



# Exploring Geospatial Patterns of Private Sector FP Use: Nepal

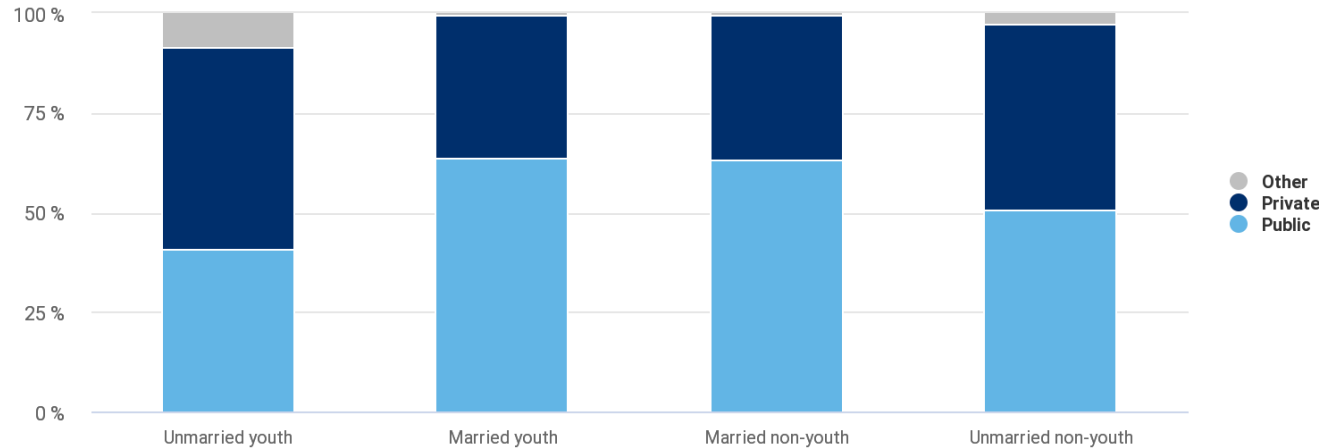
Meghan Reidy and Michelle Weinberger  
Avenir Health



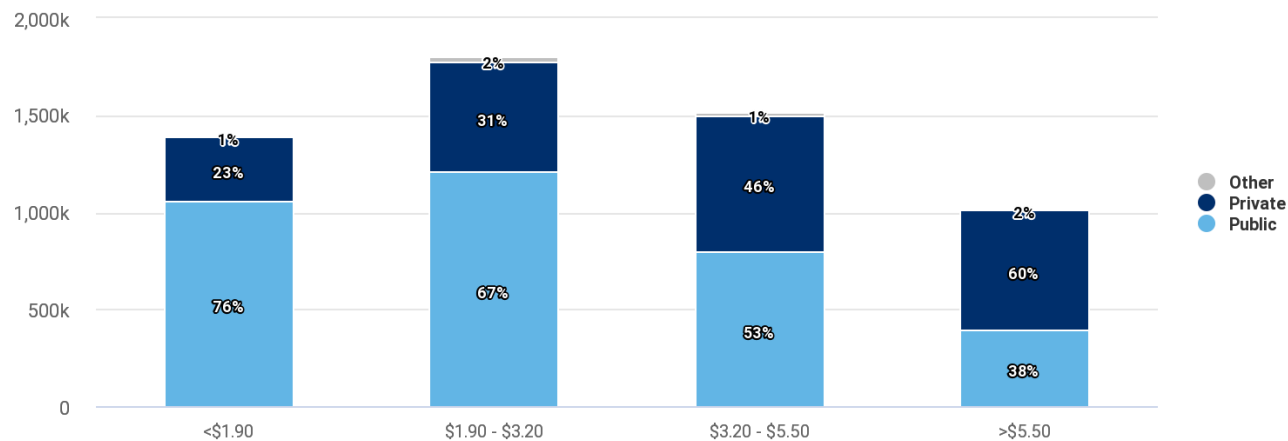


# Private sector use patterns often explored by socio-demographics

Source mix by age and marital status



Users by income and source (2020)



But what about geographic patterns of use across a county?

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)



# Available maps: Nepal

- **Modern method prevalence**
  - **mCPR** = modern method users / all women
  - **Supply method prevalence** = supply method users / all women
  - **LAPM prevalence** = LAPM users / all women
  - **Private prevalence** = modern method users getting method from private sector / all women
  - **Public prevalence** = modern method users getting method from public sector / all women
- **Private sector market share**
  - **Total private market share** = modern method users getting method from private sector / modern method users
  - **Supply method private market share** = supply method users getting method from private sector / modern method users
  - **LAPM private market share** = LAPM users getting method from private sector / modern method users
- **Population of WRA**
- **Modern method users**
  - **Total modern method users**
  - **Supply method users**
  - **LAPM users**
  - **Private users**
  - **Public users**
- **Unmet need**
- **Potential market populations**
  - **Cohabiting couples, nonusers, wanting to space**
  - **Cohabiting couples, nonusers, wanting to limit**
  - **Non cohabiting couples, nonusers**
- **CRS outlets** = location of outlets ever covered by CRS
- **Income levels (relative and absolute)**
  - **Below the poverty line (\$1.90)**
  - **Above \$5.50**



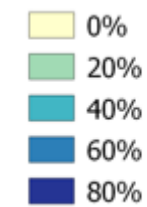
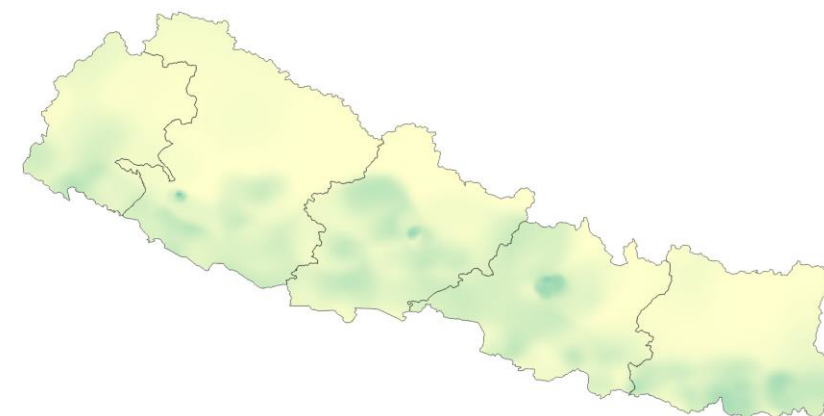
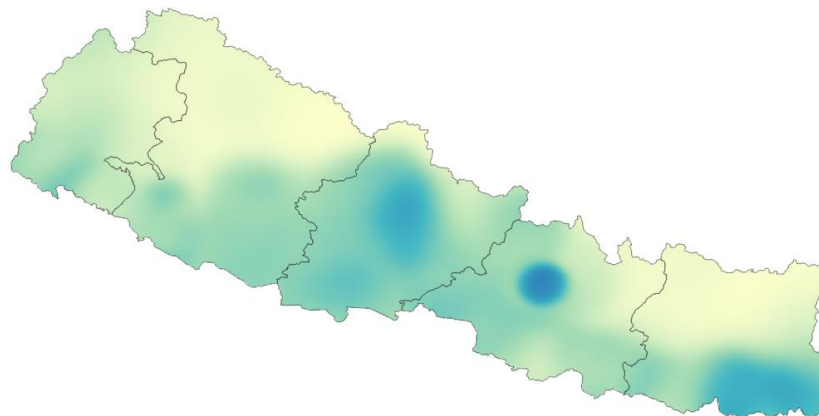
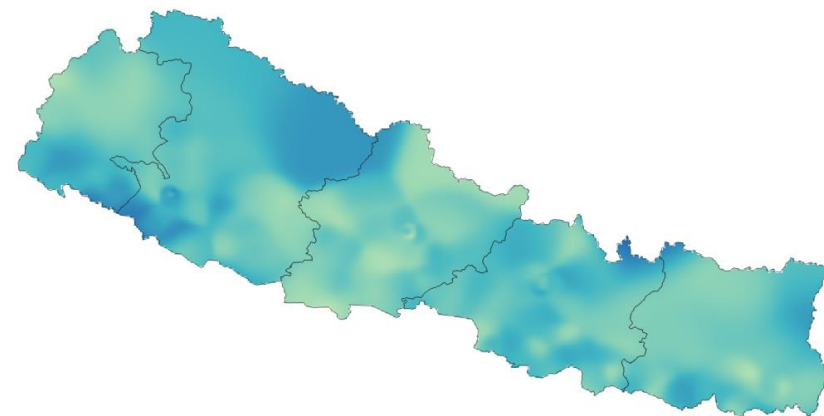
# mCPR and private sector use

