



Exploring Geospatial Patterns of Private Sector FP Use: Kenya

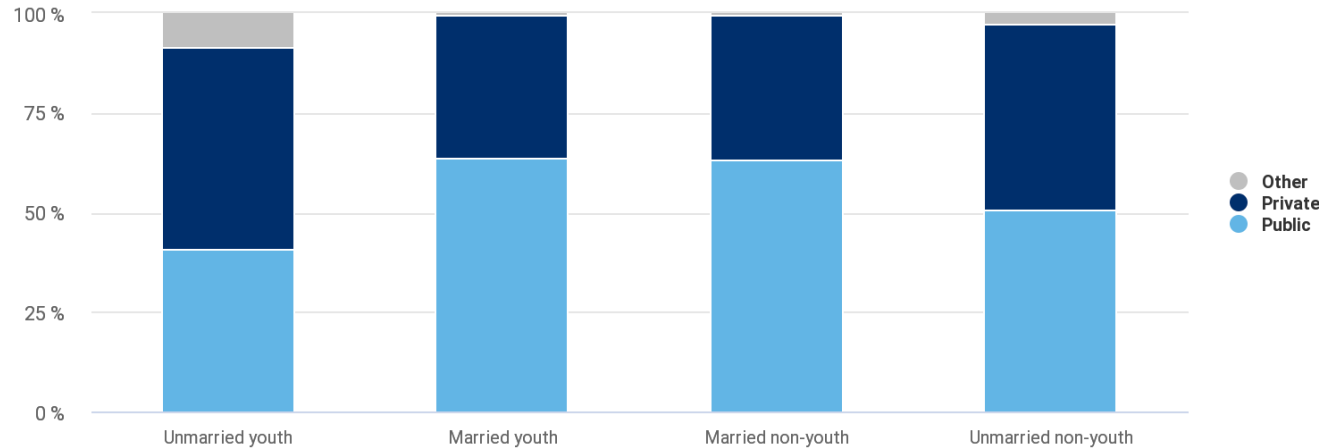
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Avenir Health





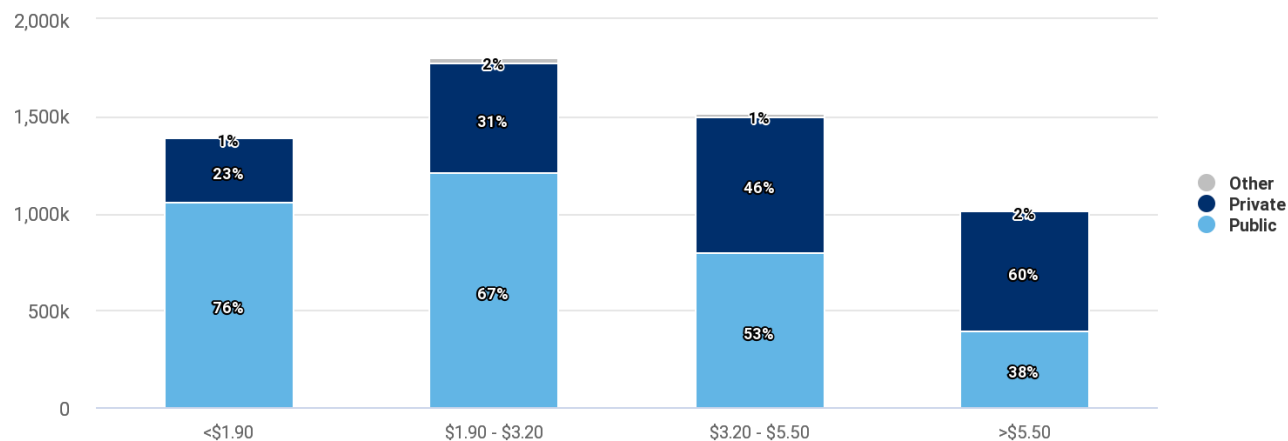
Private sector use patterns often explored by socio-demographics

Source mix by age and marital status



But what about geographic patterns of use across a county?

Users by income and source (2020)



Source: FP Market Analyzer (data for Kenya)



Addressing this gap: small area estimation

- Statistical techniques used to estimate the value of parameters over a small geographic area—smaller than sample size would allow using typical survey analysis methods
- Produces a **modeled surface** of spatial distribution of a given parameter
- Estimates here use prevR—package for R developed to estimate HIV prevalence from DHS cluster data
- Utilizes DHS geospatial resources

See Larmarange and Bendaud (2014) for more details on prevR: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4247267/>



Why develop small area estimates?

- Creates visual representation of how concentrated or disperse private sector use is within a country
- Explore variations in patterns across countries
 - Role of private sector in peri-urban areas?
 - Role of private sector in larger vs small cities & towns
- Inform advocacy and planning



Initial scoping

- Exploration of DHS subnational data to determine potential countries for small area estimation
- Considerations for analysis:
 - Recent DHS with GPS dataset available
 - Variation in method sourcing (i.e., not heavily public-sector dominated like Senegal and Rwanda)



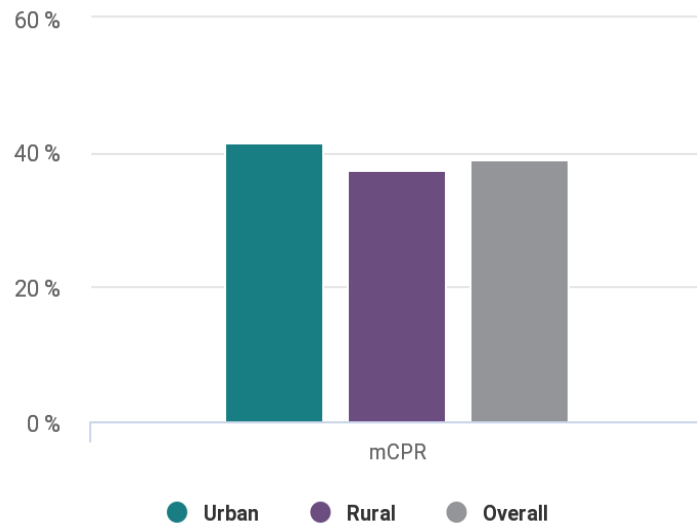
Index of maps: Kenya

- **mCPR** = modern method users / all women
- **Private market share** = modern method users getting method from private sector / modern method users
- **Private prevalence** = modern method users getting method from private sector / all women
- **Unmet need**
- **Population of WRA**
- **Modern method users**
- **Private users**
- **Income levels (relative and absolute)**
 - **Below the poverty line (\$1.90)**
 - **Above \$5.50**

