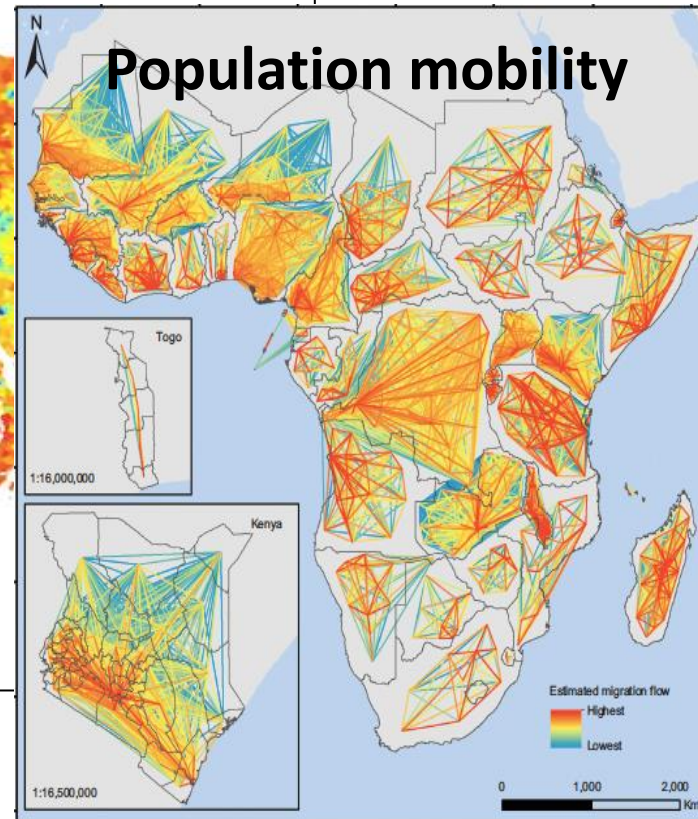
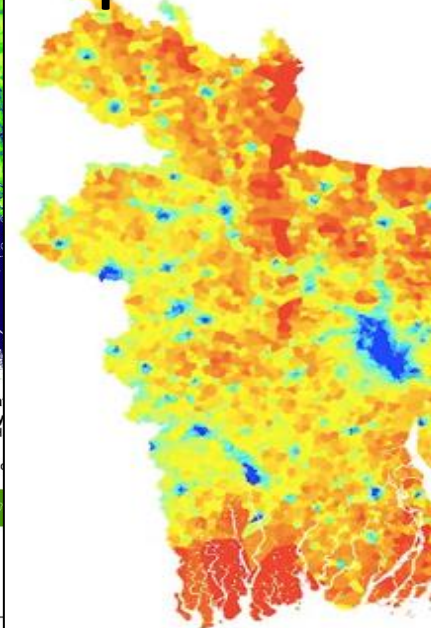


Population characteristics



Geospatial data integration

Open data, open peer-
reviewed methods

Mapping small area
demographics of low and
middle income countries

Key application areas in
epidemiology,
maternal/newborn health,
childhood vaccination



Uses of small area demographic data

- Planning elections
 - Calculating GDP
 - Local governance
 - Traffic planning
 - Financial services
 - Delivering utilities
 - Agricultural subsidies
 - Taxation
 - Land use management
 - Energy strategies
- Health system planning
 - Supply chain management
 - Health metrics
 - Meeting SDGs
 - Controlling infectious diseases
 - Modelling disease spread and intervention effects