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



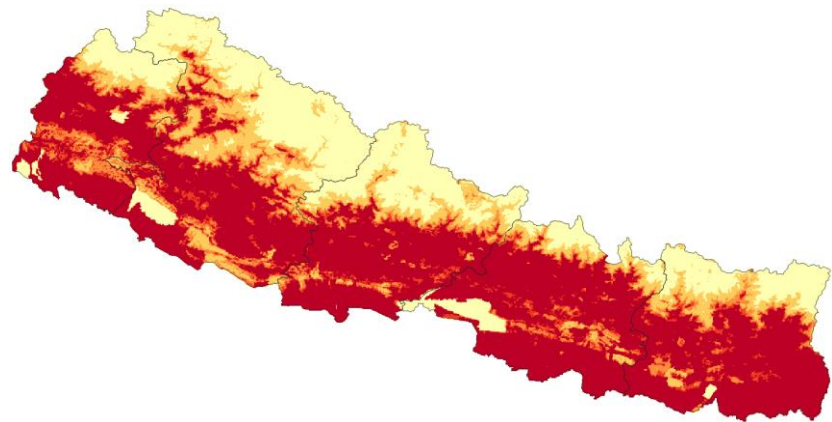
Source: DHS 2016



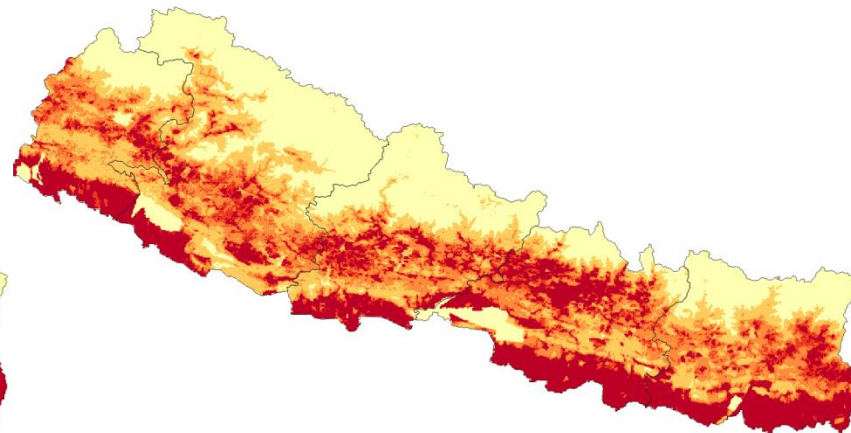
# Women, users, and private users

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

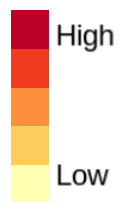
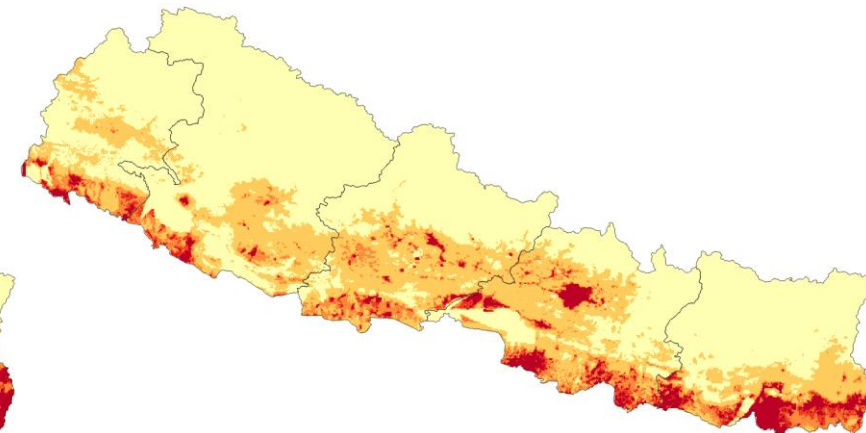
Population of women 15–49