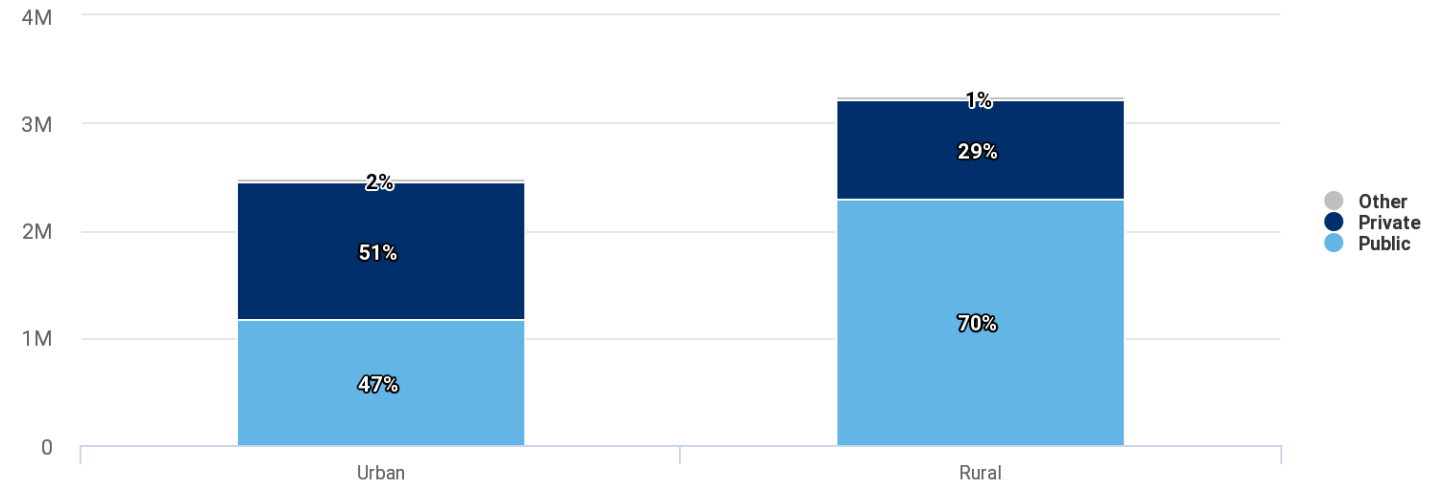


mCPR and sector by residence

mCPR by residence (latest DHS)



Source mix of users by residence (2020)

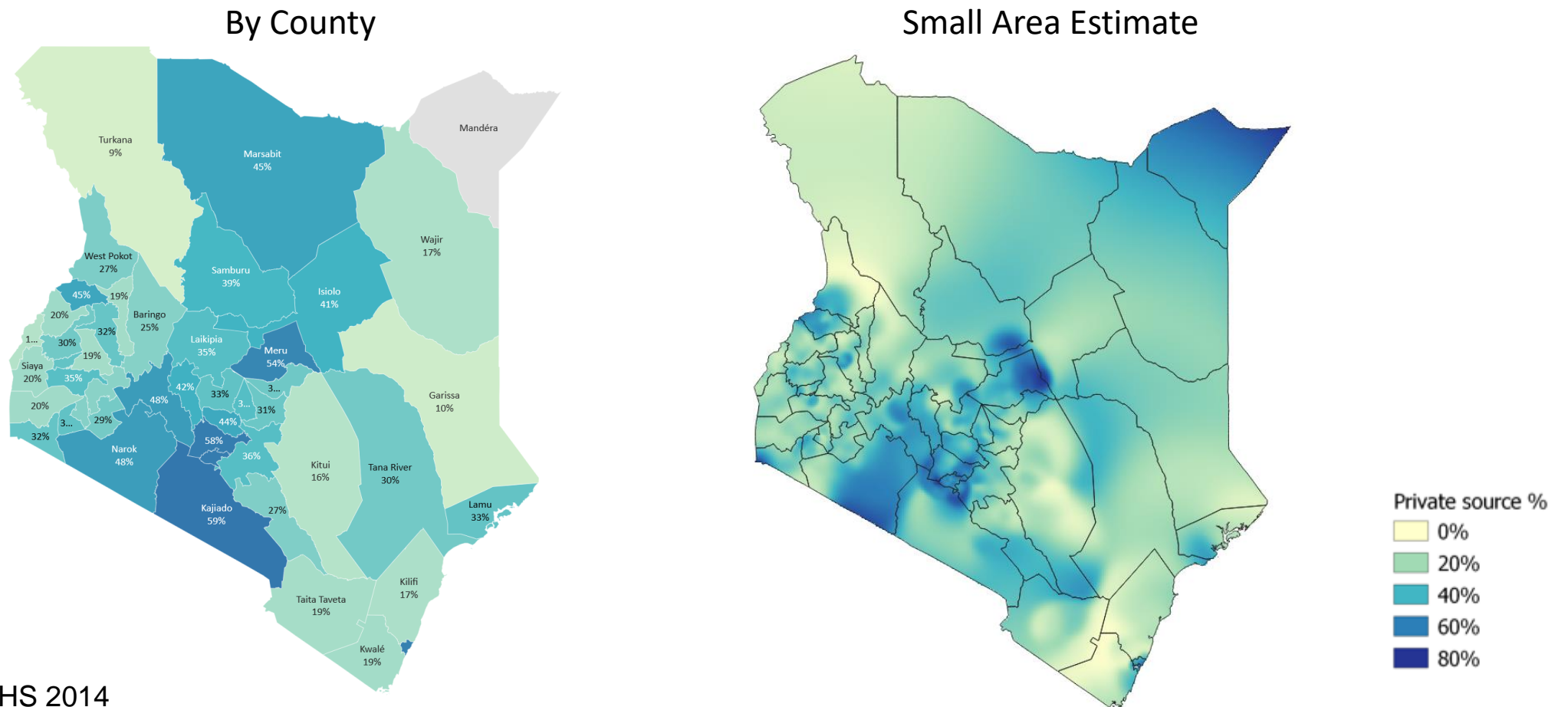


Source: DHS 2014, FP Market Analyzer



Sub-national variation in private sector use

Private market share: Percent of users getting their FP method from the private sector



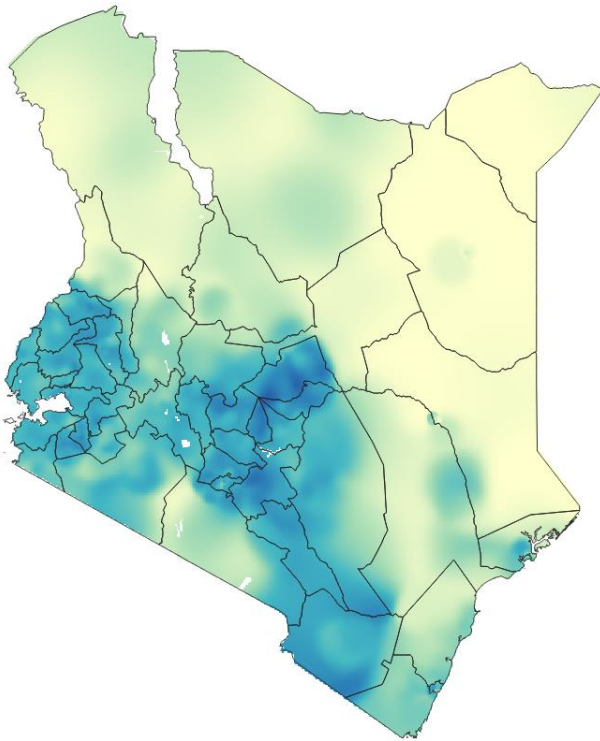
Source: DHS 2014



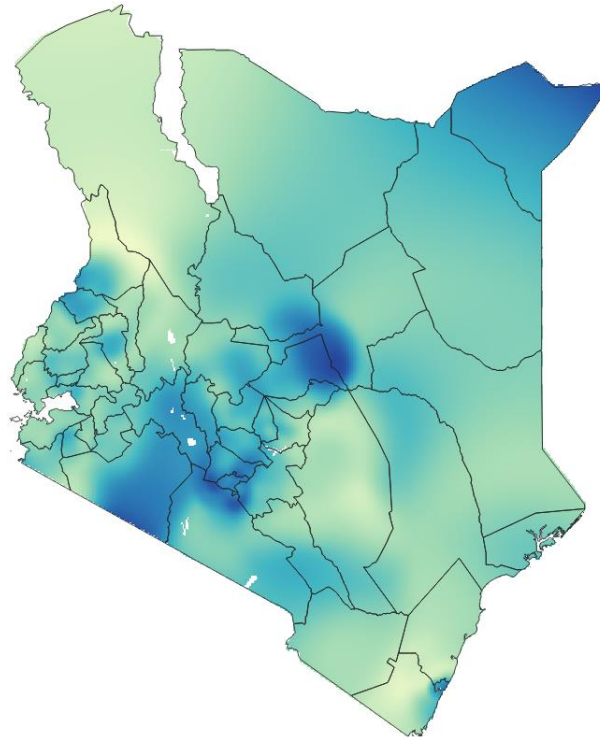
mCPR and private sector use

Private sector market share does not account for levels of mCPR; could have low mCPR but high private use or vice versa. Combining with mCPR gives a better sense of utilization of private services.