Mapping populations



Mapping key demographic
groups

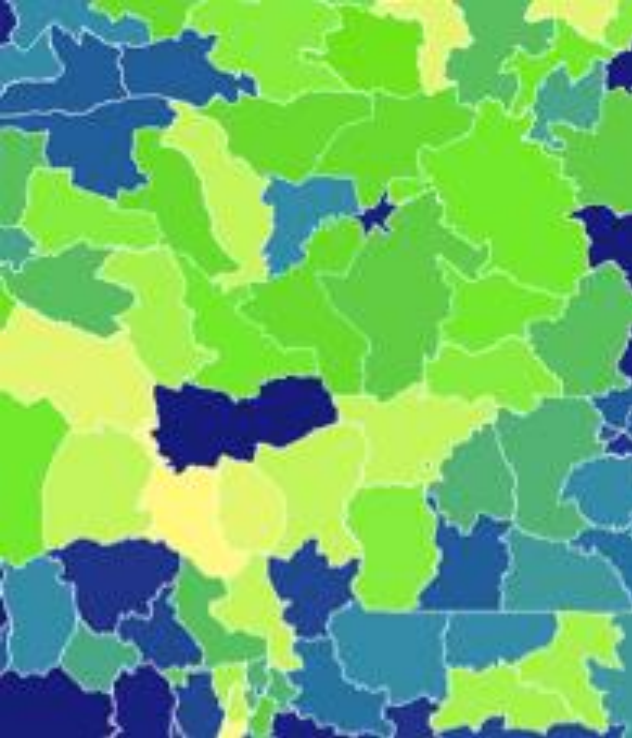


Mapping access, use and
quality of healthcare



Mapping health service
utilization

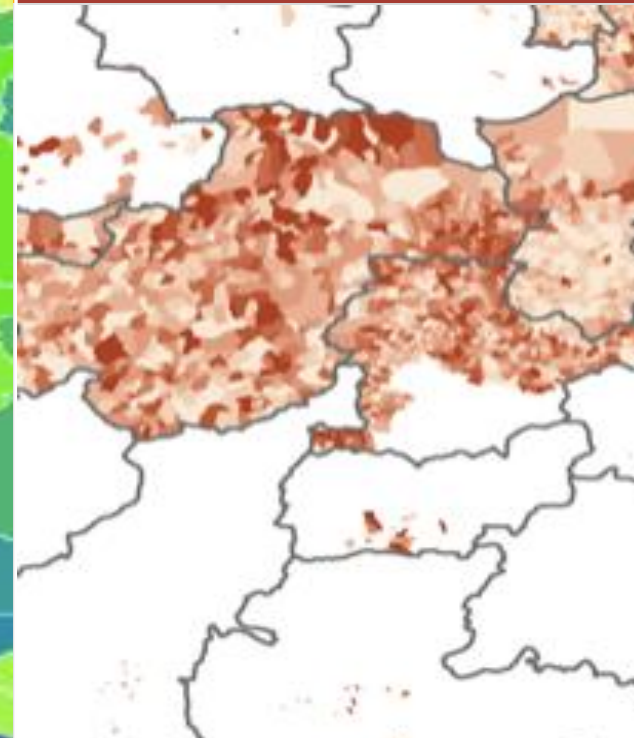
Coarse resolution



Outdated



Incomplete

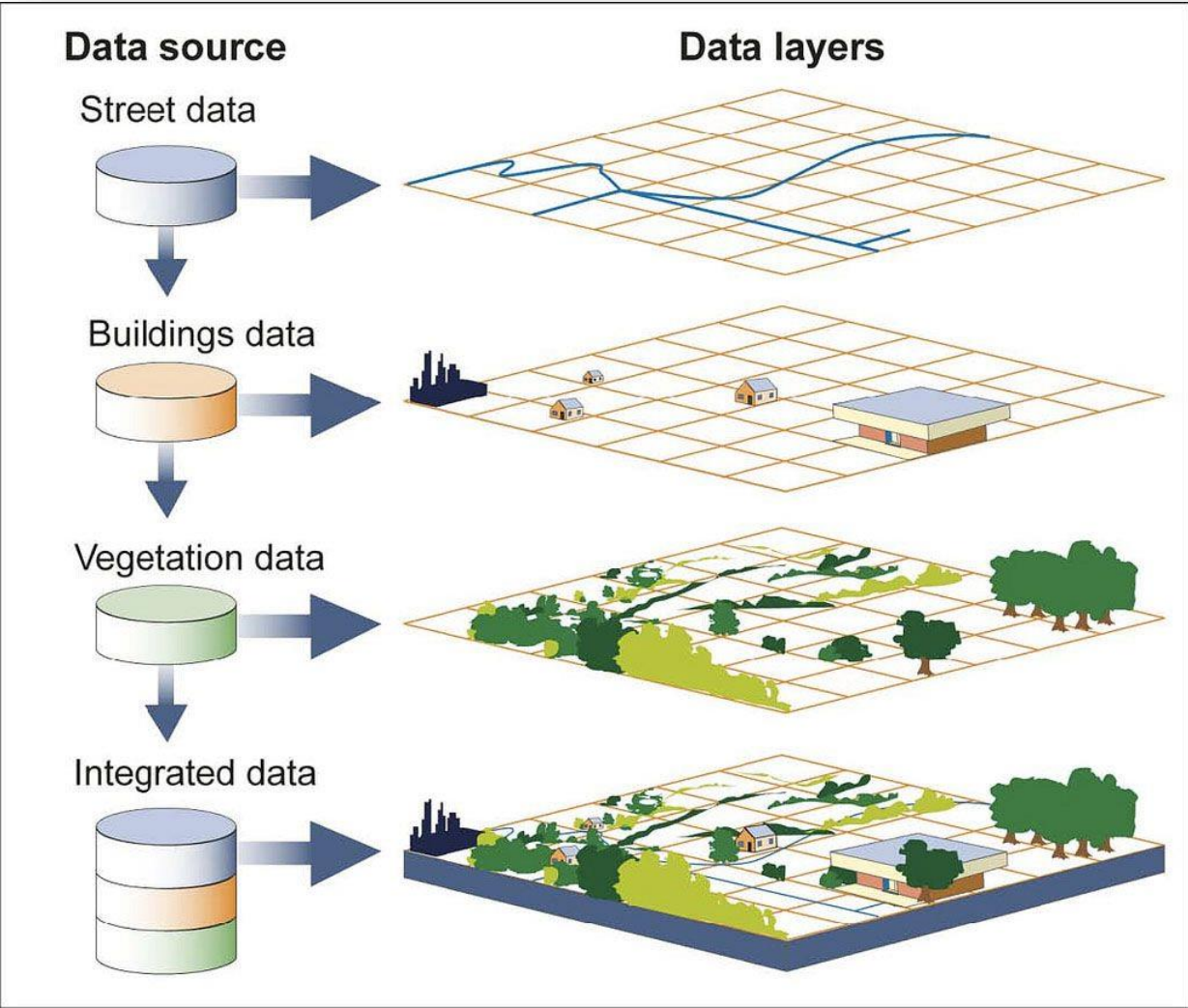


**Inaccuracies,
missing populations**



