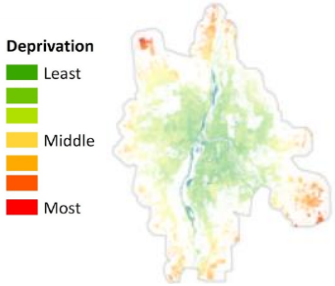
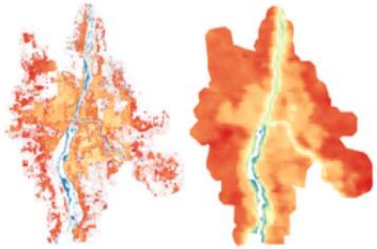
What we envision achieving together





Improved data on “slums” and deprived areas across the city; updated regularly

Improved data about assets & challenges at the community level; also updated regularly

Improved capacity to use and update the data

11 SUSTAINABLE CITIES AND COMMUNITIES

Actions & interventions to effect change

A just, equitable, & sustainable city that provides essential services for ALL

UKRI-EPSRC-DIDA
Networking Grant
May 2020 -
Apr 2021

Coordination Team

African Population and Health Research Center

WARWICK
INSTITUTE FOR GLOBAL SUSTAINABLE DEVELOPMENT

ITC
UNIVERSITY OF TWENTE.

UNIVERSITY of York

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

UNIVERSITY OF GHANA

UNIVERSITY OF Southampton

THE UNIVERSITY OF CHICAGO | Mansueto Institute for Urban Innovation

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Partners

jei JUSTICE & EMPOWERMENT INITIATIVES - NIGERIA

CERSGIS

Bill & Melinda Gates Foundation

Development Grant | Oct 2022 - Sep 2025

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IN DEED AND IN TRUTH

University of Glasgow

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

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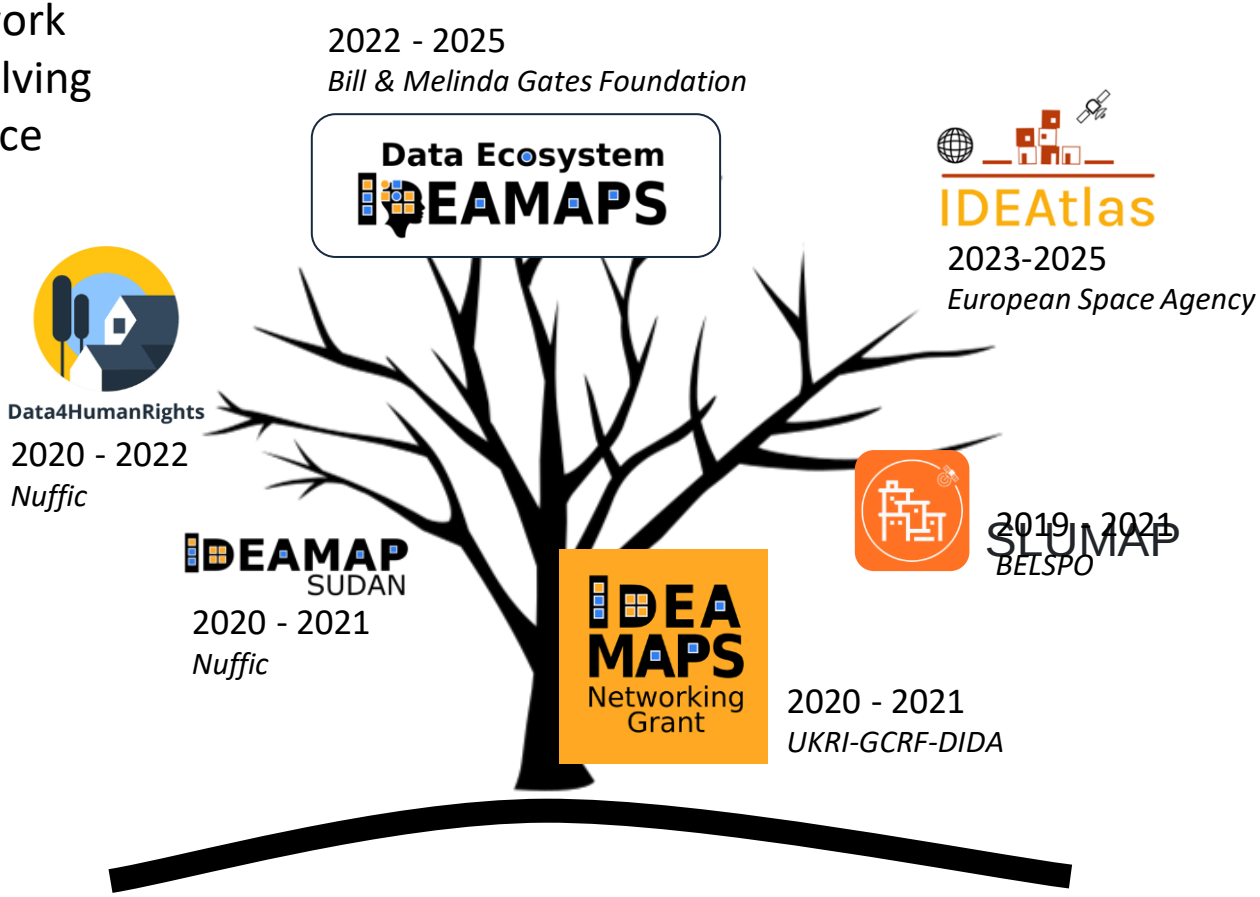
UNIVERSITY OF TWENTE.

APHRC African Population and Health Research Center

UNIVERSITY of York

The IDEAMAPS Network has produced an evolving family of projects since 2019



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Network
ideamapsnetwork.org
@IDEAMAPSNetwork
admin@ideamapsnetwork.org