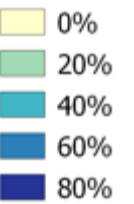
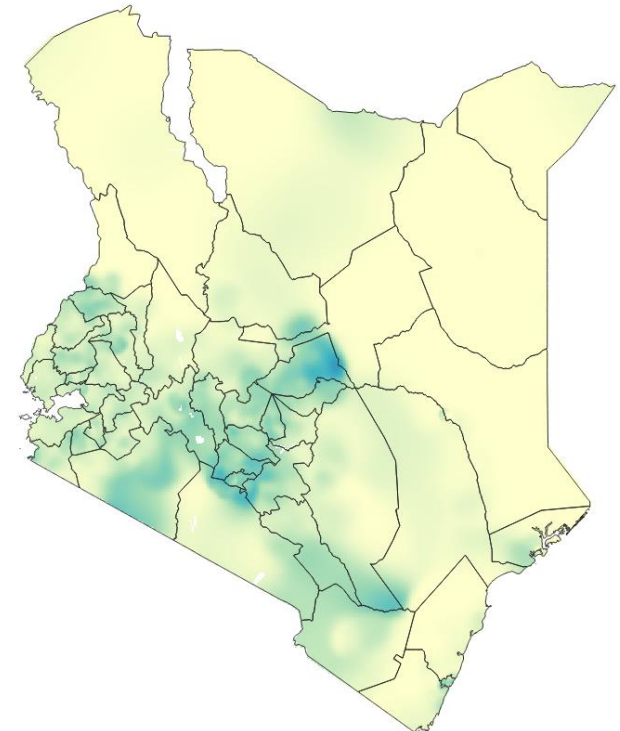
mCPR



Private market share



Private prevalence



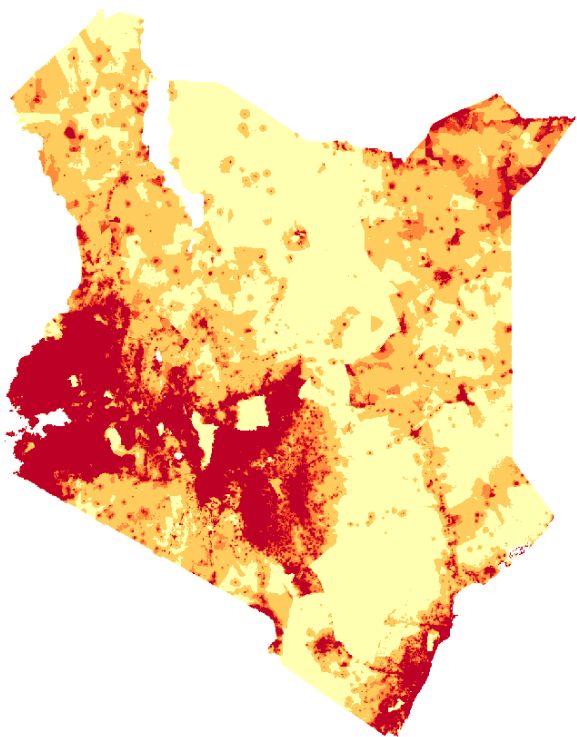
Source: DHS 2014



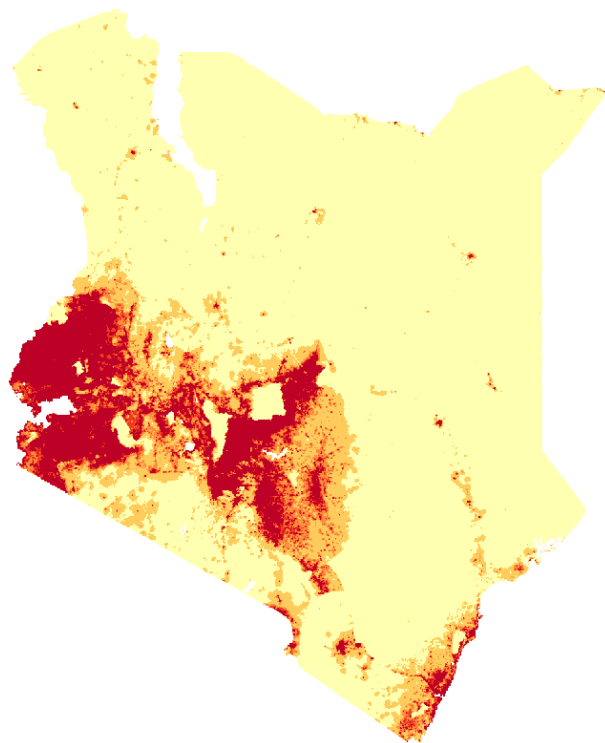
Women, users, and private users

Absolute numbers useful to think about how to focus services and distribution of commodities

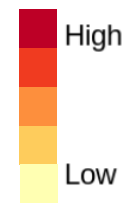
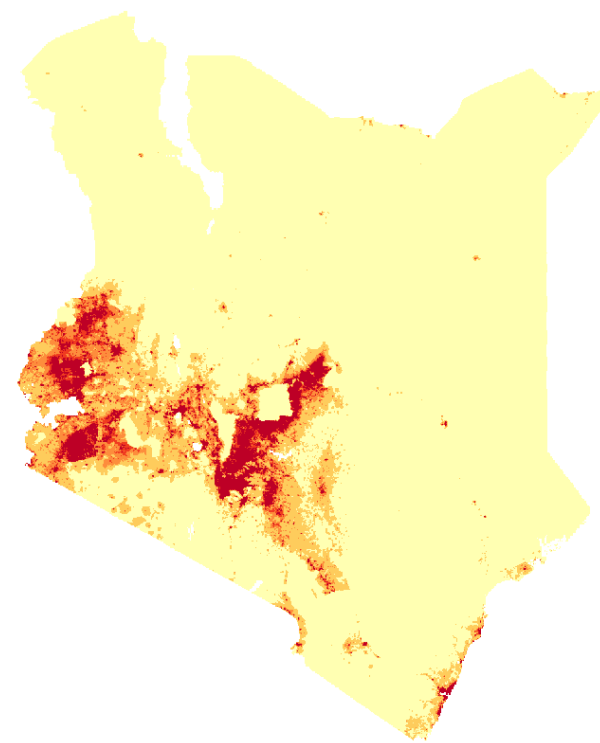
Population of women 15–49