Demographic data challenges

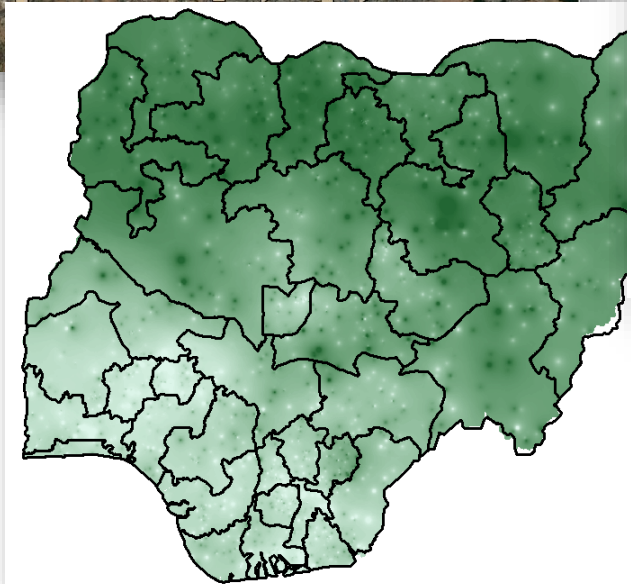
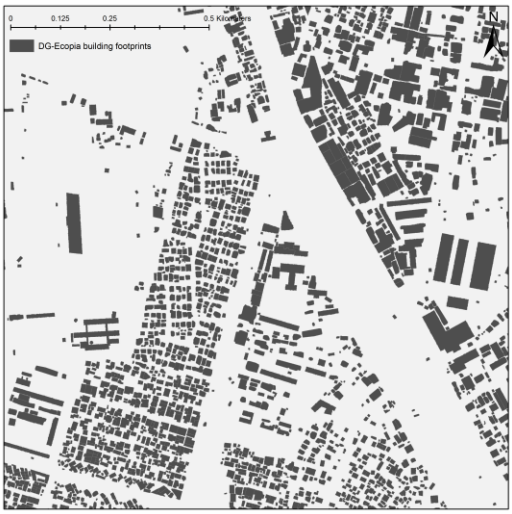
Mapping correlates of demographic variations



Source: GAO.

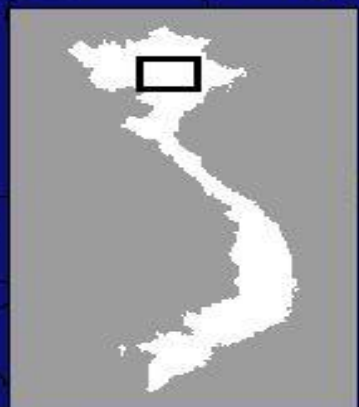


Buildings, schools,
roads, markets,
conflicts



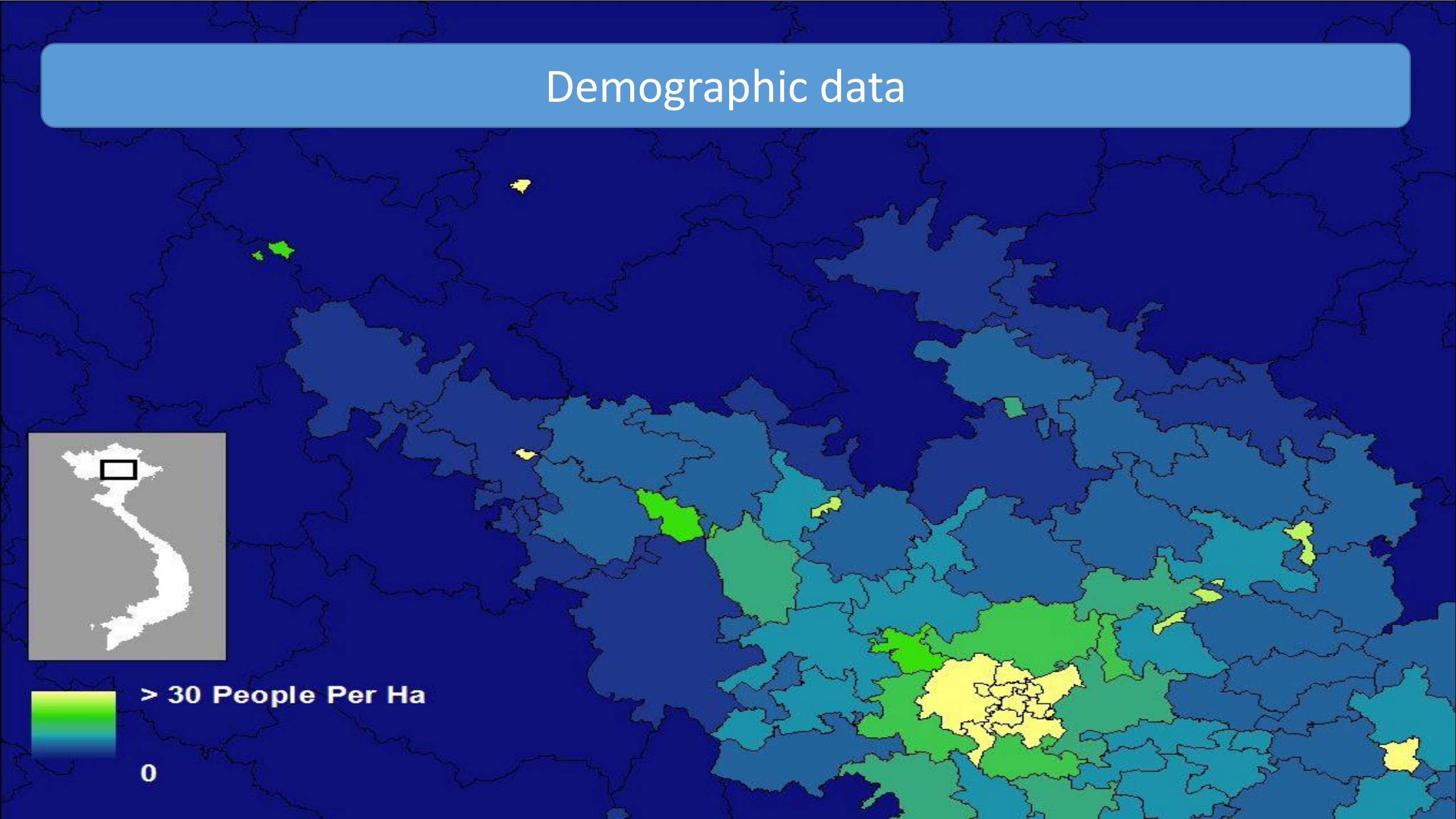
Household sizes,
neighbourhood
types, poverty rates