Modern method users



Private users

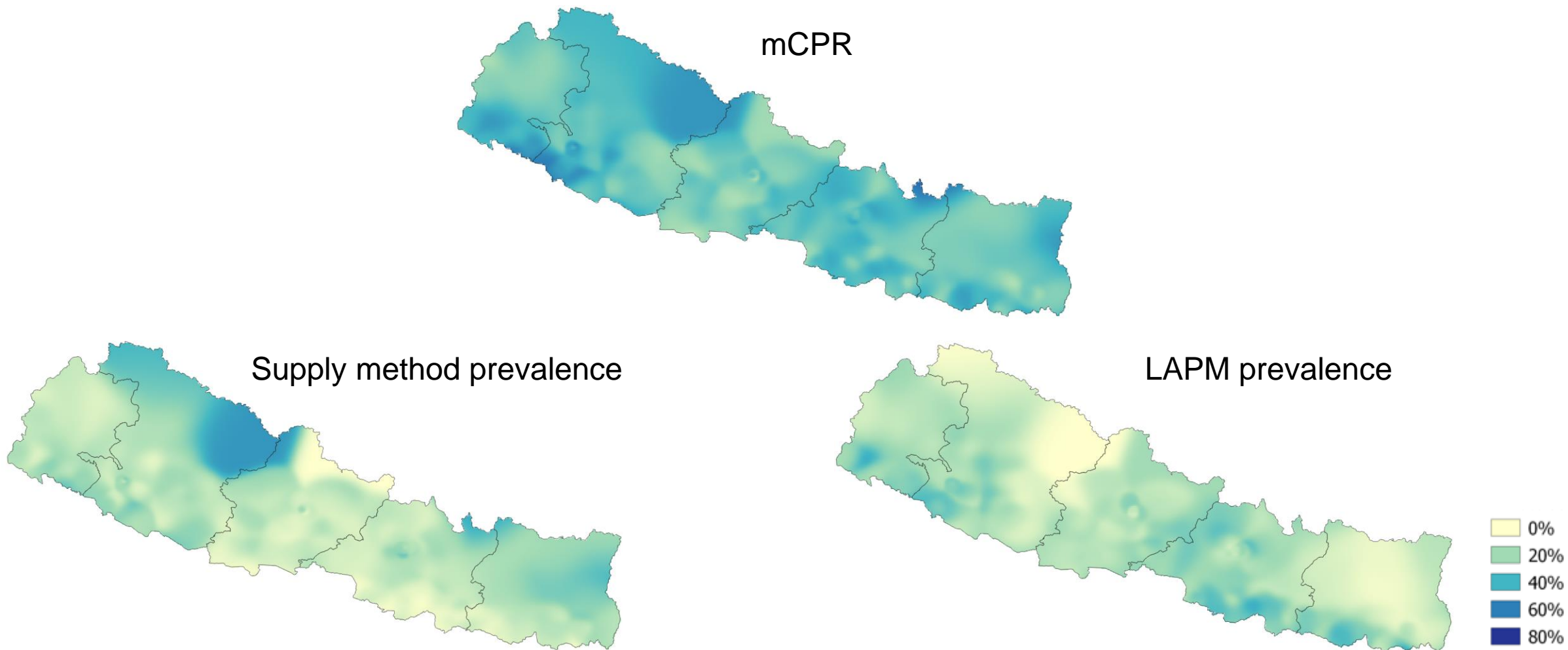


Source: DHS 2016, WorldPop





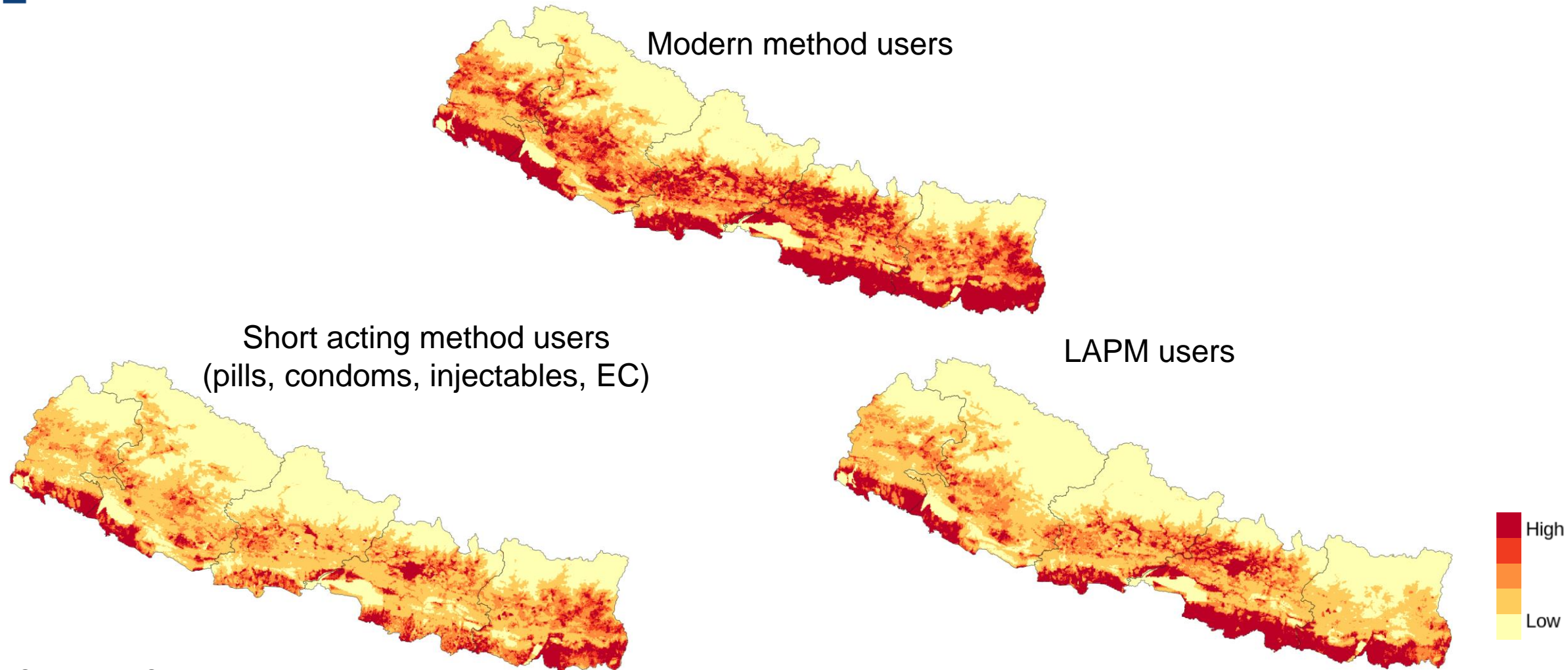
# Modern method use



Source: DHS 2016



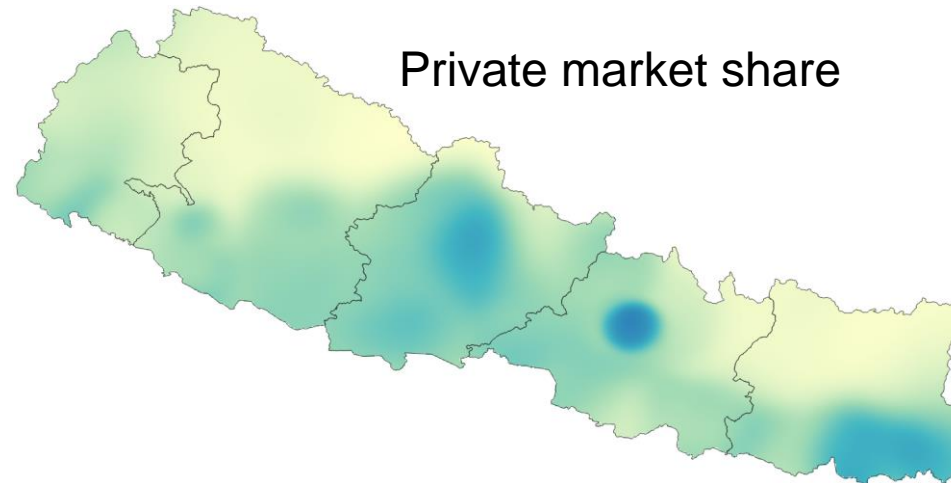
# Modern method user



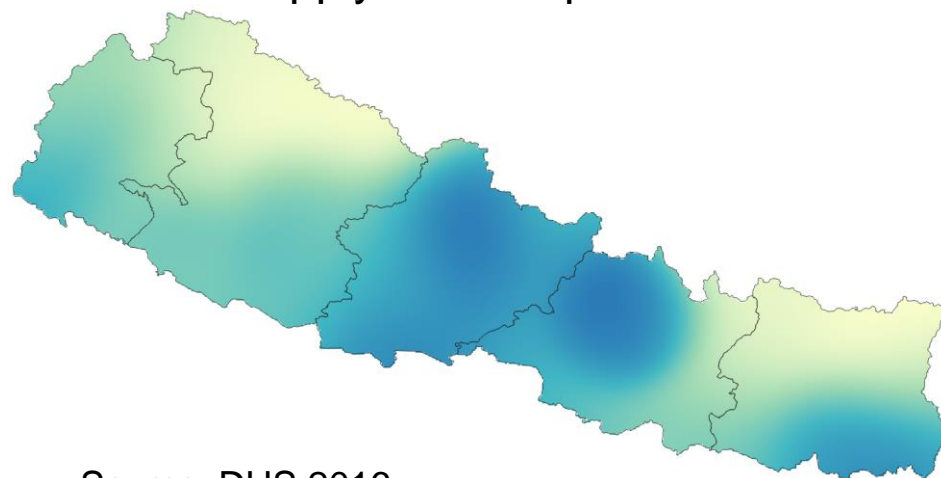
Source: DHS 2016



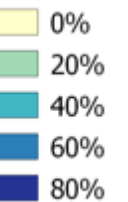
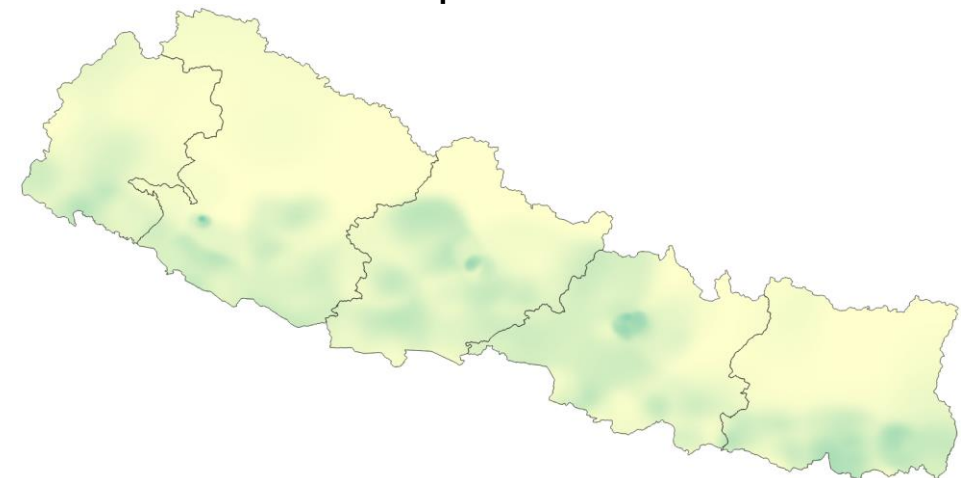
# Private sector market share