Modern method users



Private users

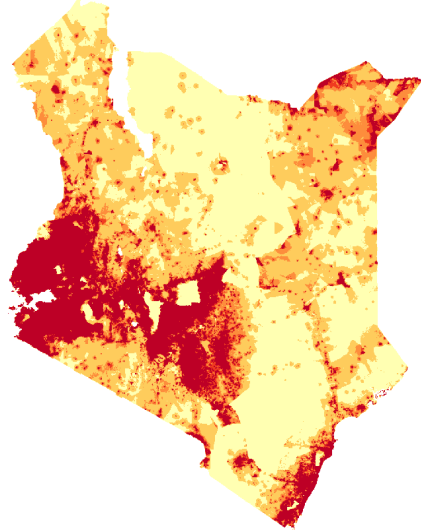


Source: DHS 2014, WorldPop

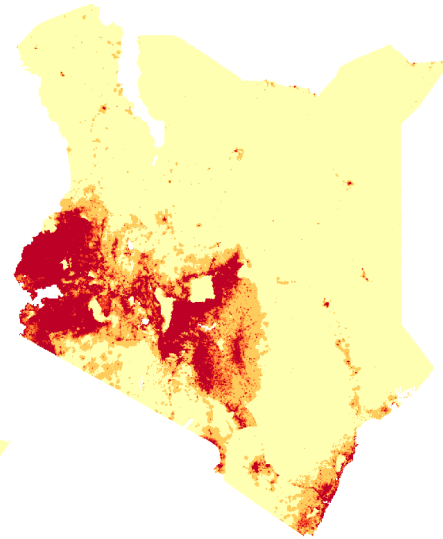


Women, users, unmet need, and public/private users

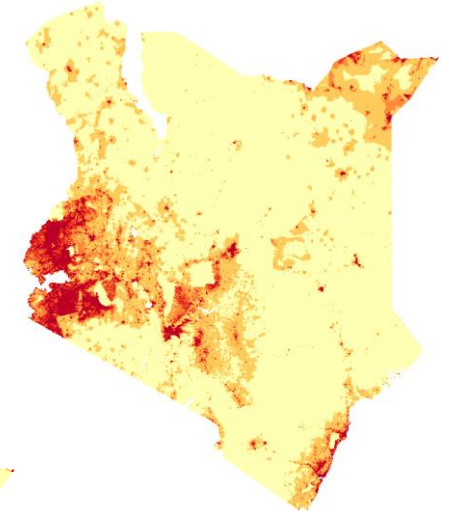
Population of women 15–49



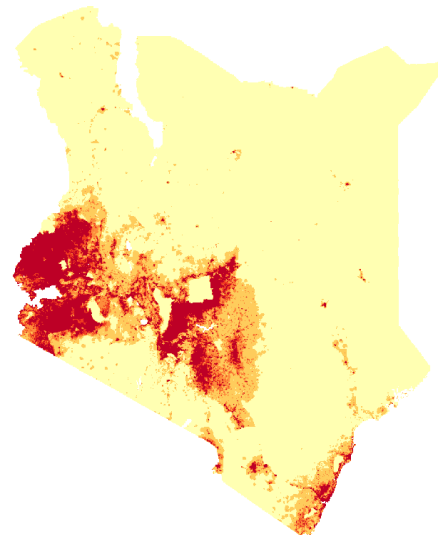
Modern method users



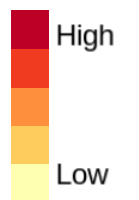
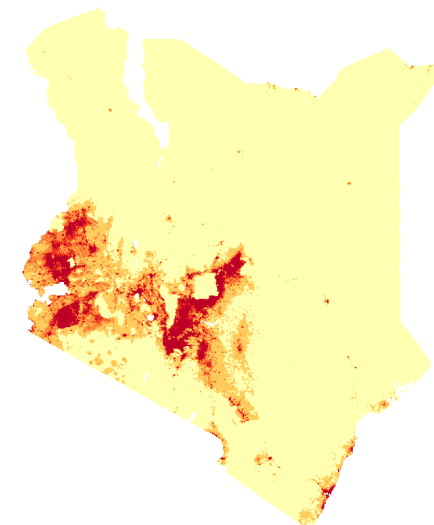
Unmet need