Demographic data

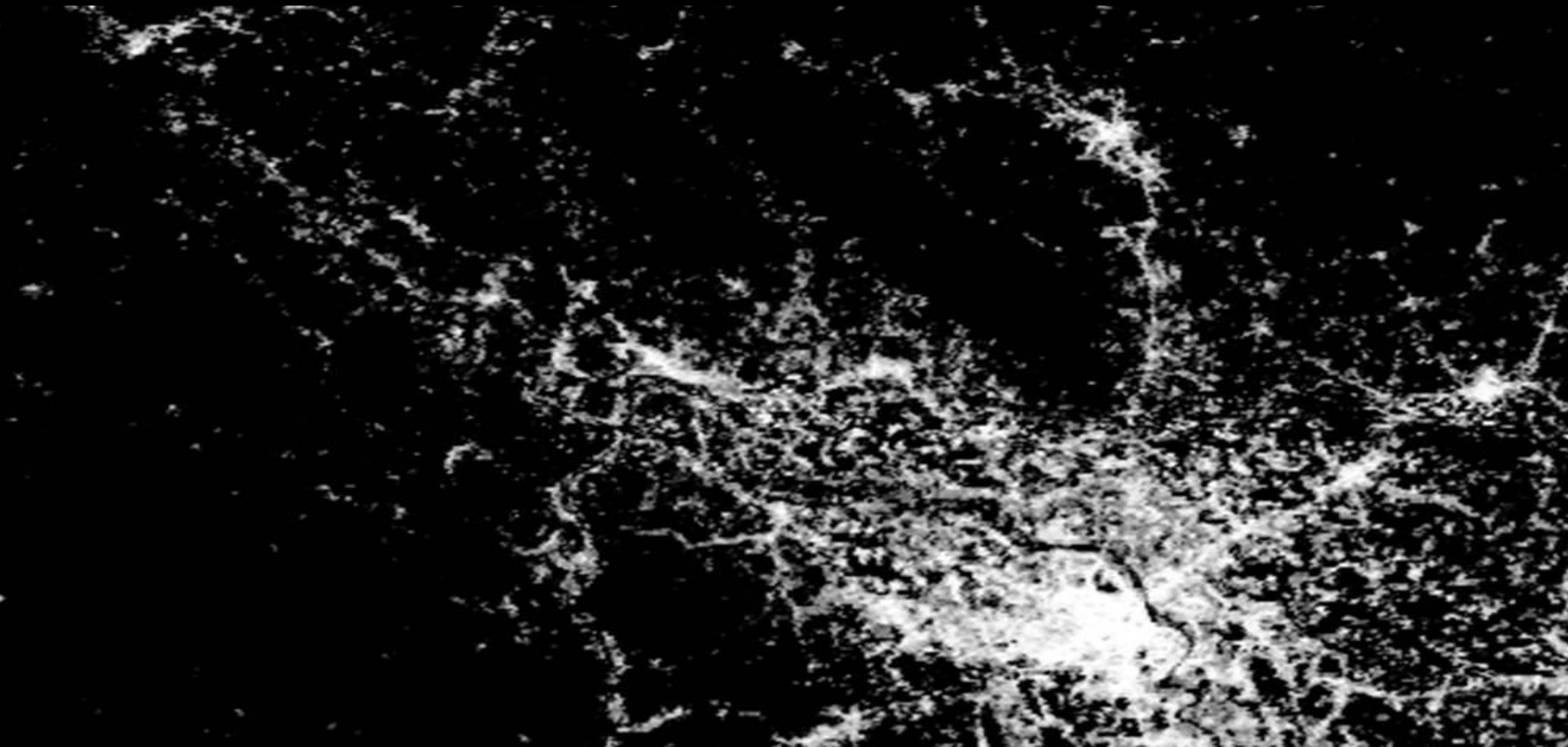


> 30 People Per Ha

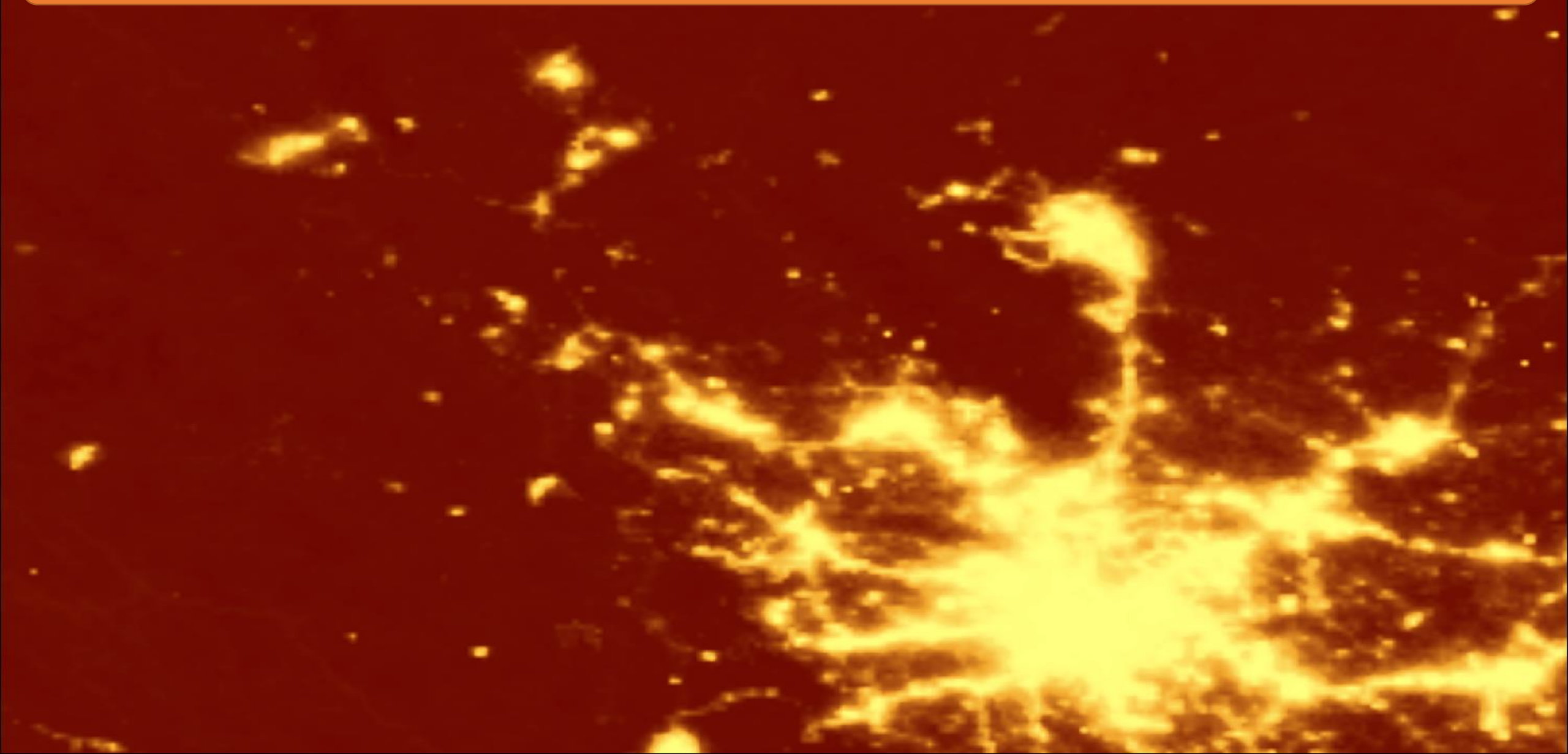
0



Settlement/building mapping from satellites



Satellite nightlights

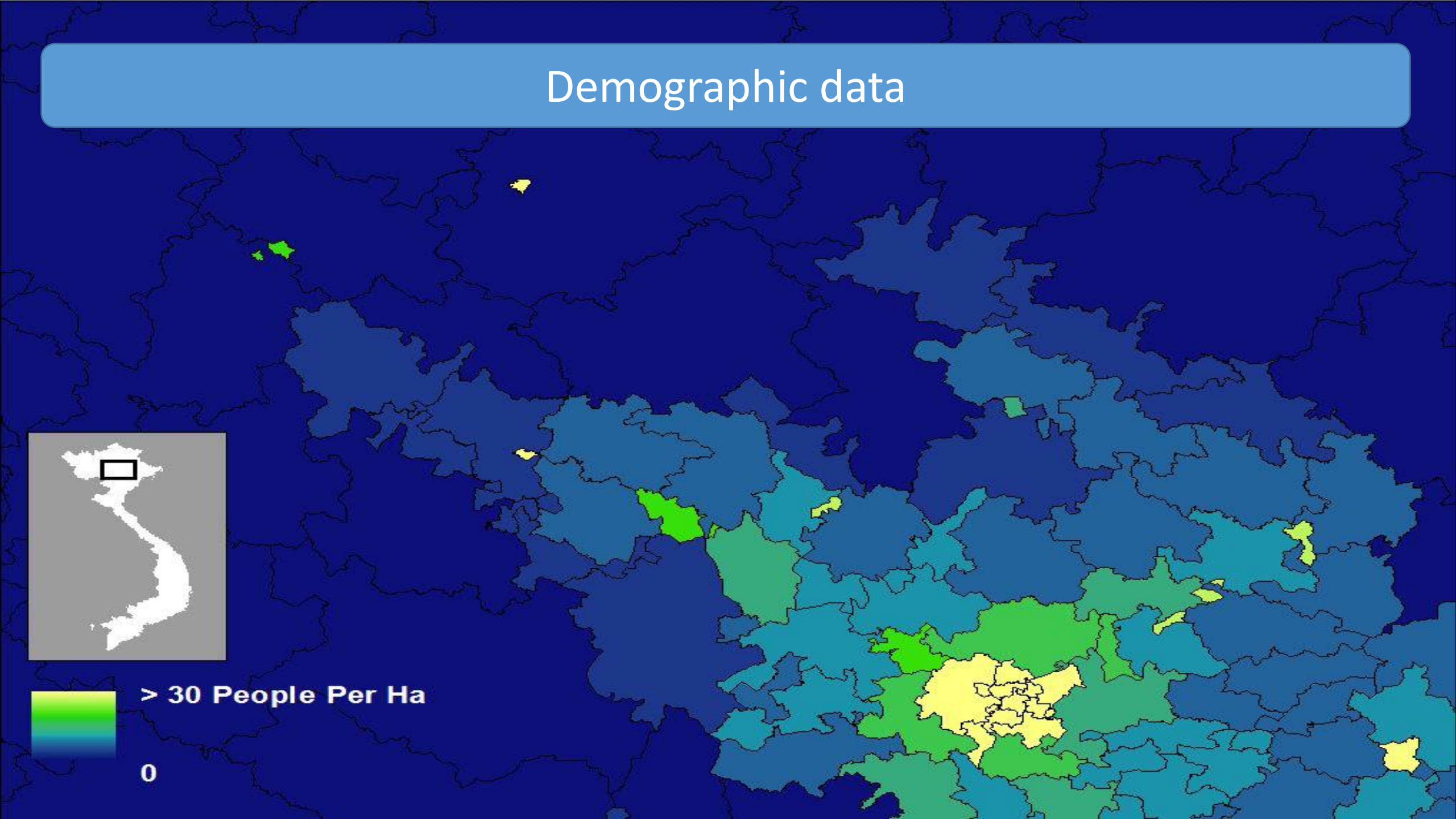


