



GRID³
NIGERIA



Introduction to Geospatial Big Data with GRID3 Nigeria

Data Science Nigeria, AI Executive Masterclass

BILL & MELINDA
GATES foundation



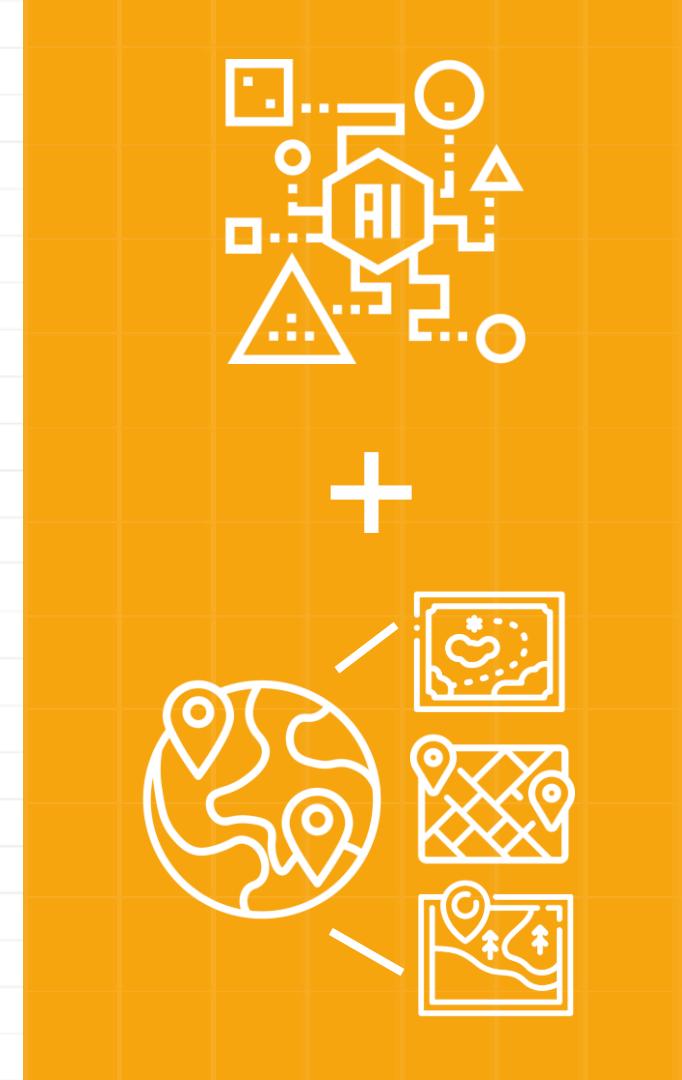
world
pop
FLOWMINDER.ORG



Center for International Earth
Science Information Network
EARTH INSTITUTE | COLUMBIA UNIVERSITY

AI & GIS

- **GIS systems** contain a wealth of information classified by geographical locations, and these make **excellent training datasets for AI systems**.
- GIS can thus add value to AI by providing rich dataset for **predicting geospatial events** such as car crashes or crime, estimating drive times, or helping businesses determine where to construct the next new store.



GRID3: Geo-Referenced Infrastructure and Demographic Data for Development.

Our mission:
To build spatial data solutions that make development goals achievable.