Public users

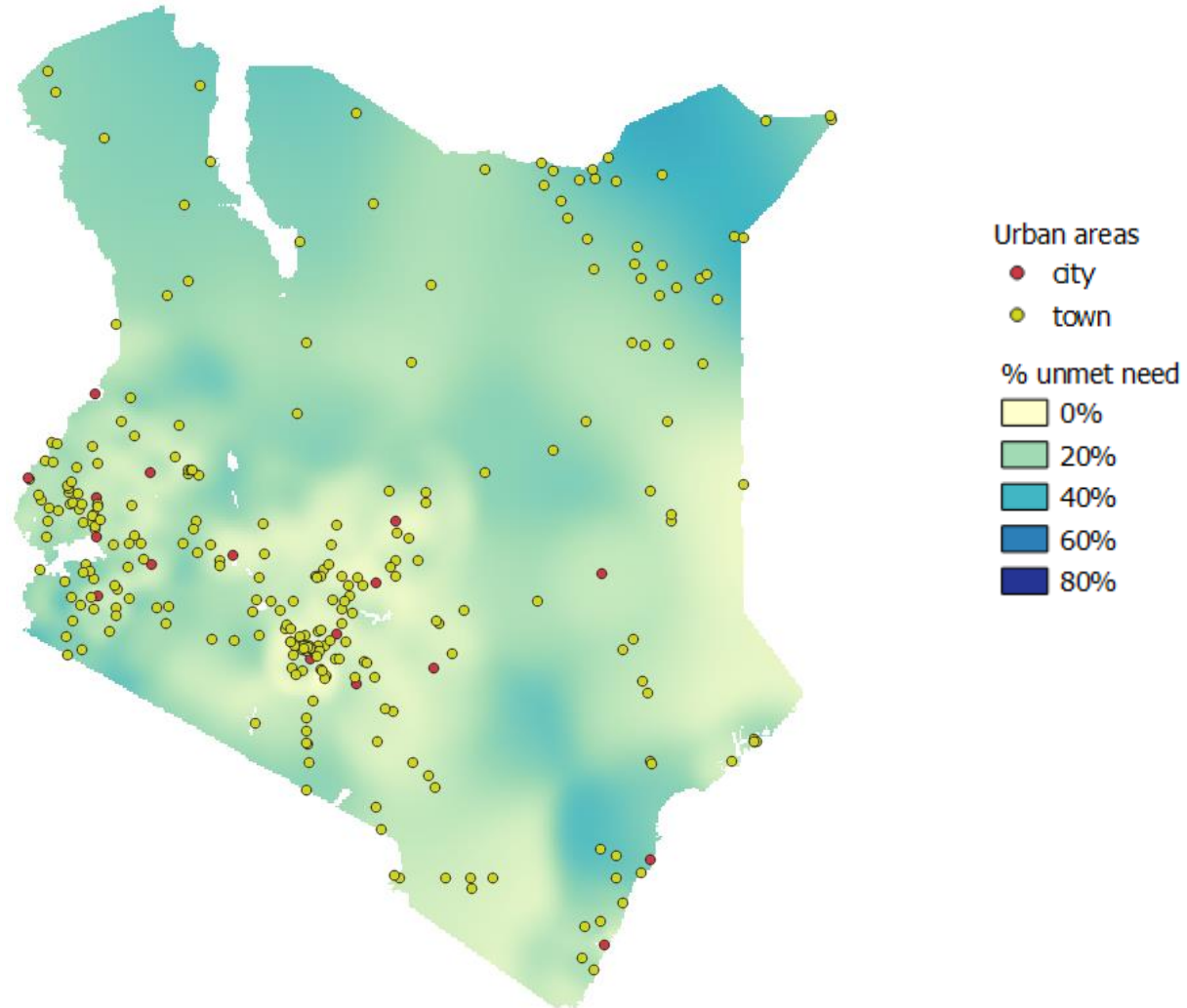


Private users



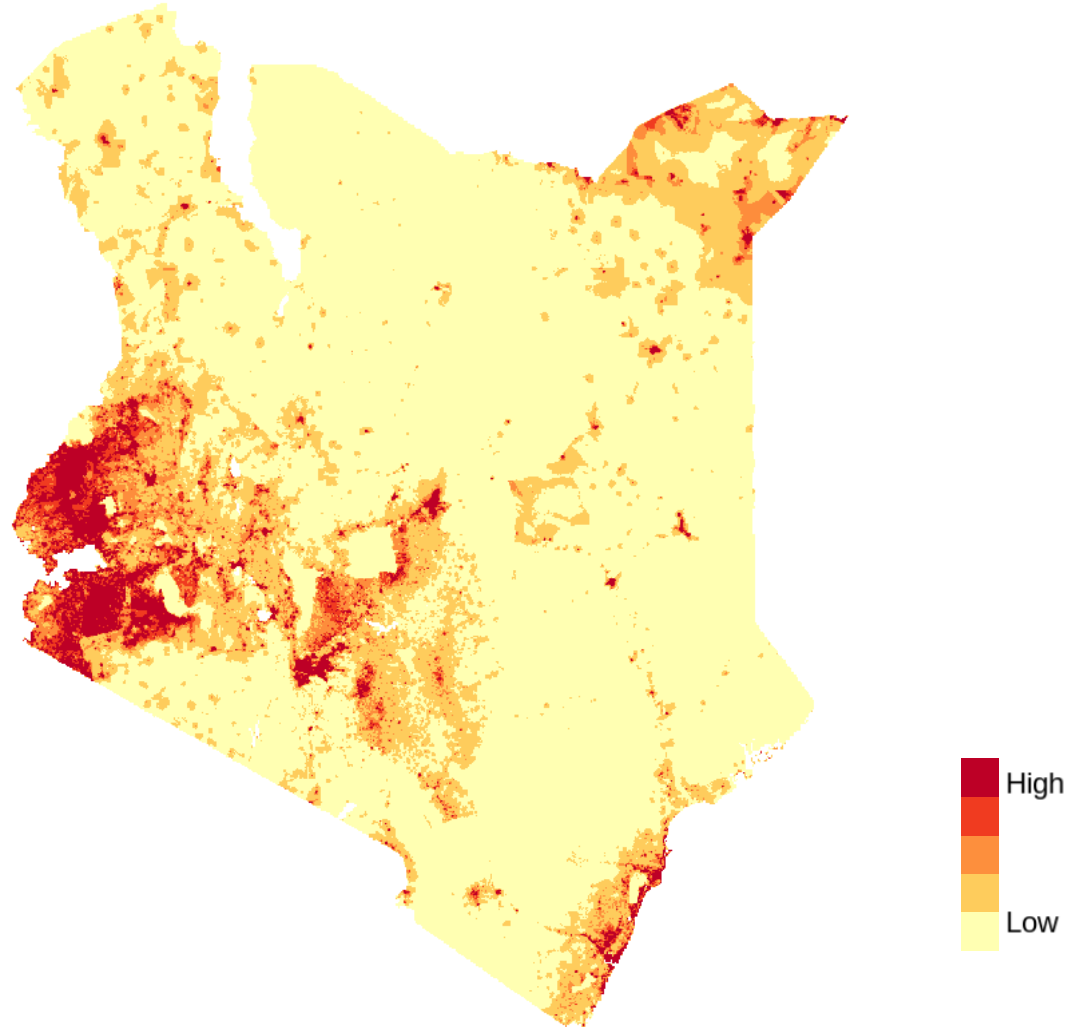


Percent of women with unmet need



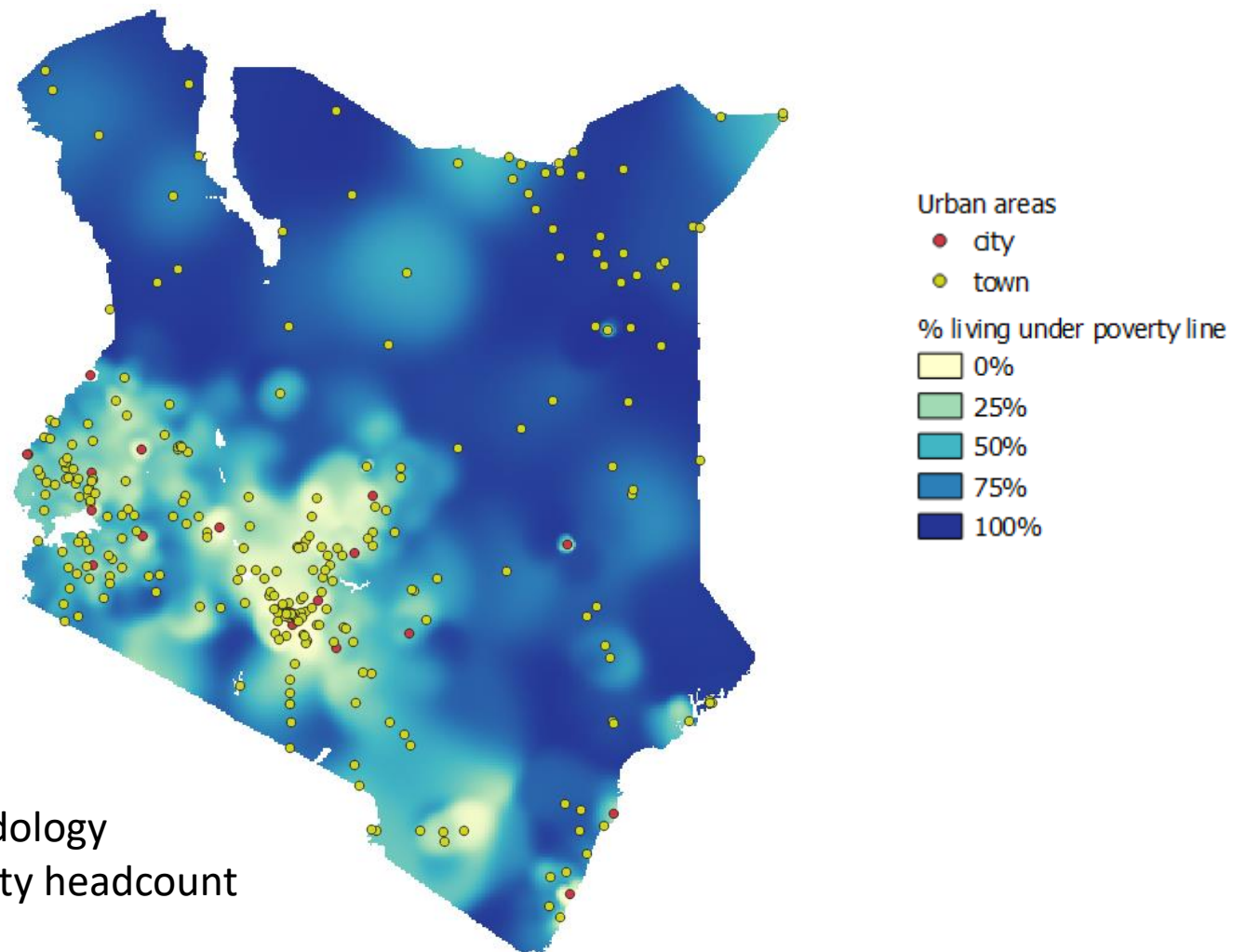


Number of women with unmet need





Percent of women living below the poverty line (\$1.90)