Supply method private market share



LAPM private market share

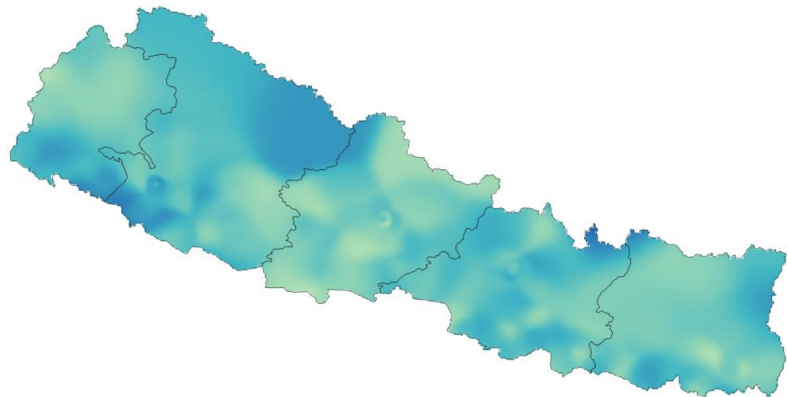


Source: DHS 2016

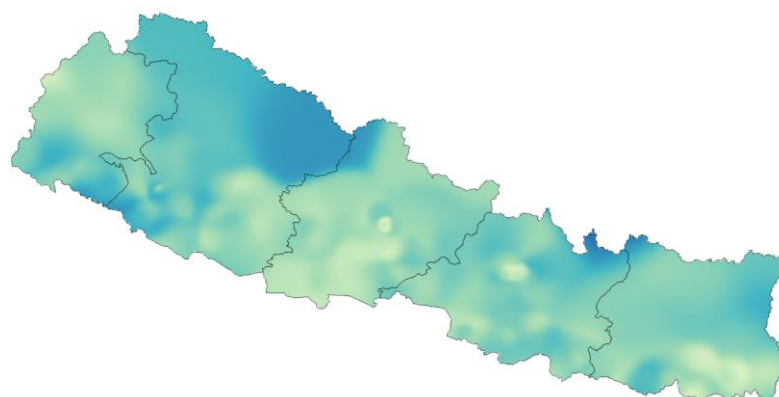


# mCPR, income level, and public and private sector use

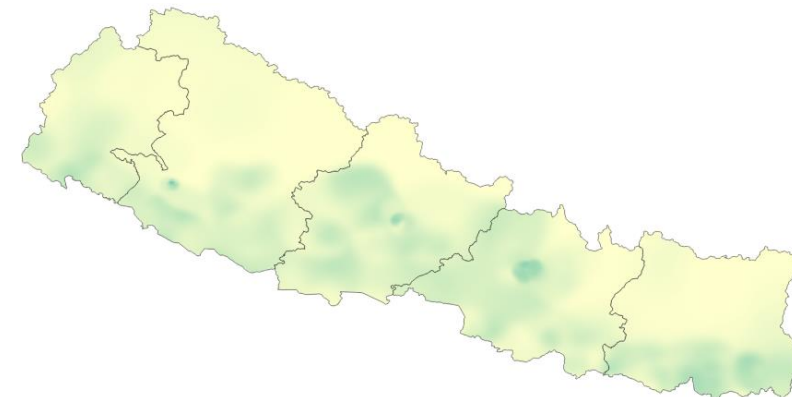
mCPR



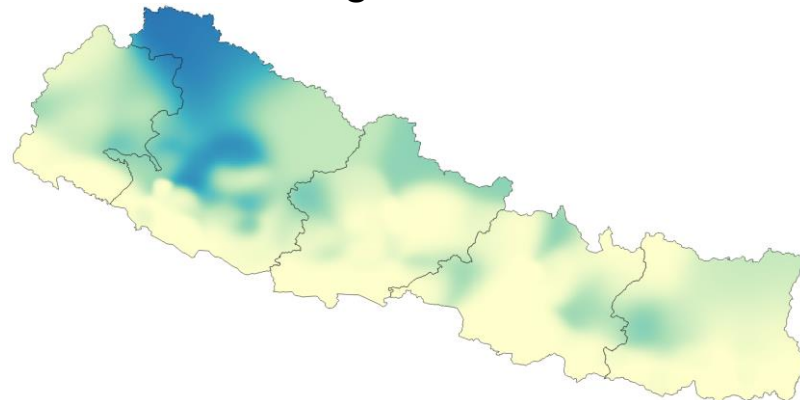
Public prevalence



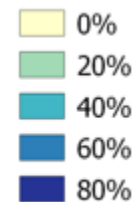
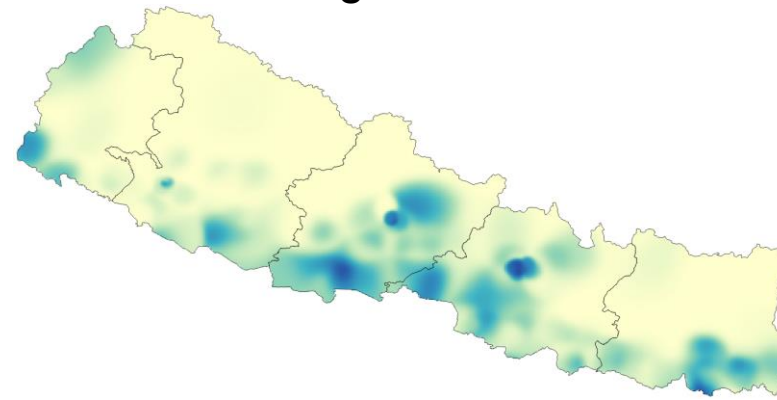
Private prevalence