Demographic data



> 30 People Per Ha

0

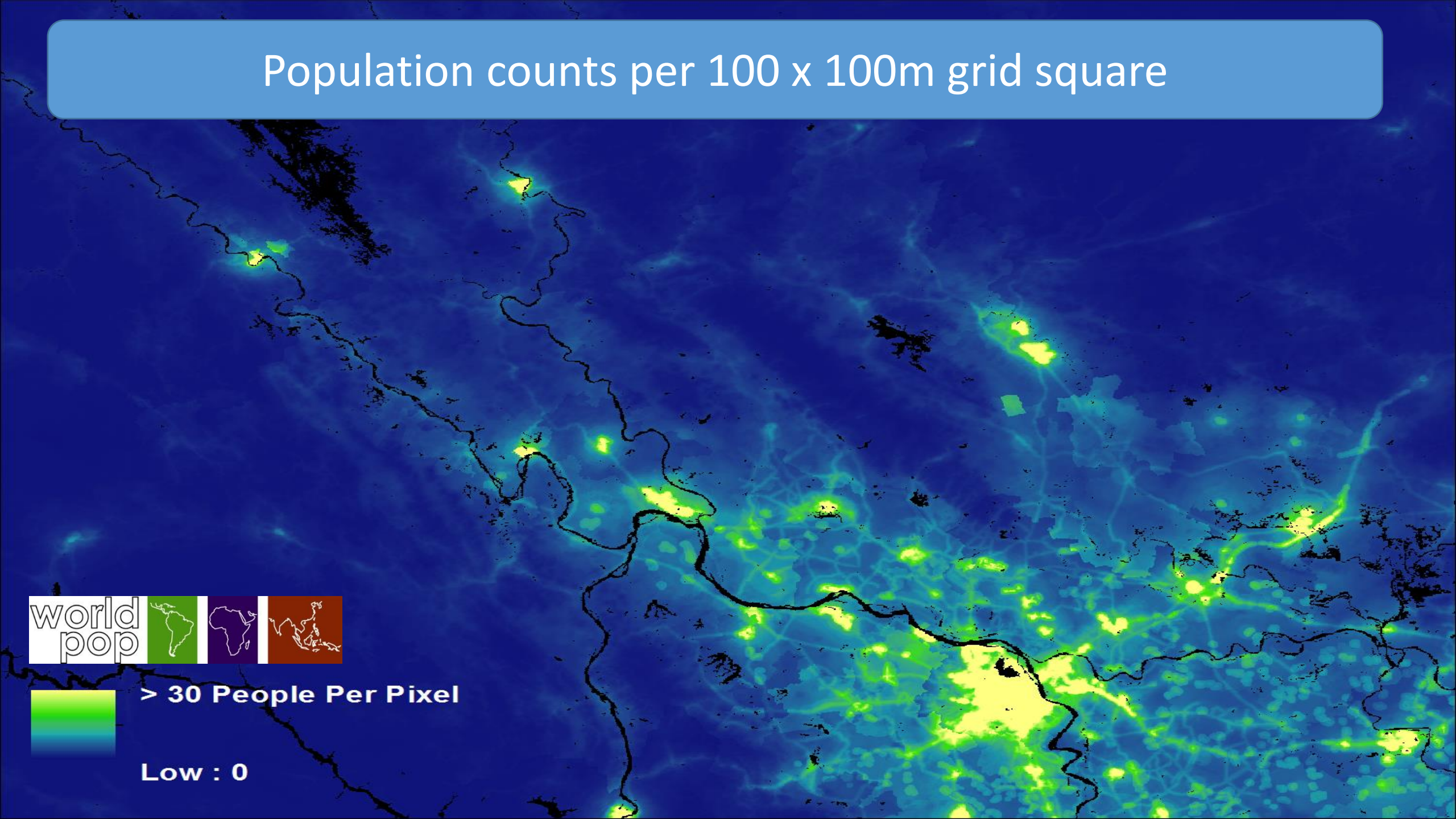


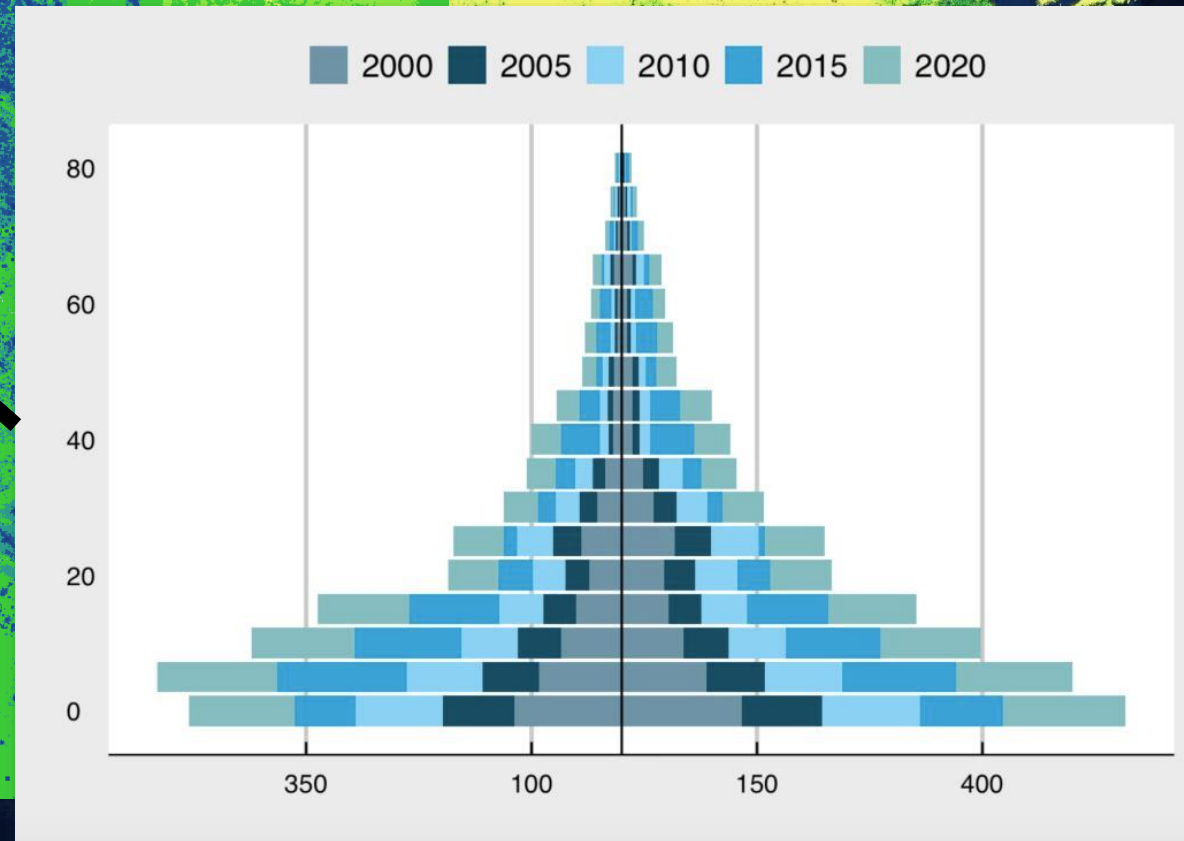
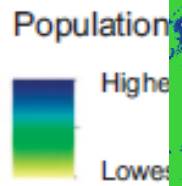
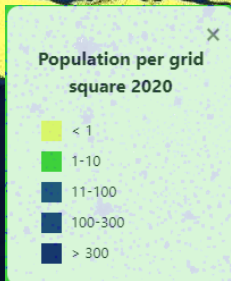
Population counts per 100 x 100m grid square



