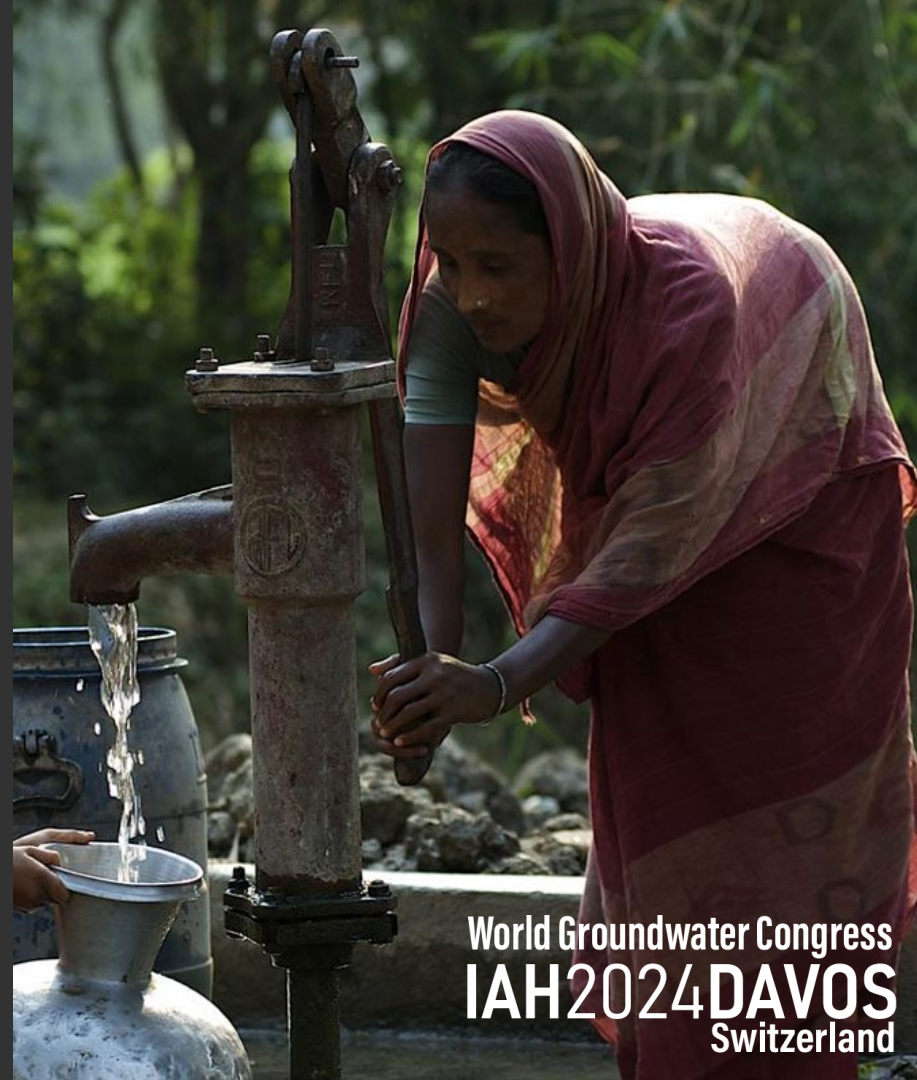


# Estimating the global extent of groundwater self-supply

Tim Foster & Diana Gonzalez  
UTS Institute for Sustainable Futures



World Groundwater Congress  
**IAH2024 DAVOS**  
Switzerland

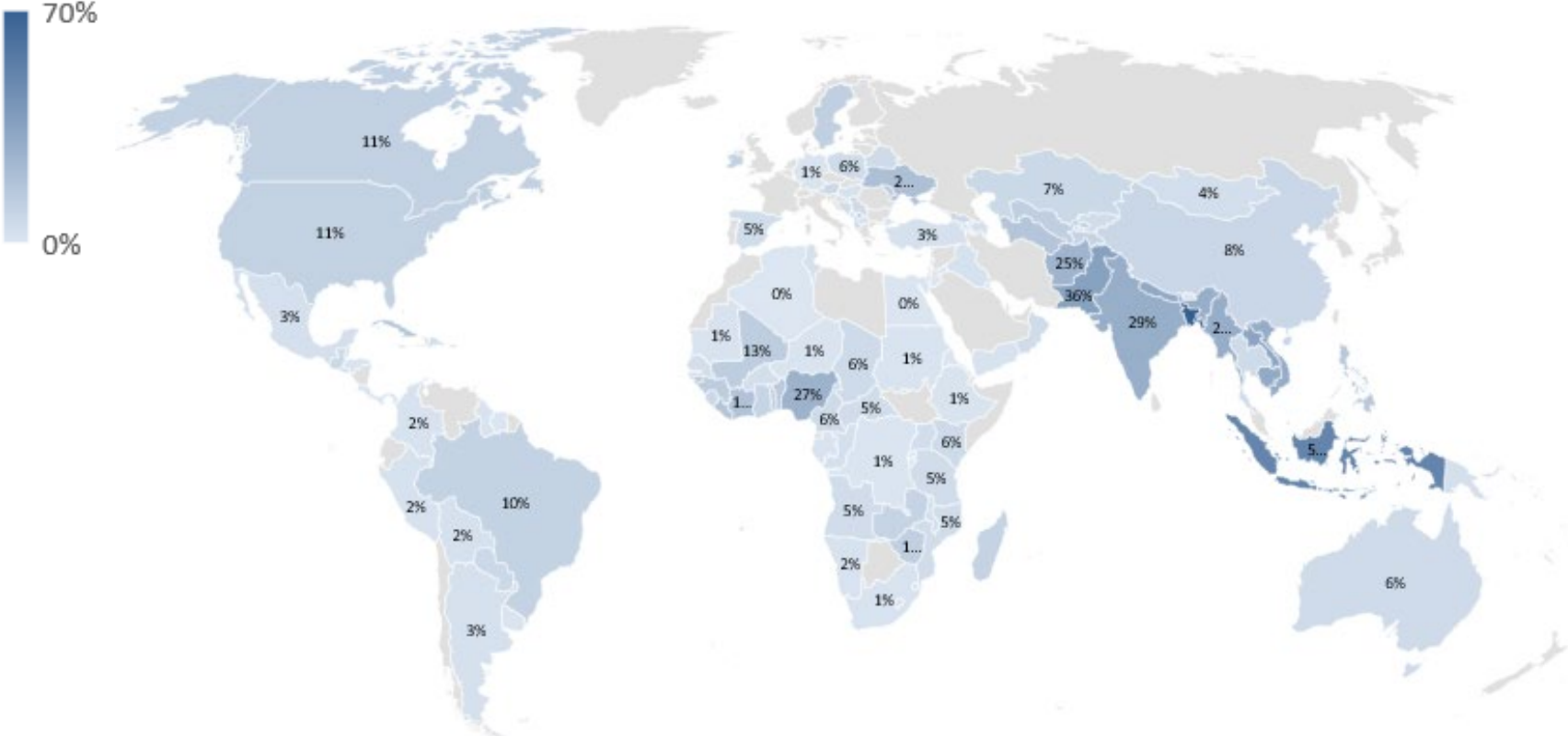
# Background

- Self-supply is a model in which individual households own and manage their own water supply
- Self-supplied water is:
  - On premises
  - Unregulated
  - Often ignored by policy
  - Poorly understood
- Study aimed to estimating the global extent of groundwater self-supply
  - National surveys, censuses and government statistics
  - Defined as a well that is on-premises or private