% living on < \$1.90



% living on > \$5.50

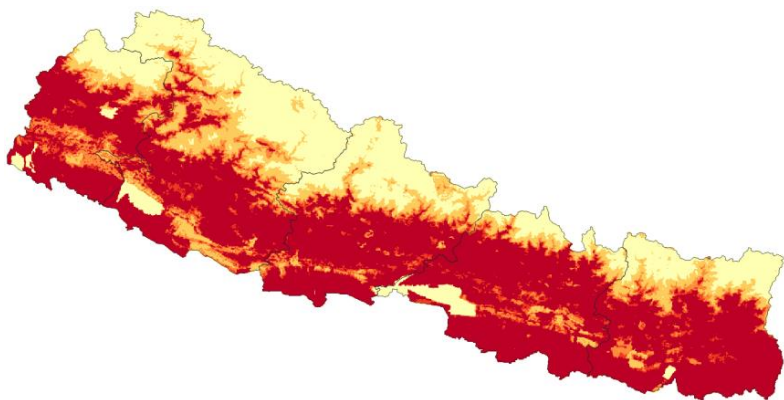


Source: DHS 2016

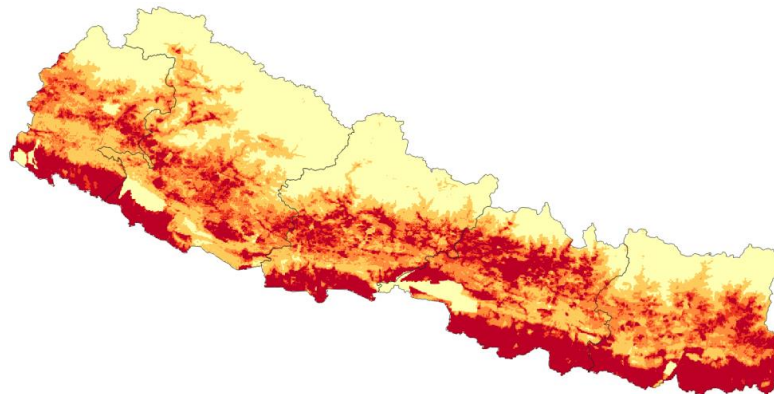


# Women, users, unmet need, public and private users

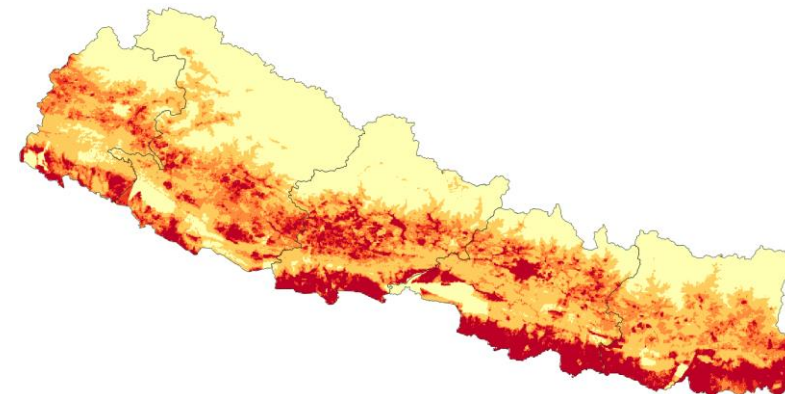
Population of women 15–49



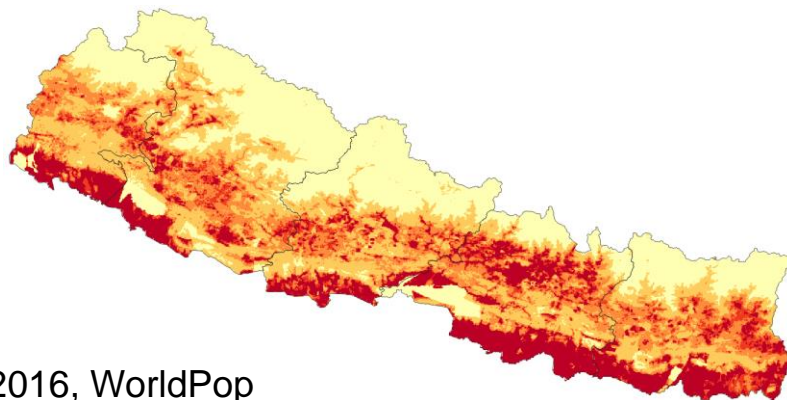
Modern method users



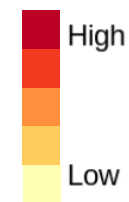
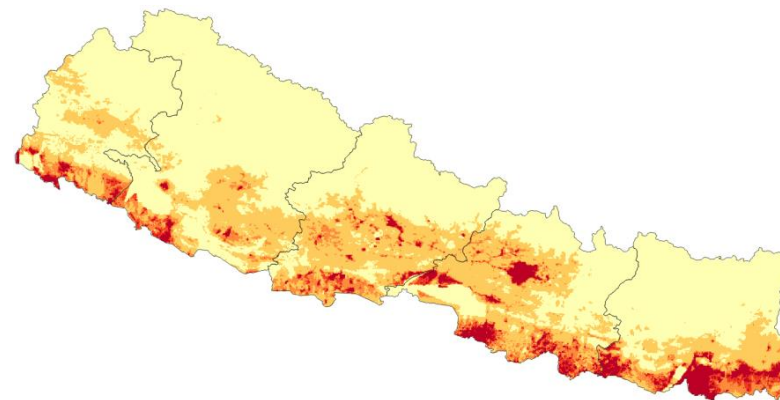
Unmet need



Public users



Private users

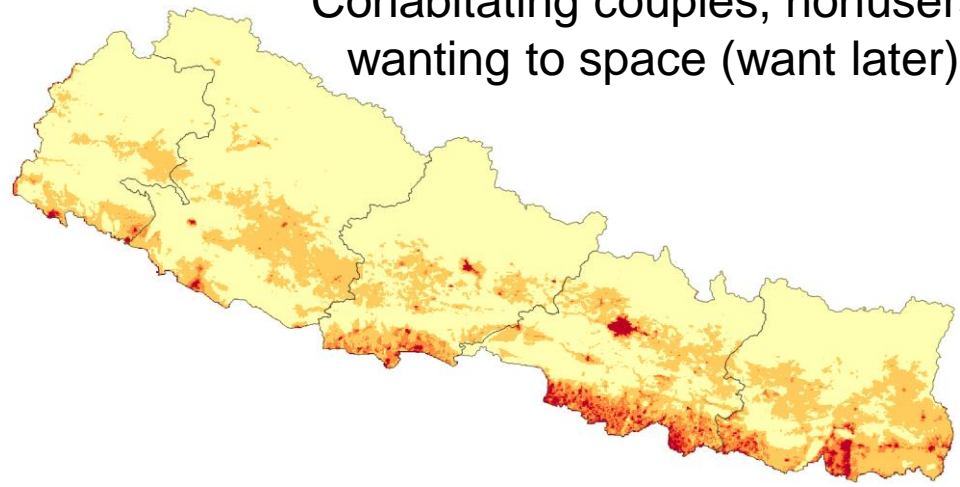


Source: DHS 2016, WorldPop

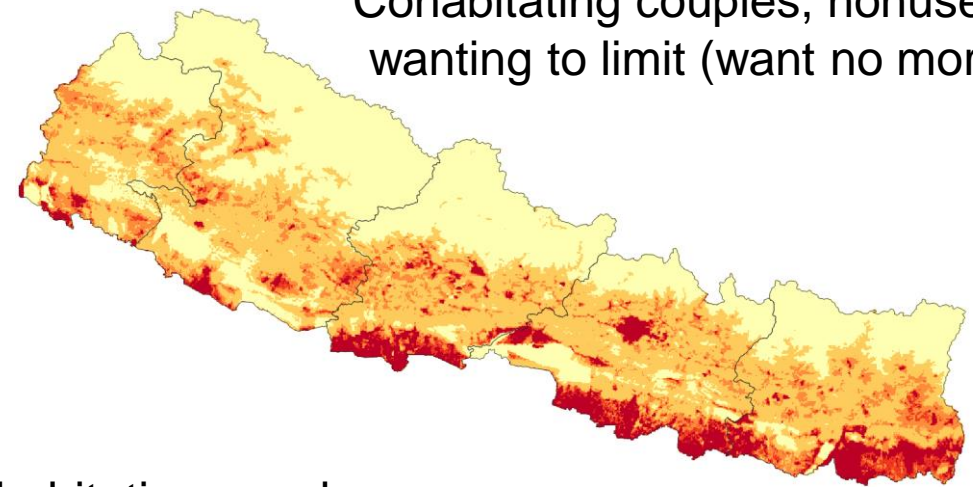


# Potential market populations

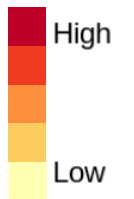
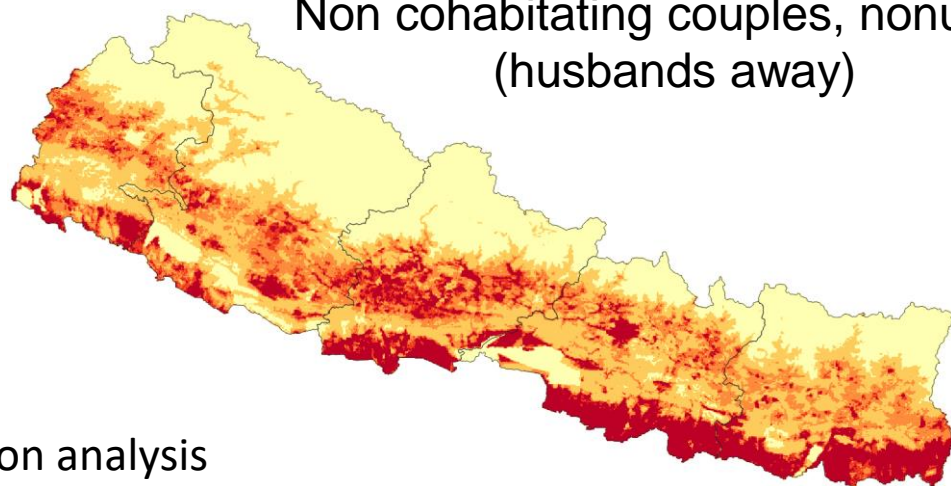
Cohabiting couples, nonusers,  
wanting to space (want later)



Cohabiting couples, nonusers,  
wanting to limit (want no more)



Non cohabiting couples, nonusers  
(husbands away)