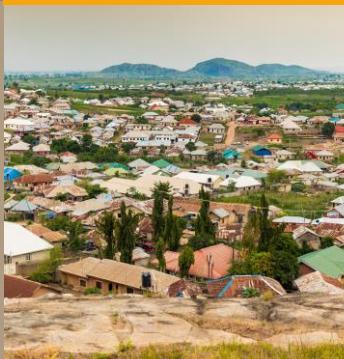
Housing census & hybrid census support



High-resolution population estimates

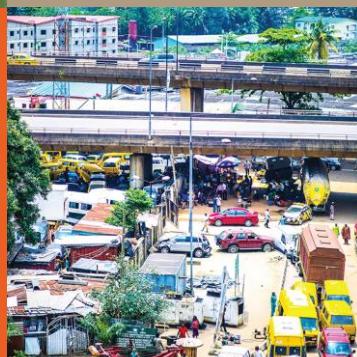


Harmonising subnational boundaries



Comprehensive settlement locations

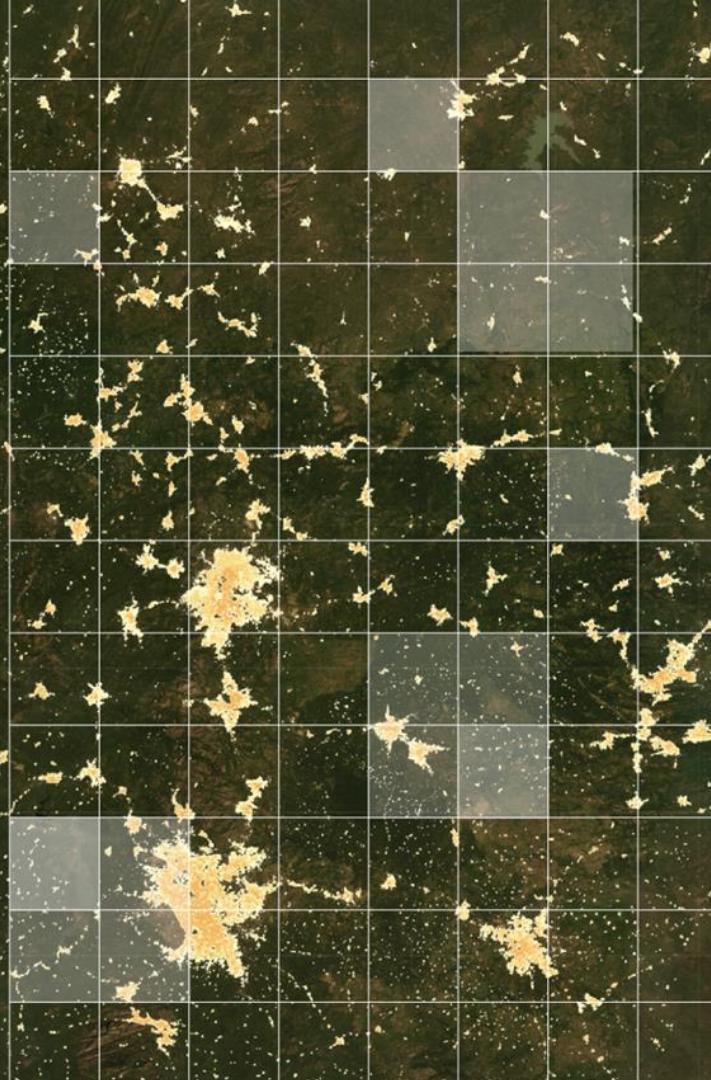
Locating critical infrastructure

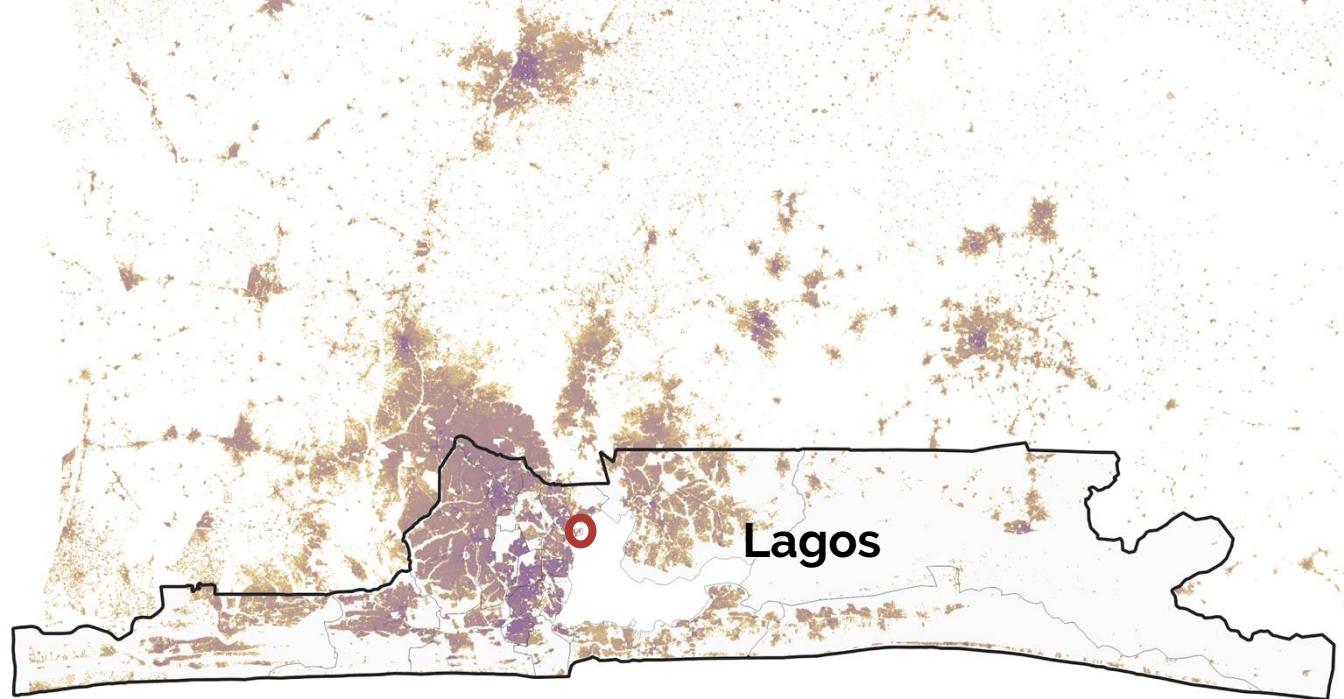


Strengthening capacity



Using population estimates for development





Gridded population estimates, (alongside their uncertainty measures) have proven accurate enough to be incorporated into operational sustainable development planning and implementation.

Number of persons per 100m grid cell

0
0-1
1-10
10-100
100-250
250+

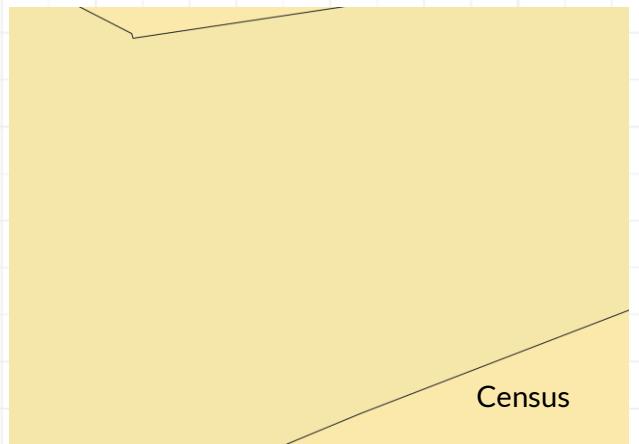




Zooming in further and comparing to imagery, the higher accuracy can be confirmed.