> 30 People Per Pixel

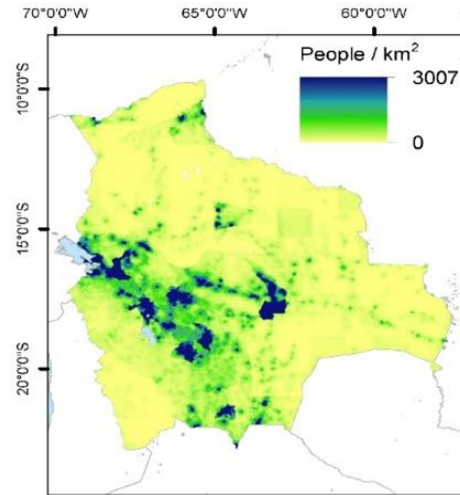
Low : 0



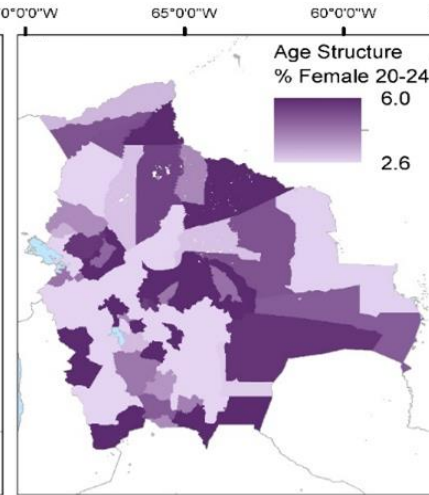


Mapping pregnancies and live births

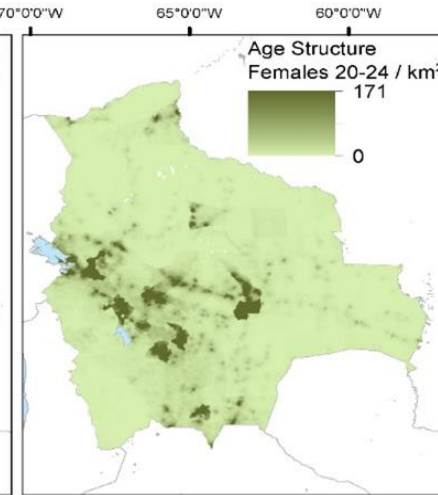
Population



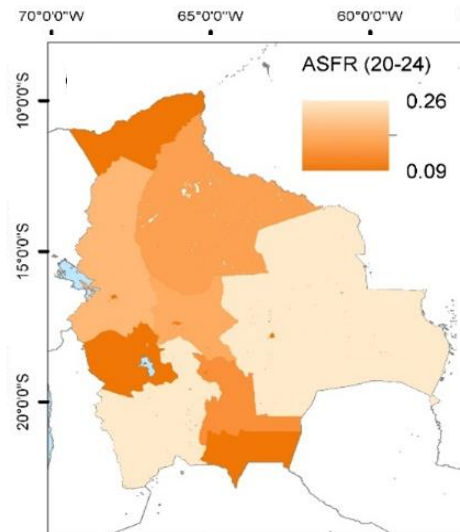
Age structure



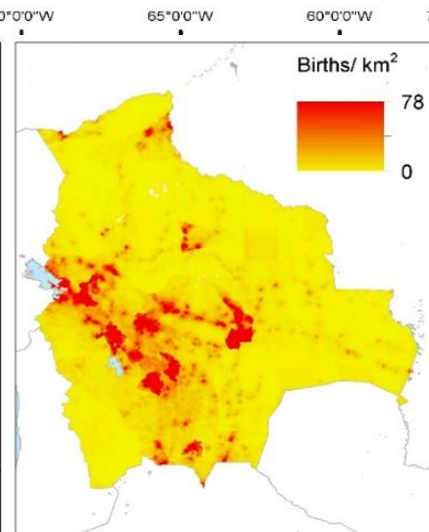
WoCBA



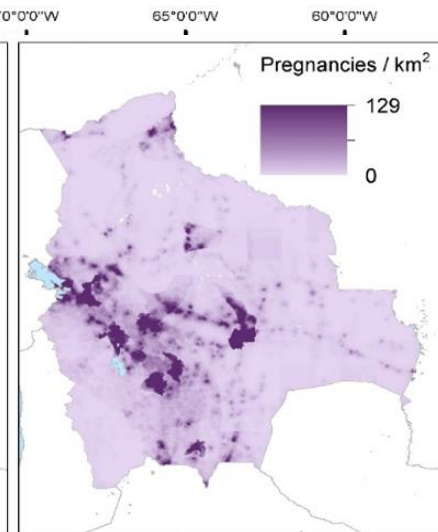
Fertility data



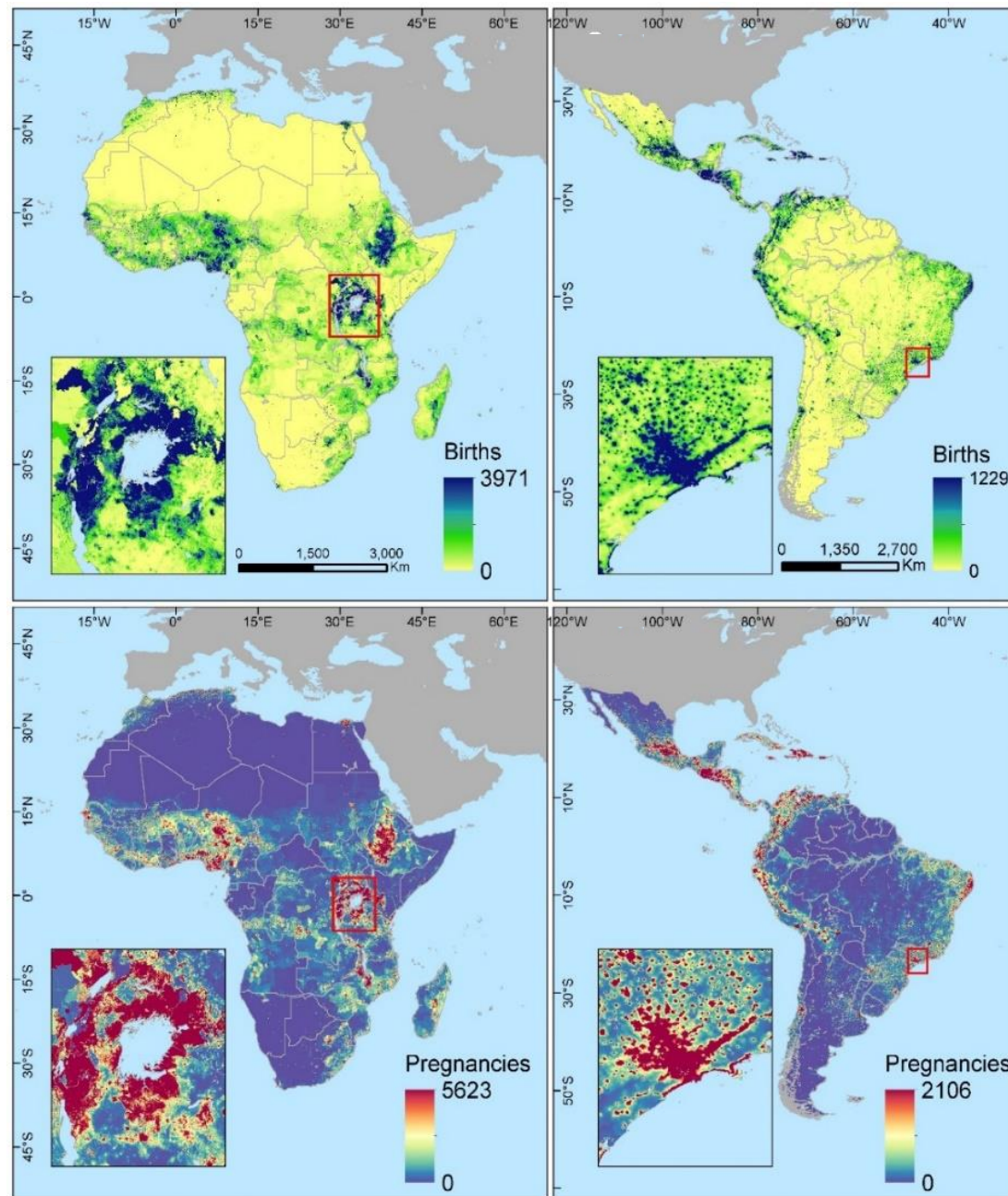
Births