Based on Avenir's market segmentation analysis



# Private market share and CRS outlets

CRS outlets

● Clinic/hospital

● Retailers/wholesalers/distributor

● Sangini provider

Private source %

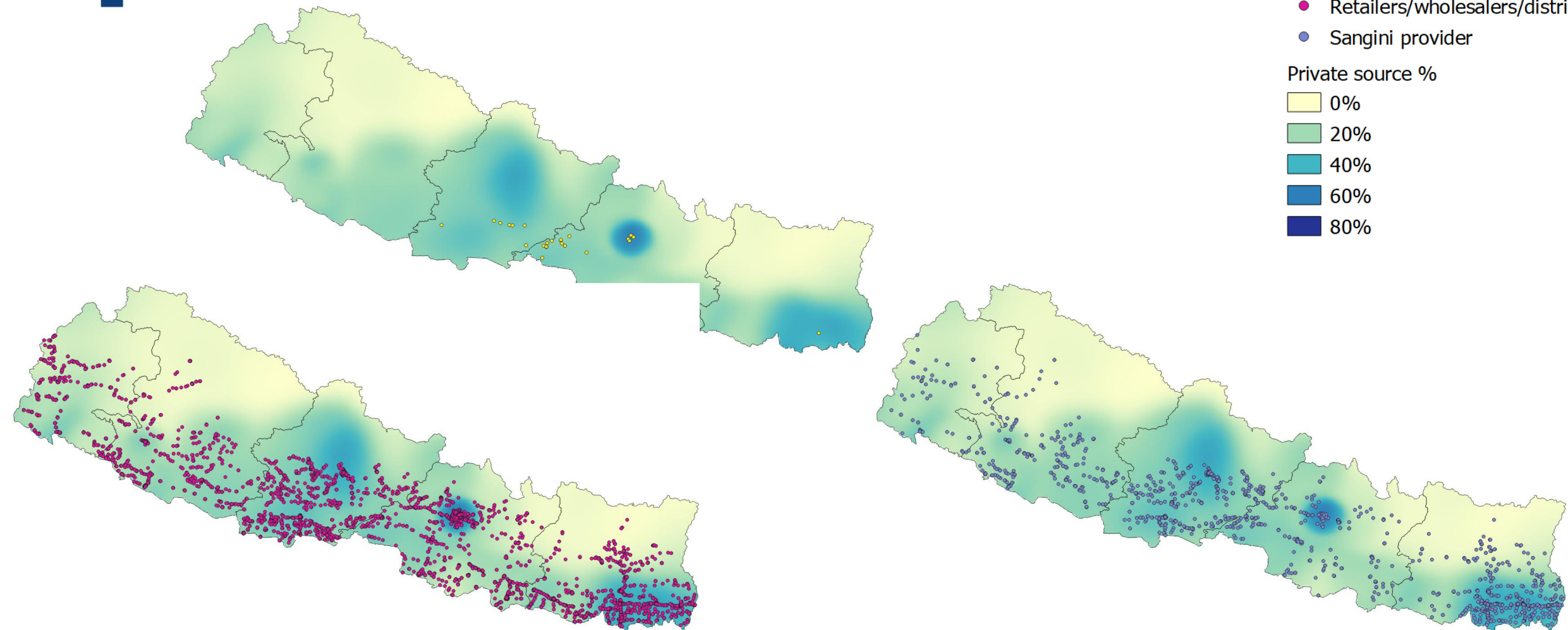
0%

20%

40%

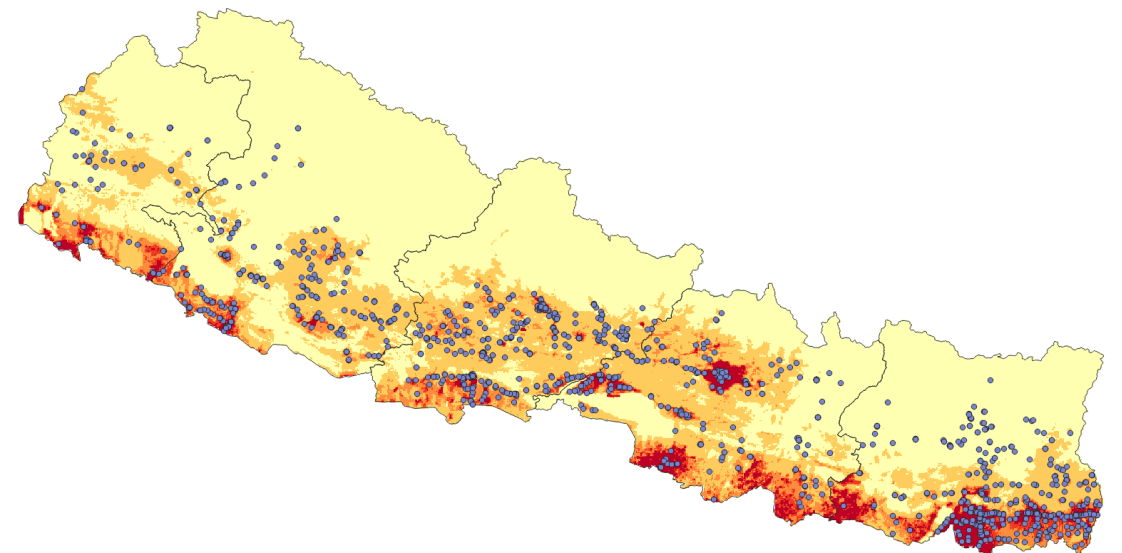
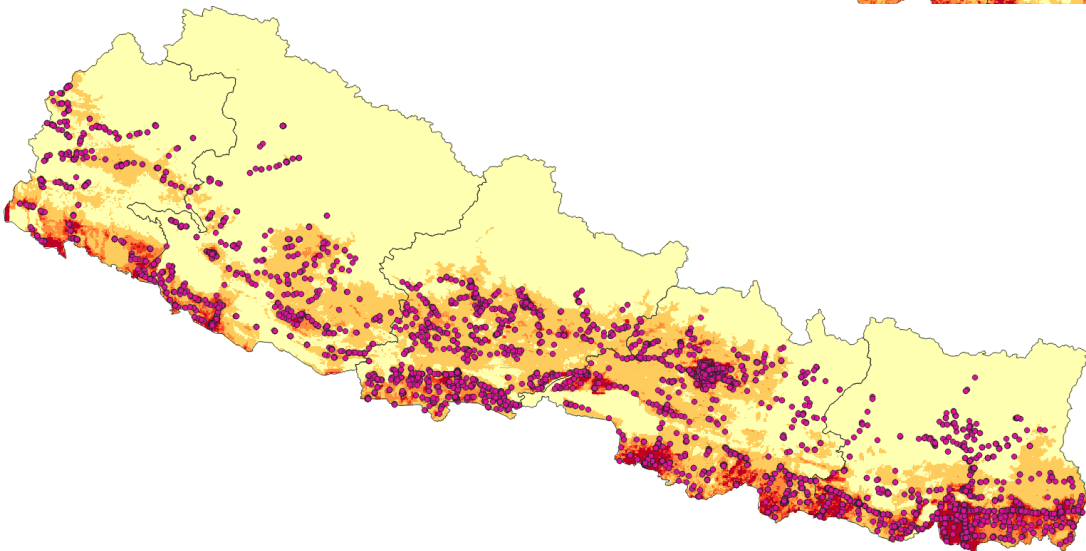
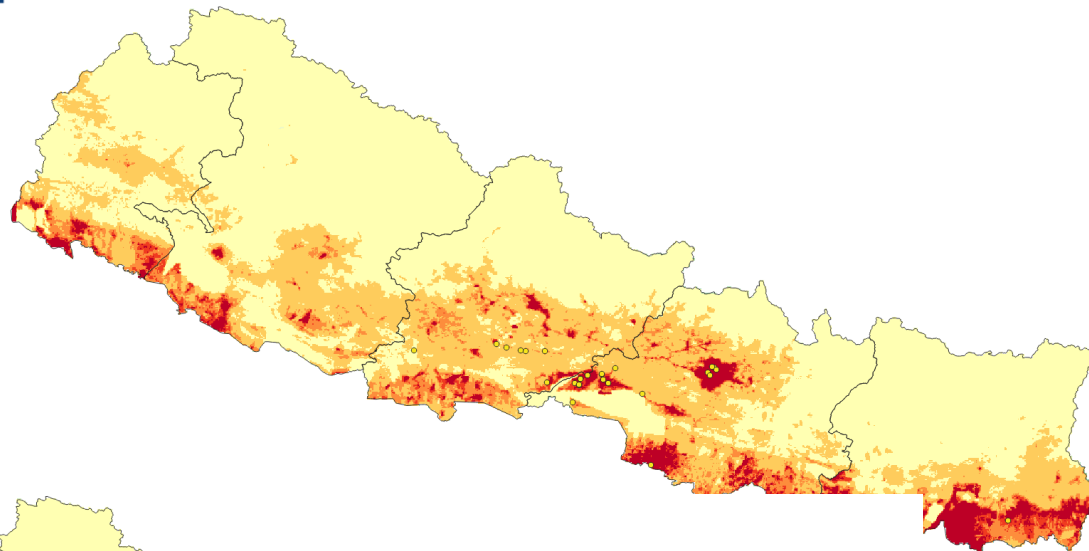
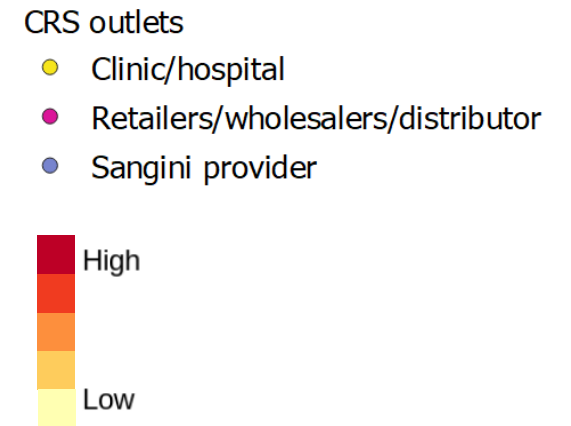
60%