Google Satellite imagery
Accessed 17-11-2019



Number of
persons per
100m grid cell

0
0-1
1-10
10-100
100-250
250+



Select Tool

- Click the map
- Draw an area

Gender and Age Groups

- Female



Save Estimate As:

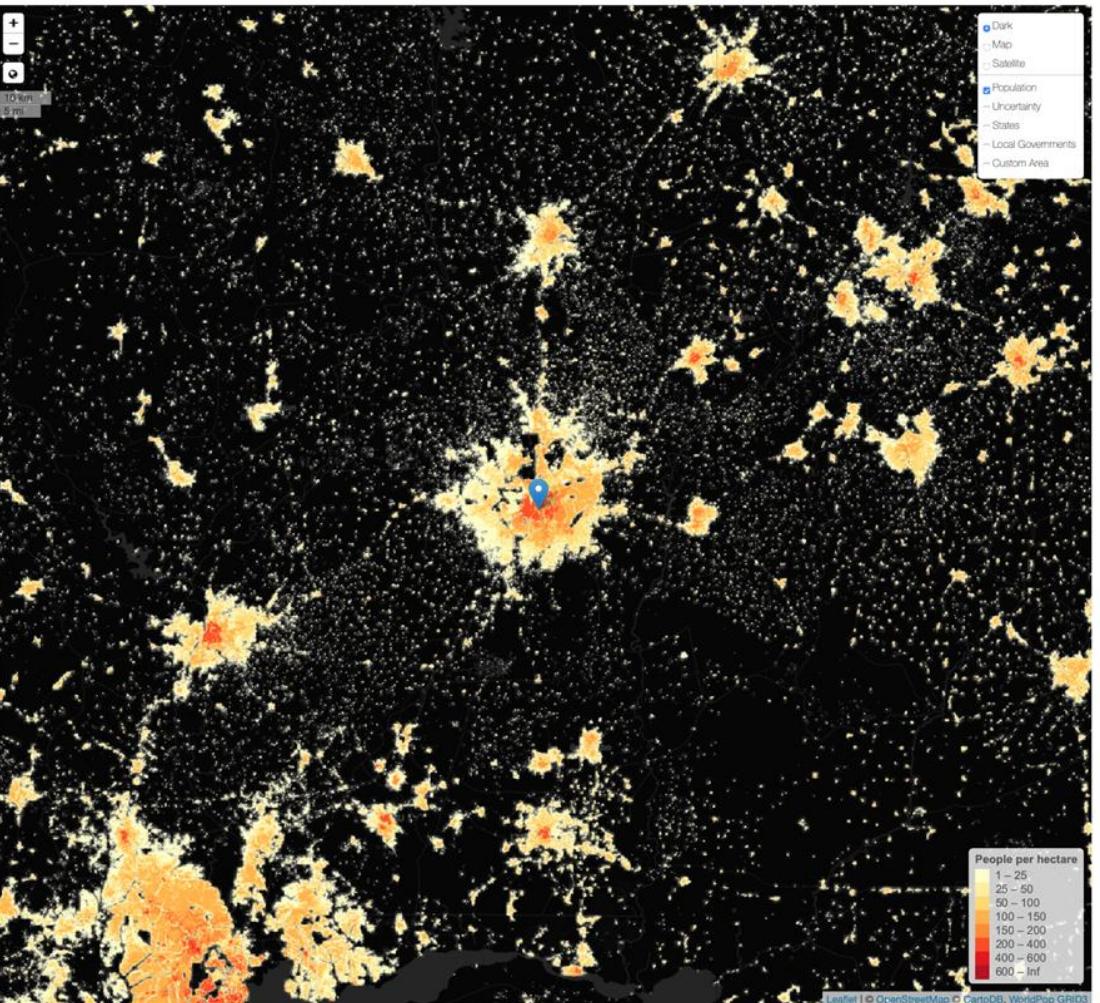
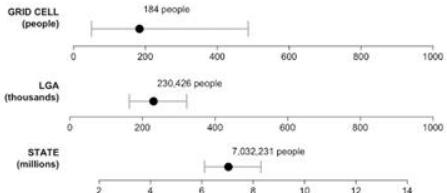
Save

Confidence Level (%):

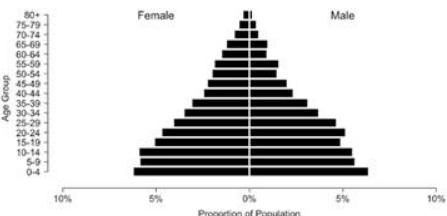


Confidence Type

- Interval
- Threshold

Population Estimates
Oyo state: Ibadan South East LGA

Population Pyramid (in grid cell)



Settlement Types (% of grid cell)


www.grid3.gov.ng

Benefits of geospatial data in decision making

- Knowing actual location of people and their numbers is essential for **business planning, investment** and **development**.
- Age & sex disaggregated population estimates can provide additional valuable insights to decisions.
- Having point locations of infrastructure visualised and linked to population can help us track/measure set goals and guide us to make **smarter informed decisions**.