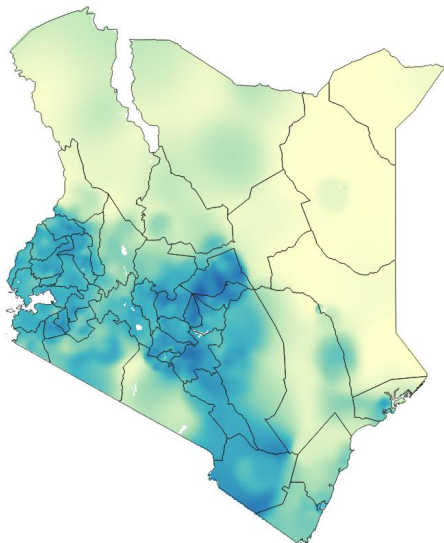


Based on Avenir's methodology developed to apply poverty headcount data to the wealth index

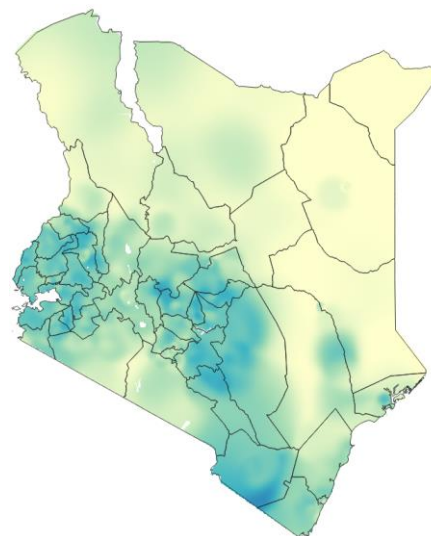


mCPR, private and public sector use, and income levels

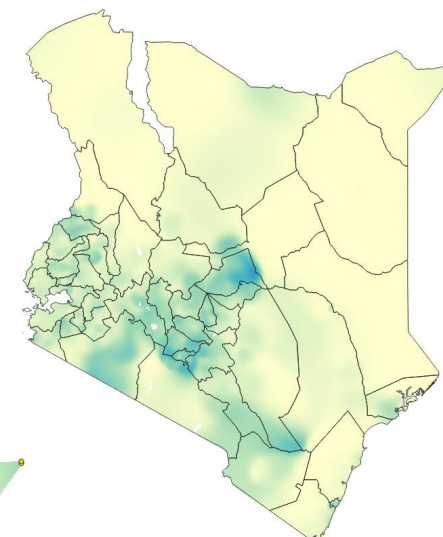
mCPR



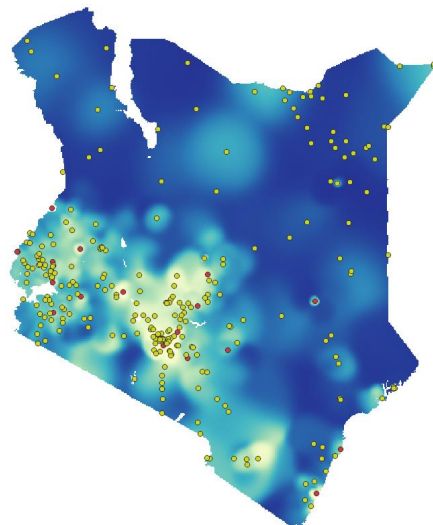
Public prevalence



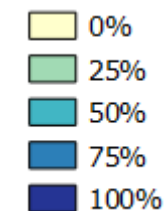
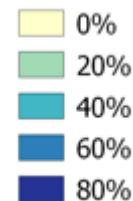
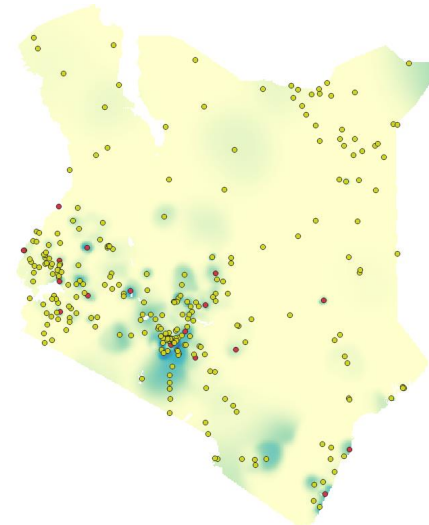
Private prevalence



% living on < \$1.90



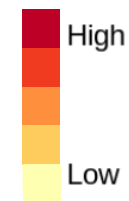
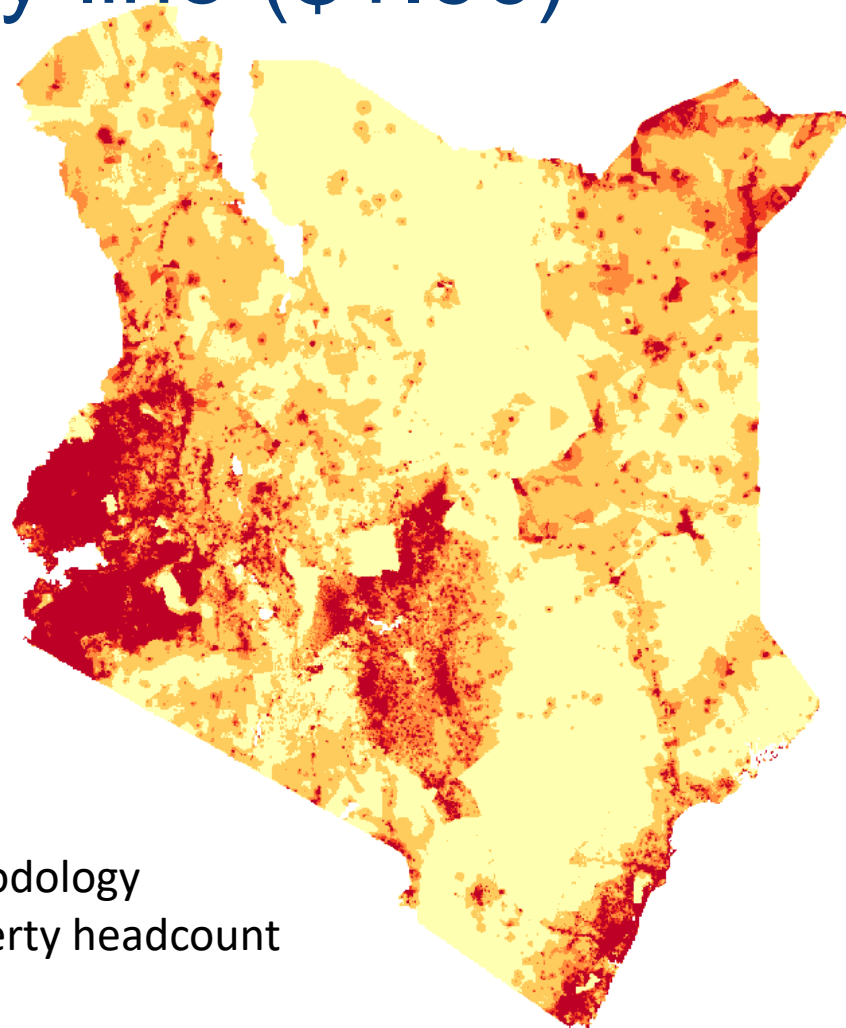
% living on > \$5.50