80%





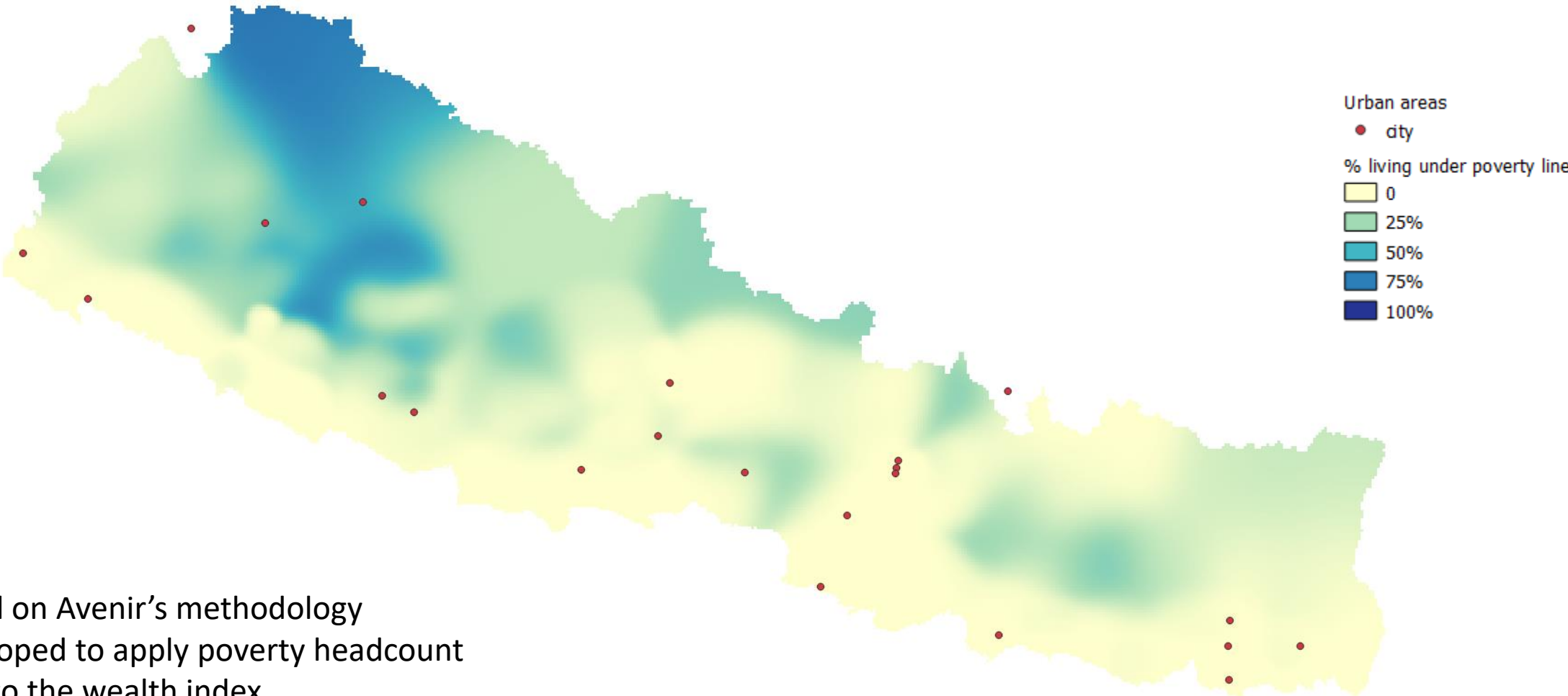
# Private users and CRS outlets







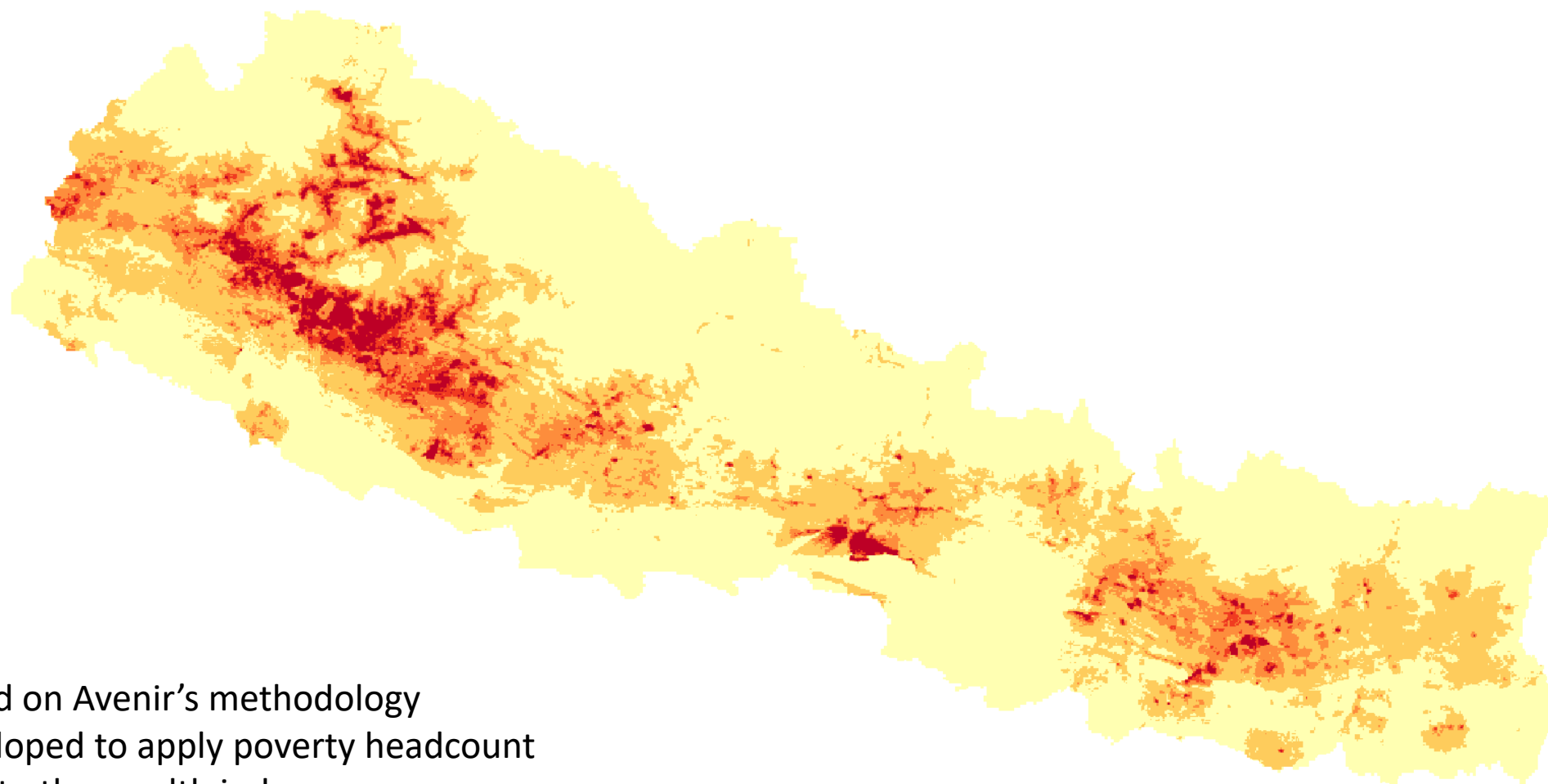
# Percent of women living below the poverty line (\$1.90)