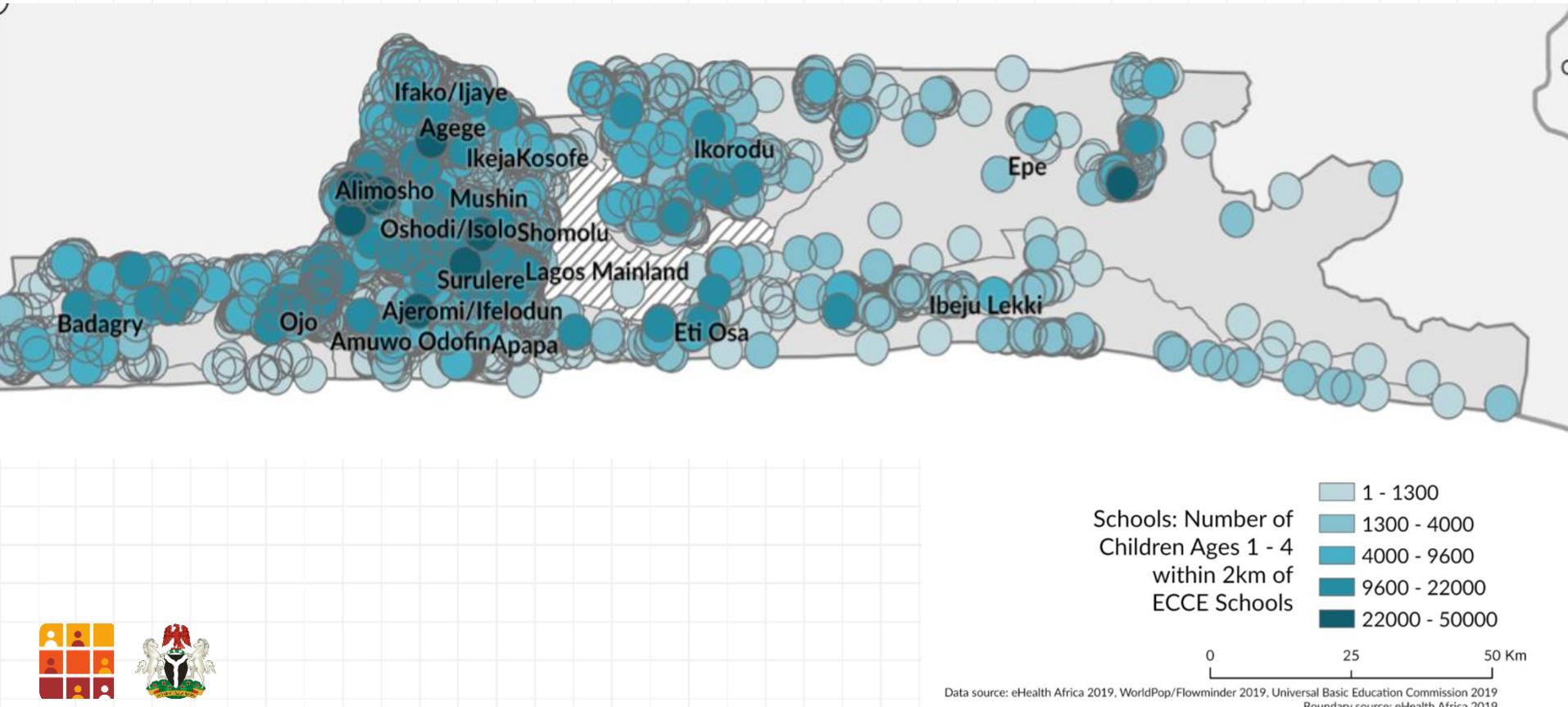




Applications: Education



Most young children live within 2km distance to an existing school in Lagos





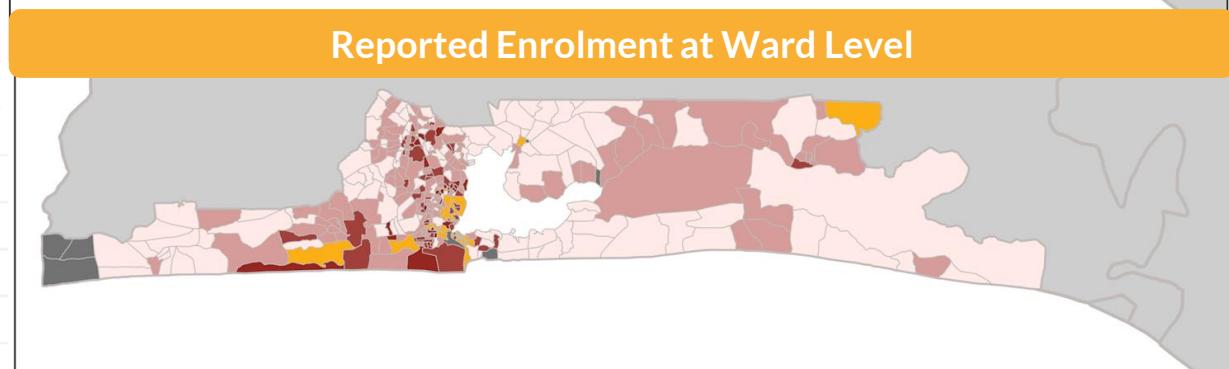
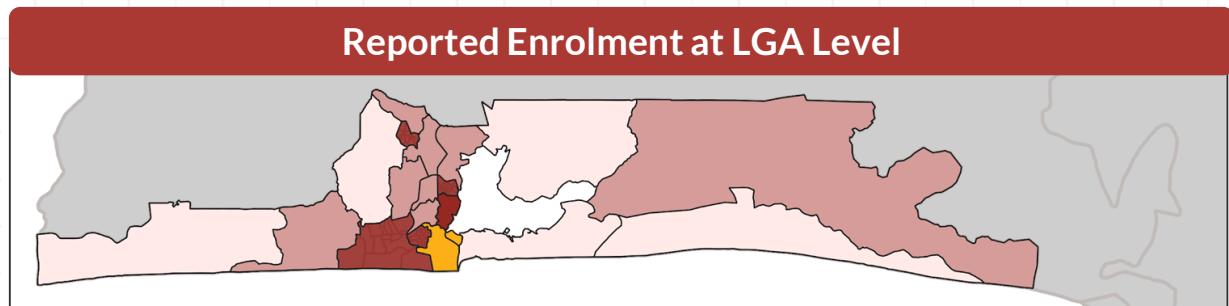
Indicators Enrolment of Children Ages 1-4