Source: DHS 2014



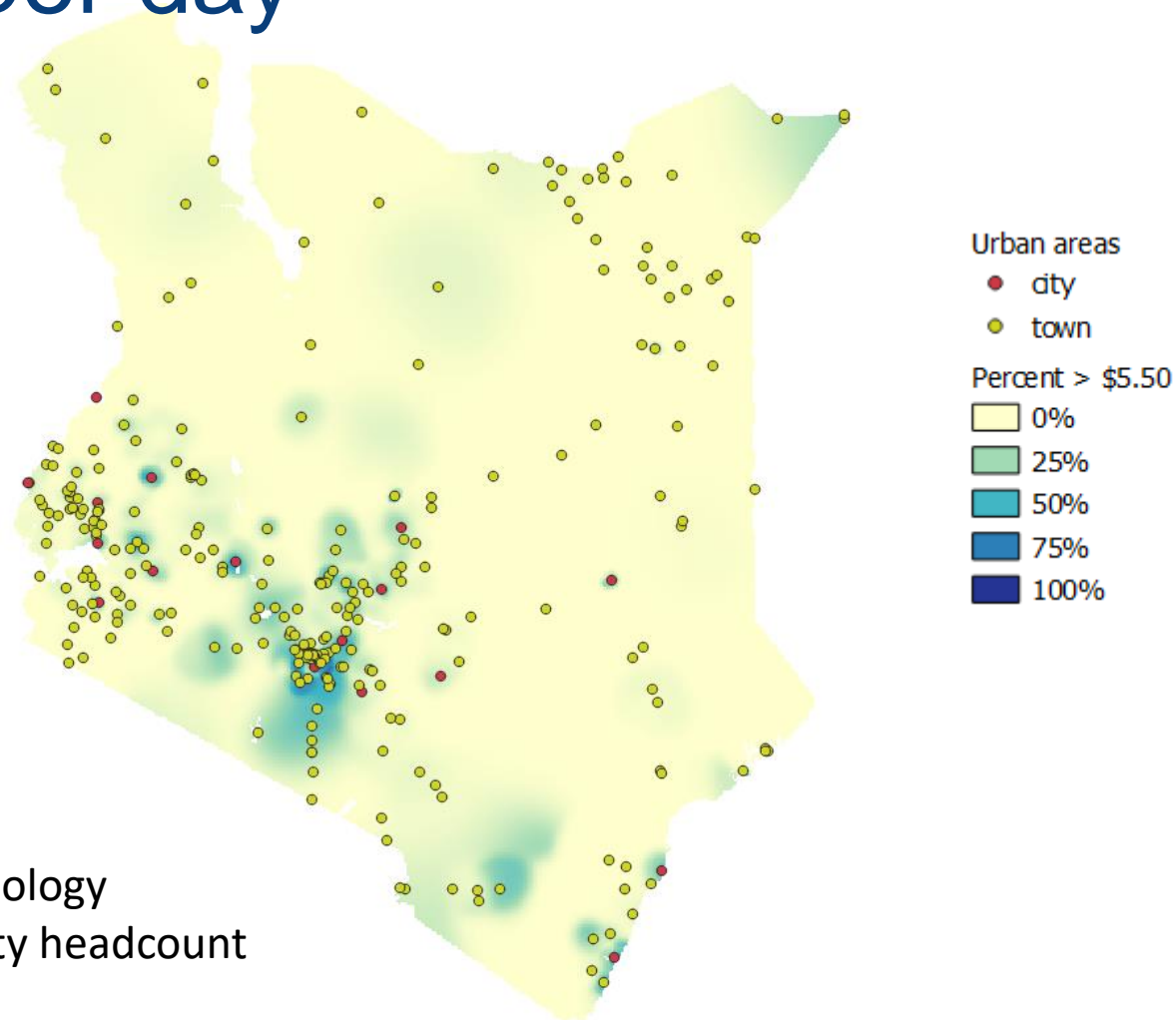
Number of women living below the poverty line (\$1.90)



Based on Avenir's methodology developed to apply poverty headcount data to the wealth index



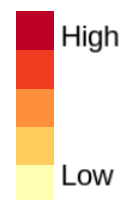
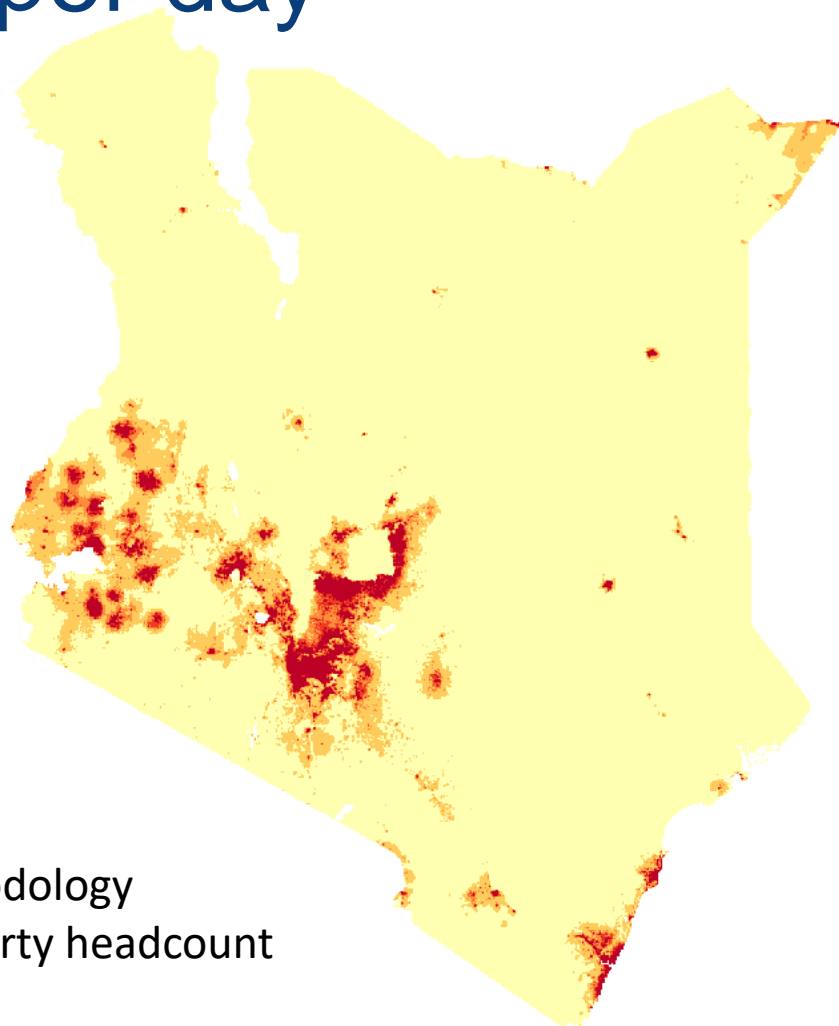
Percent of women living on more than \$5.50 per day



Based on Avenir's methodology developed to apply poverty headcount data to the wealth index