Pregnancies

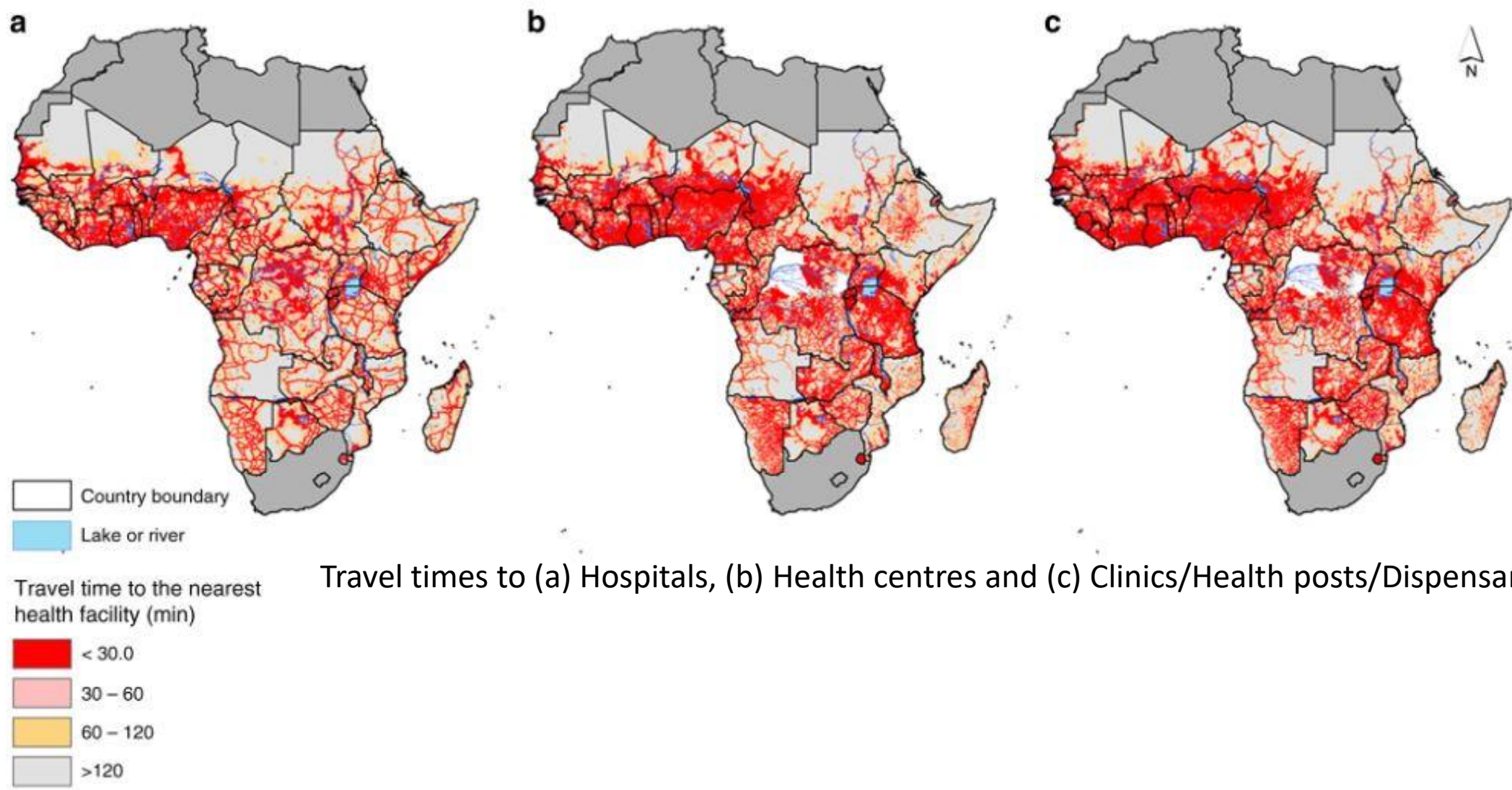


Mapping pregnancies and live births



Source: James, W.H.M et.al. (2018). Gridded births and Pregnancy Datasets for Africa, Latin America and the Caribbean. *Scientific Data* 5 (18890)

Mapping physical access to healthcare



Estimating access to birthing services for pregnant women

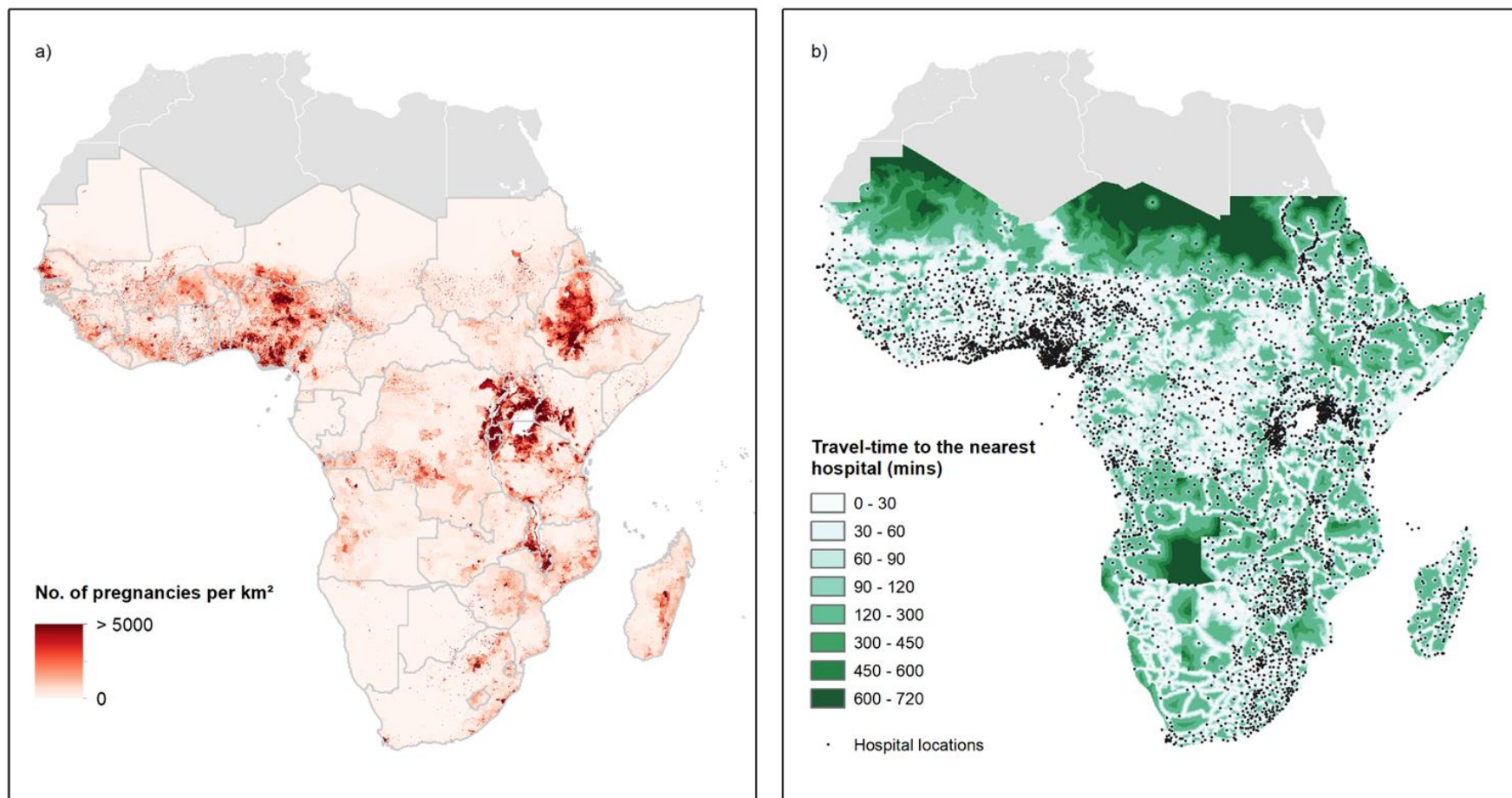
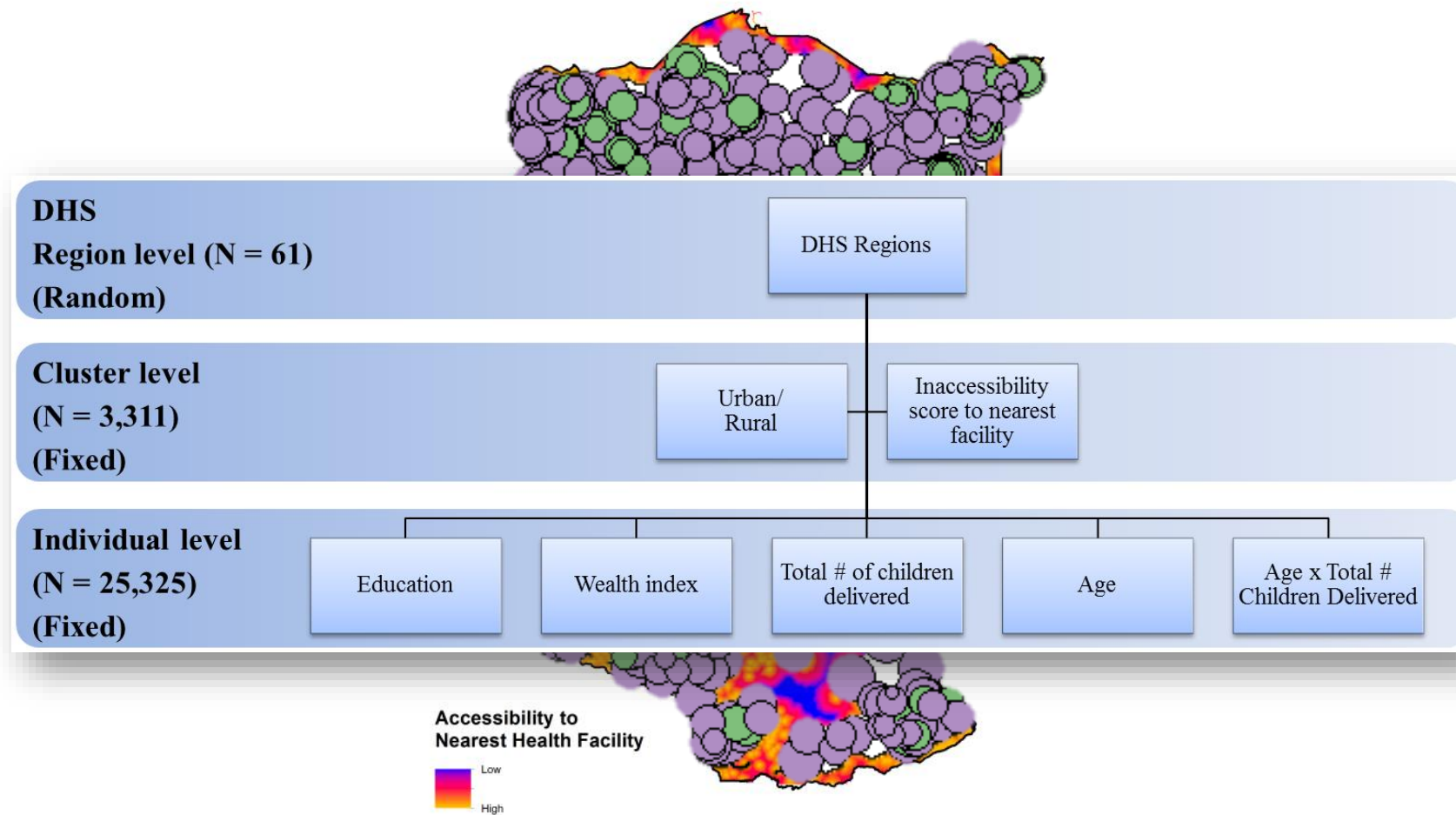