Reported Enrolment of Children Ages 1-4 as a fraction of population

- 0 - 0.25
- 0.25 - 0.5
- 0.5 - 0.75
- 0.75 - 1
- >1
- No Data
- State Boundaries

Source: The Universal Basic Education Commission, eHealth Africa and Proxy Logics Limited

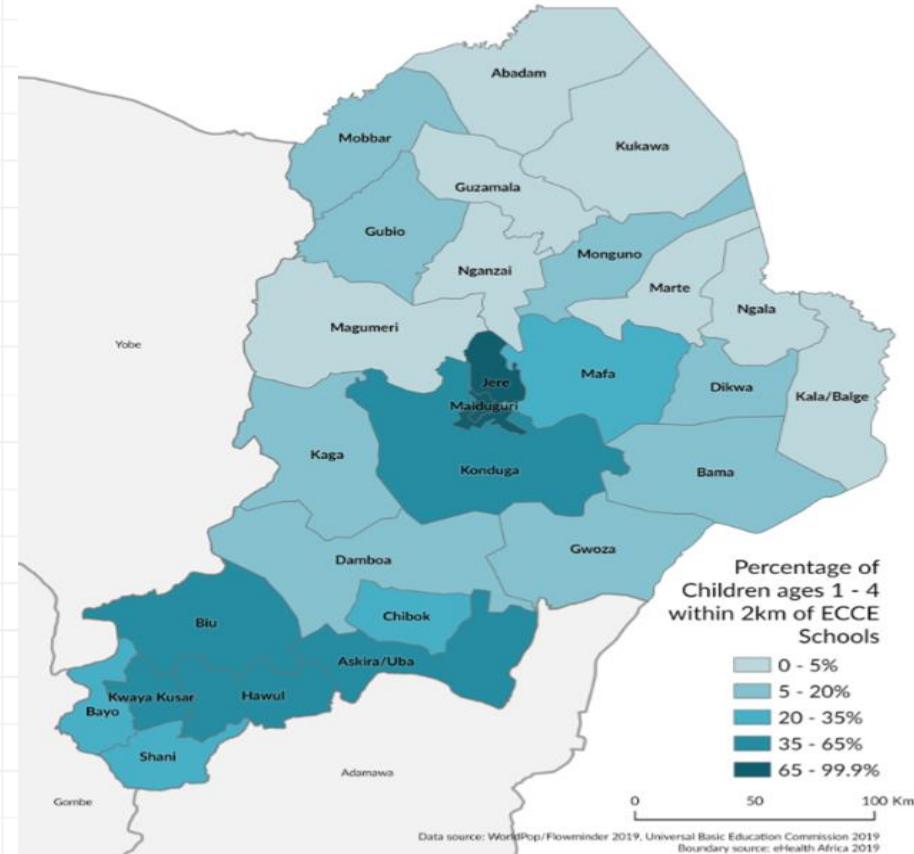
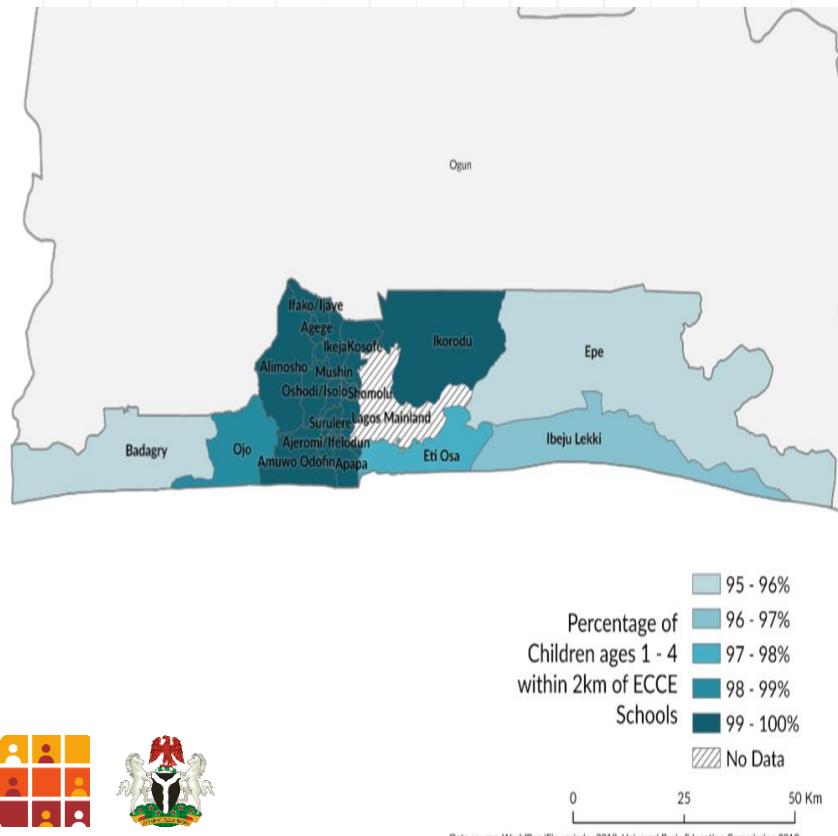
0 10 20 30 40 50 km