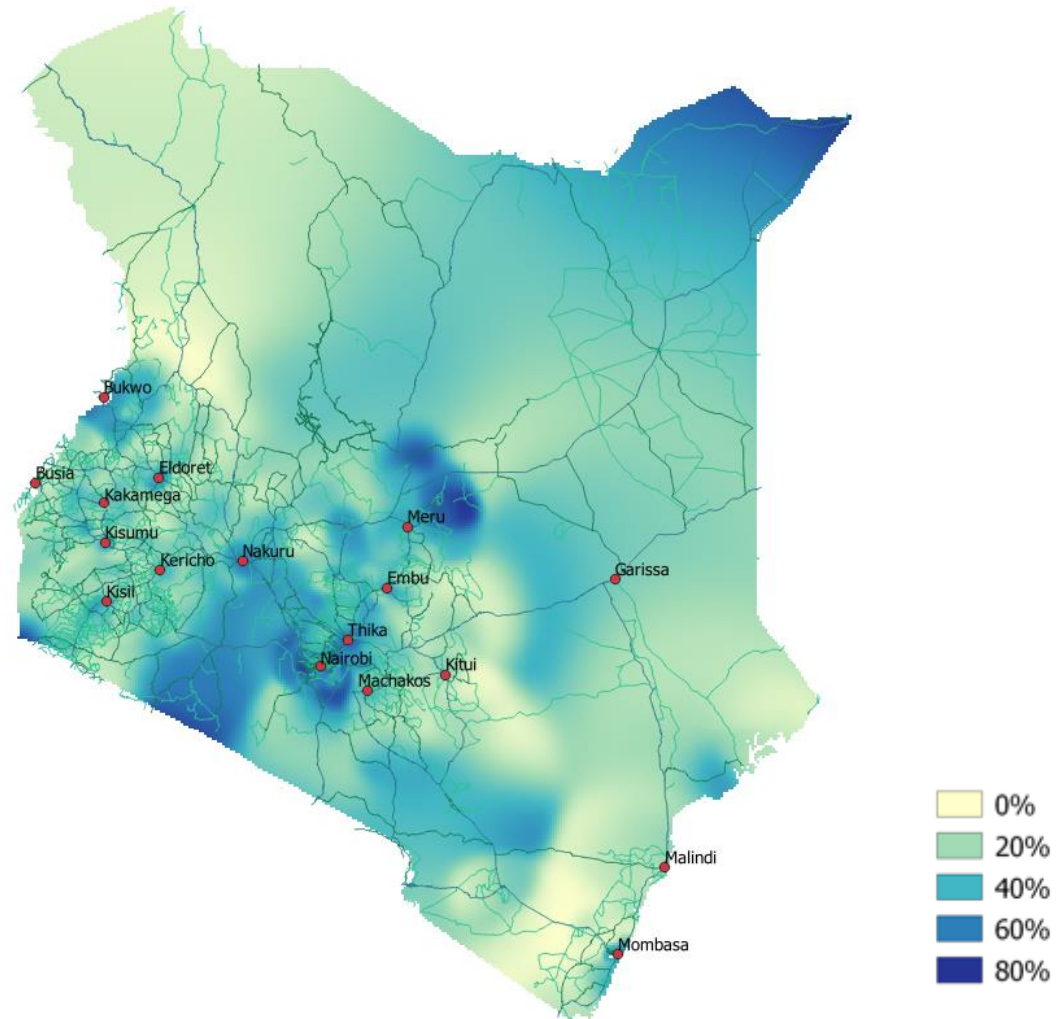
Number of women living on more than \$5.50 per day



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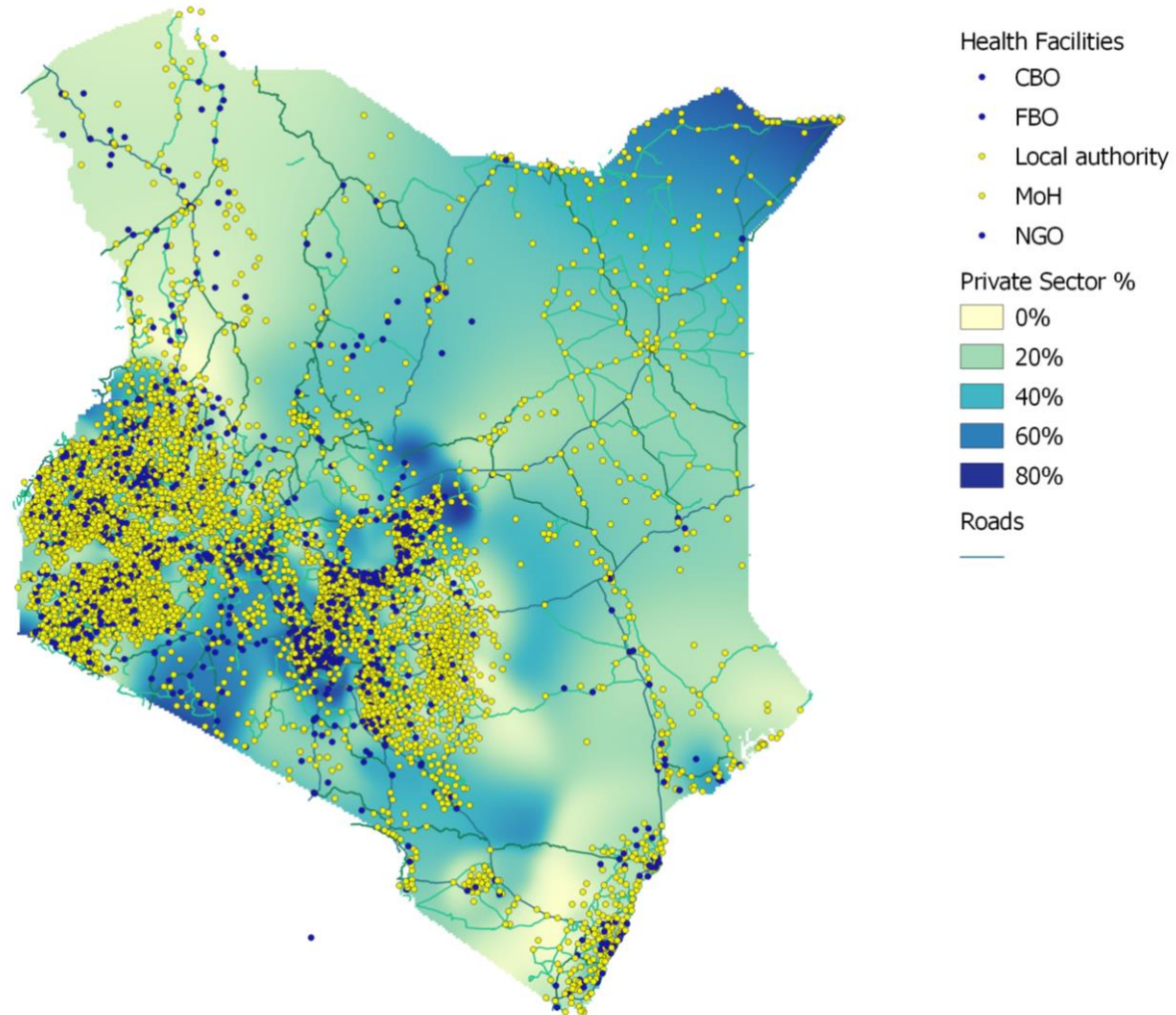


Cities and roads with private market share





Health facilities (WHO database)





Summary

- Approach reveals interesting patterns of use
- Useful for:
 - Advocacy—highlighting role of the private sector
 - Planning—identifying areas with private sector potential
- Similar maps created for: Guinea, Nepal, Tanzania, and Uganda