Figure 1 - Map (a) showing the estimated number of pregnancies in 2015 per 1km²,²⁴ and map (b) showing travel-time to the nearest hospital

Source: Wigley et al., Evaluating the Suitability of Indicators for Measuring the Variability and Geographical Accessibility of Maternal Health Services across Sub-Saharan Africa (Under review)

Mapping health service utilization and associated factors



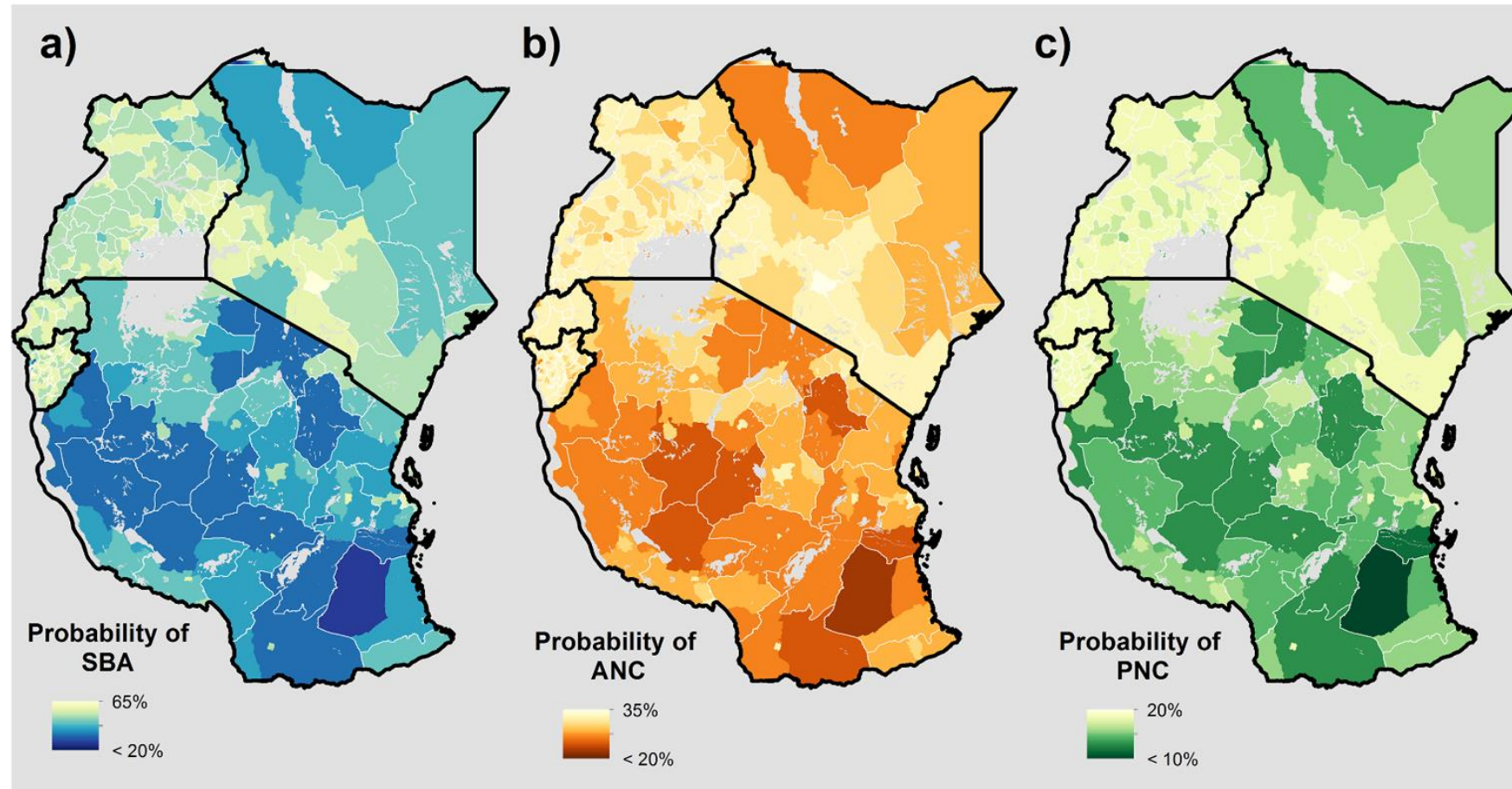


Fig 4. Births adjusted probability maps representing the probability of obtaining MNH care for a given birth at the administrative II unit in Kenya, Tanzania, Uganda, Burundi and Rwanda.

Further information



www.worldpop.org

 @WorldPopProject

E-mail: A.J.Tatem@soton.ac.uk

 @AndyTatem