Most schools in Epe, Ibeju-Lekki are far off existing primary health care centres



Although, access to school is higher in Lagos than in Borno, intra LGA disparity is still a challenge in Lagos

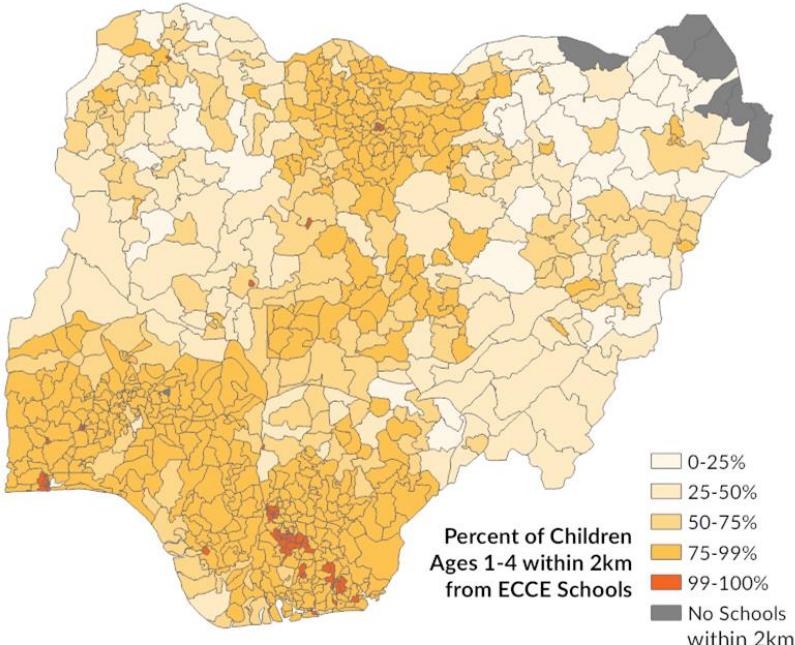




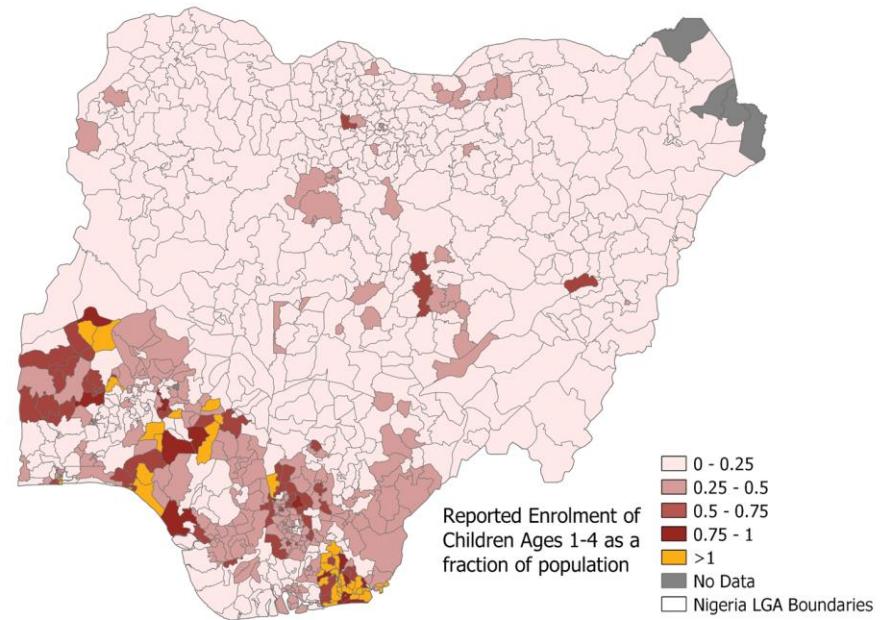
Indicators



Children Ages 1-4 within 2km from ECCE Schools



Reported Enrolment of Children Ages 1-4



Source: Universal Basic Education Commission, eHealth Africa and Proxy Logics Limited

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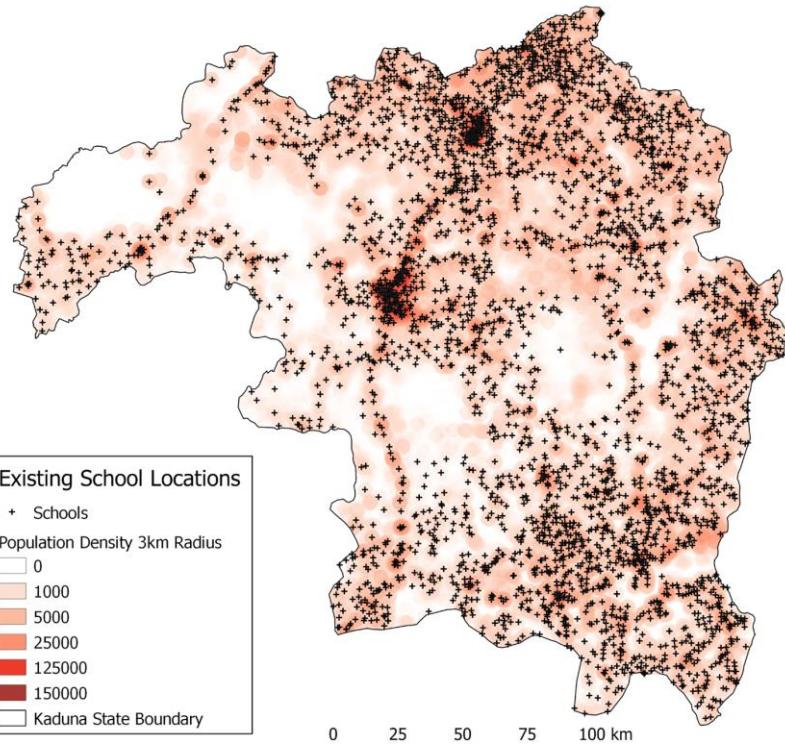