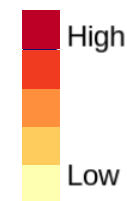
Based on Avenir's methodology developed to apply poverty headcount data to the wealth index



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

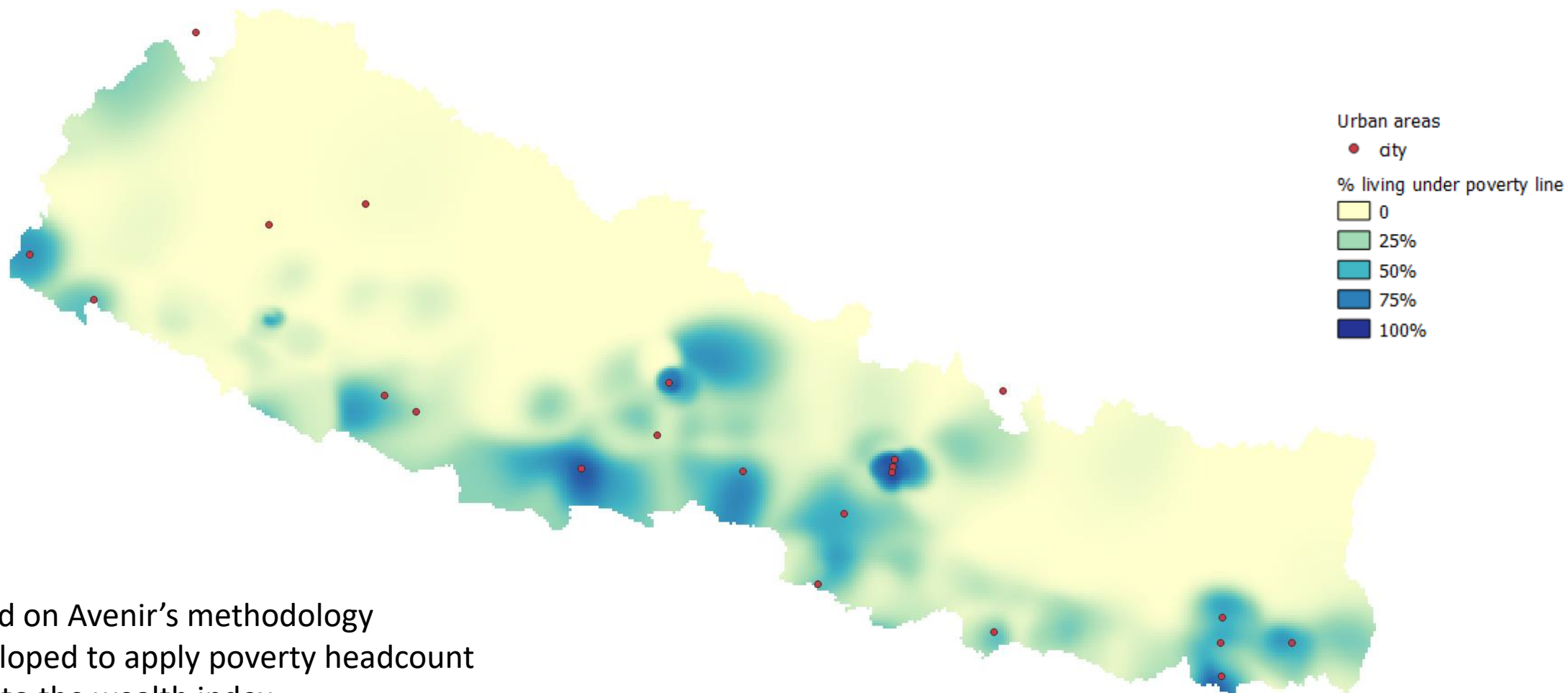


Based on Avenir's methodology developed to apply poverty headcount data to the wealth index





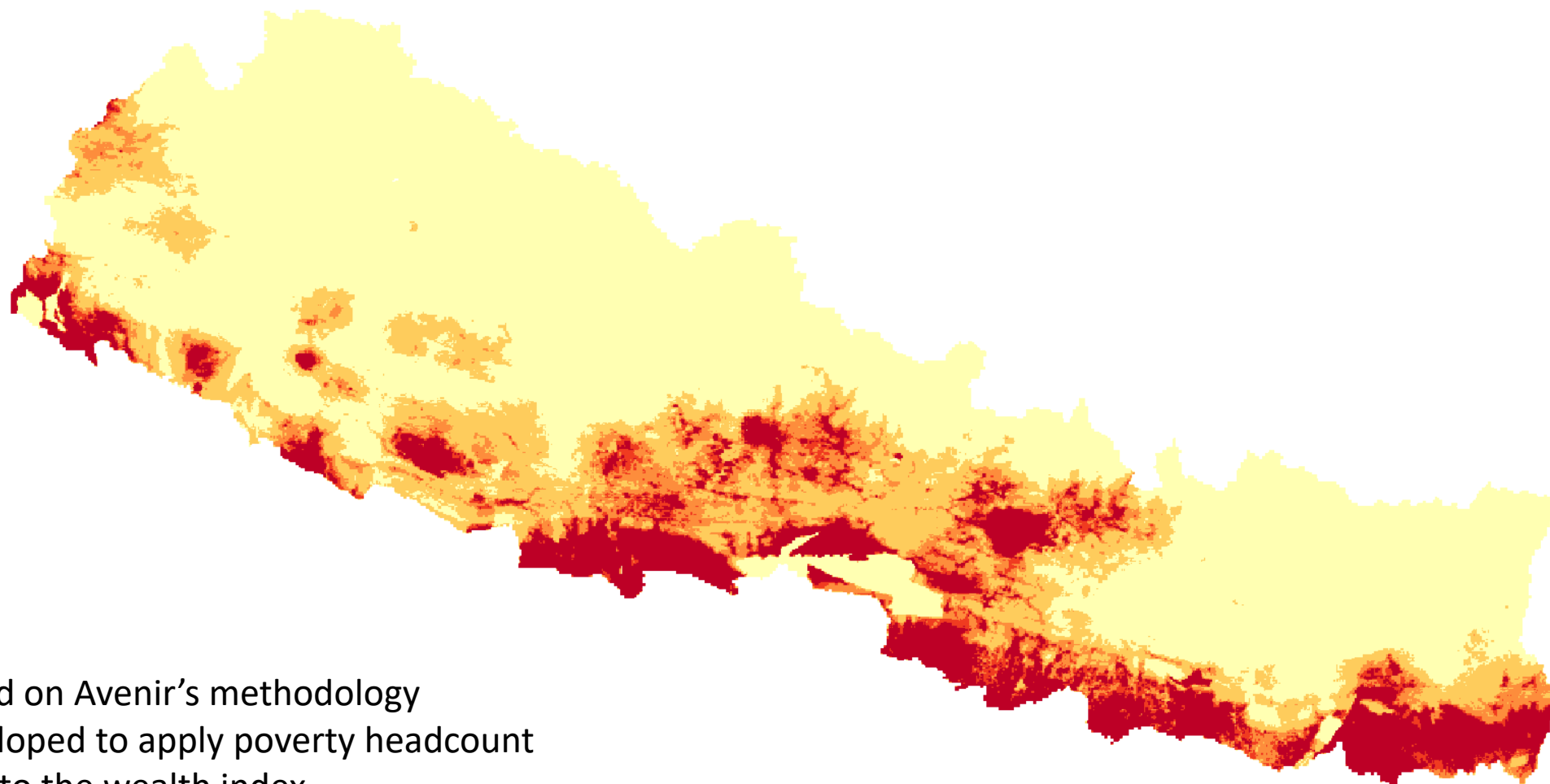
# Percent of women living on more than \$5.50 per day



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



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