Optimisation

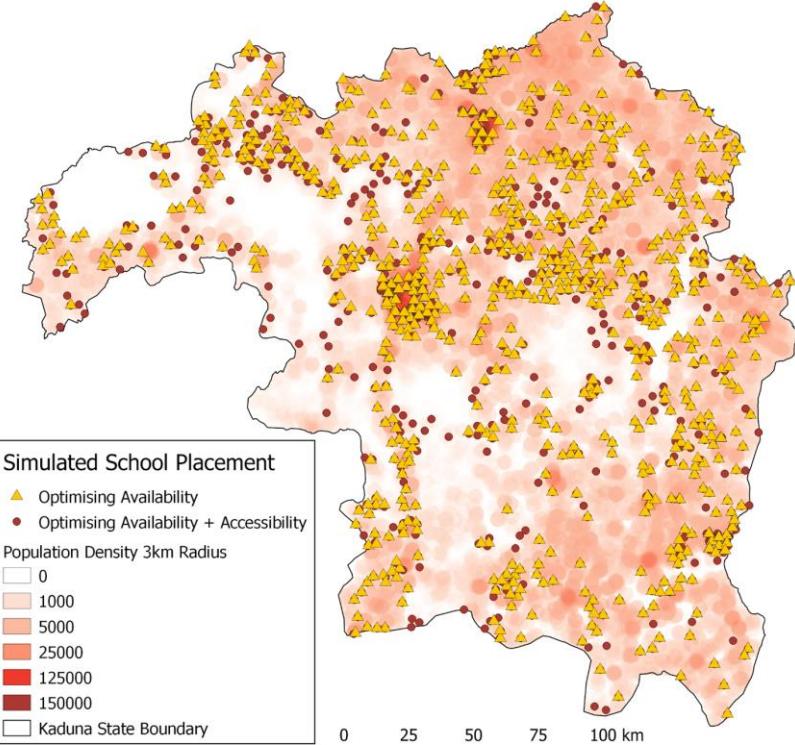
Planning School Expansion: Example of Kaduna



Existing schools



Simulated school placement





Applications: Financial Inclusion



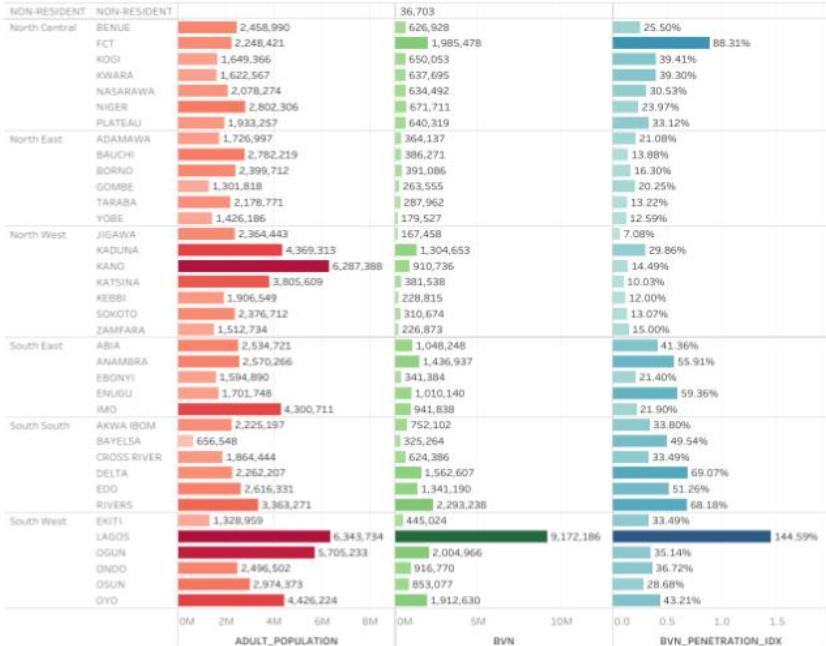
GRID3 partnership with LBS & DSN in support of FIS: BVN penetration by State



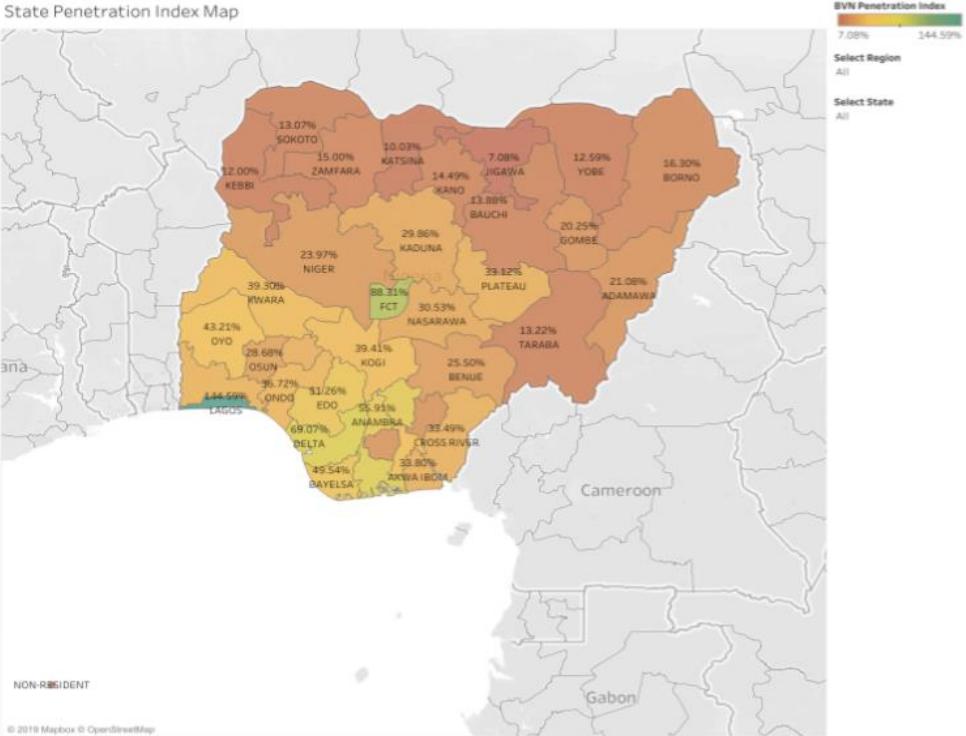
These story points show the BVN enrolment across various demographics and the global impact of the penetration Indices



Penetration by States



State Penetration Index Map



© 2019 Mapbox © OpenStreetMap

*BVN Penetration Index = BVN Count / Adult Population.

*BVN Penetration across the country is 38.80% with an estimated margin error of 16%.

Sources:

*Nigeria Inter-Bank Settlement System (NIBSS) BVN Data.

*Geo-Referenced Infrastructure and Demographic Data for Development (GRID3) Population Data.



GRID3 partnership with LBS & DSN in support of FIS: Unbanked populations



This Story shows the demographics of Unbanked individuals and Non-Transacting individuals by their demographics and Compares across different instruments

Unbanked by Gender,State by Gender,Region by Ag..	Unbanked by Gender,by age by gender,State by Gend..	Unbanked Map	Unbanked demographics and adult Population Dem..	Unbanked By State and Population By State	Customers with BVN but do not carry out Interbank transactio...	Map of customers with BVN but do not carry out Interbank transac...	Demographics of Customers with BVN but do not carry out I...	Customers with BVN but do not carry out Interbank transactio...	Customers with BVN but do not carry out Interbank transactio...
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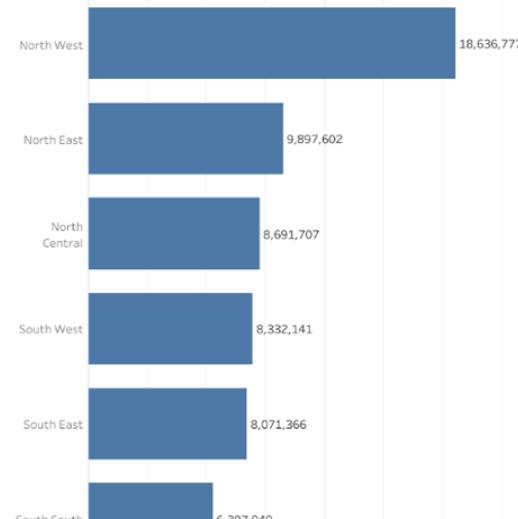
Total Unbanked as at (2019)

59,937,542

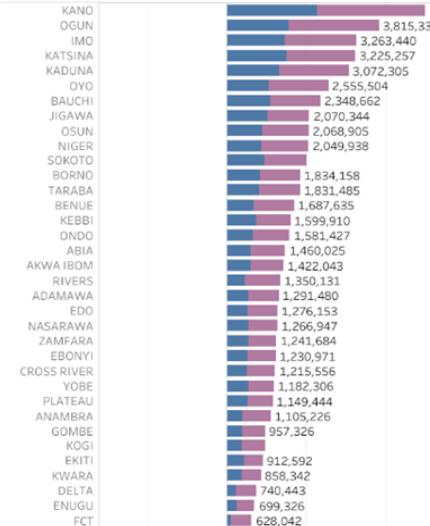
Unbanked by Gender



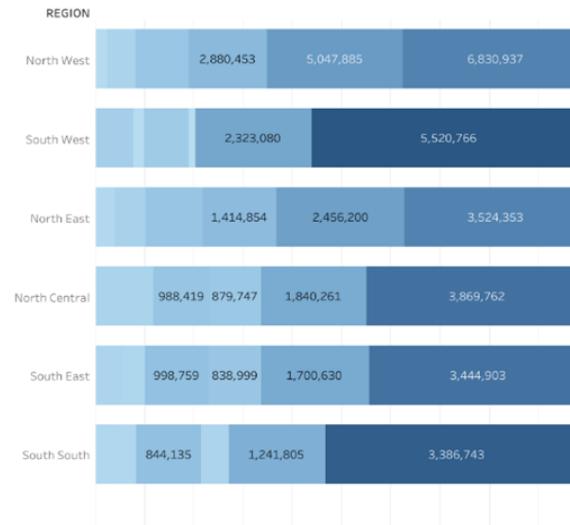
Unbanked by Region



State by Gender



By Region by age





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