# Data on private well use obtained for 127 countries

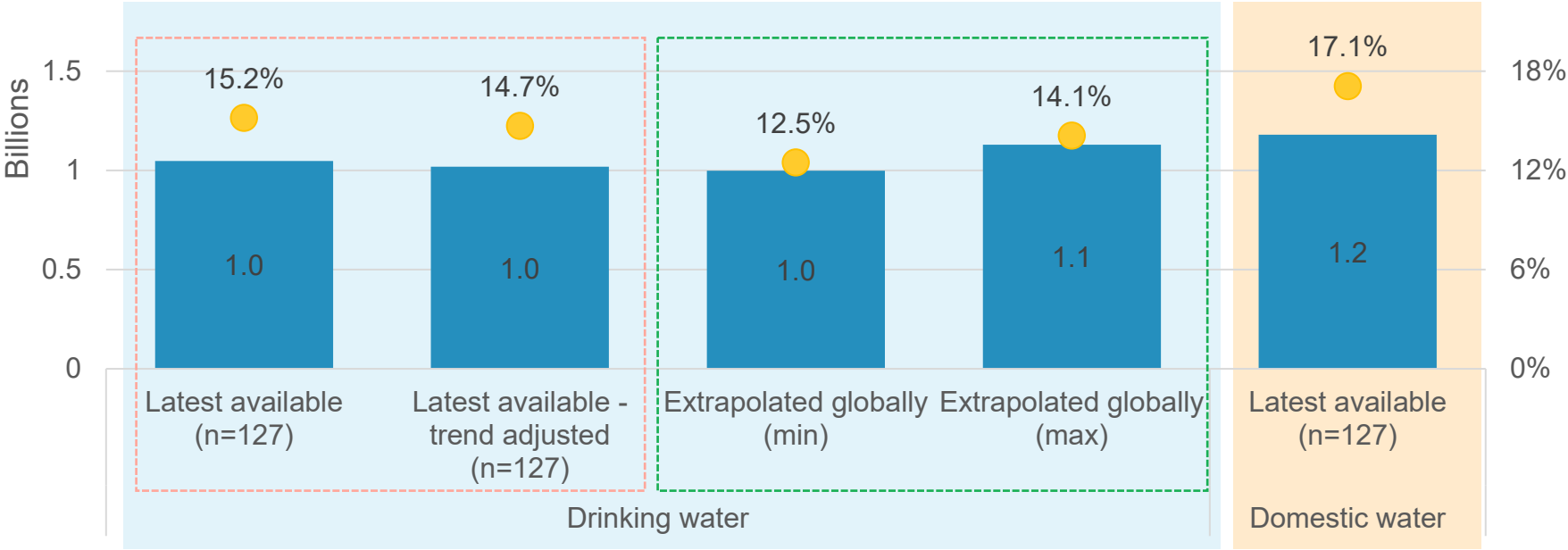
% of population using an on-premises well



# Globally, more than 1 billion people rely on private wells

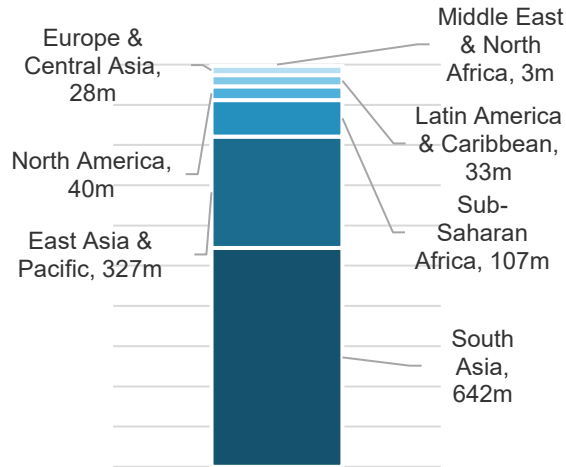
Equivalent to 1-in-6 households

### Global population using private wells

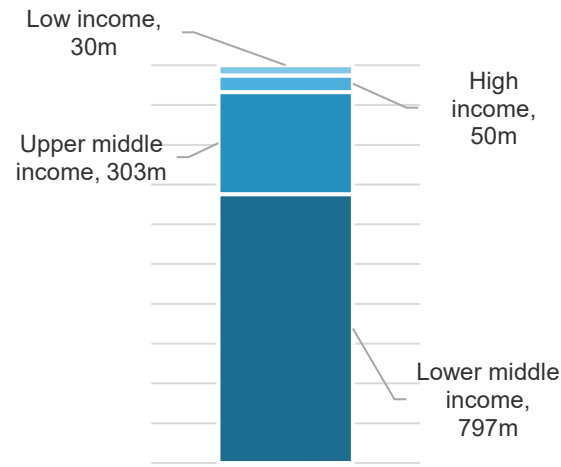


# Vast majority of private well users live in middle income countries, with more than three-quarters in Asia

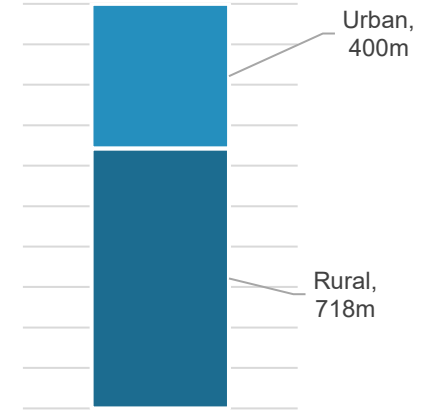
## By region



## By country income status



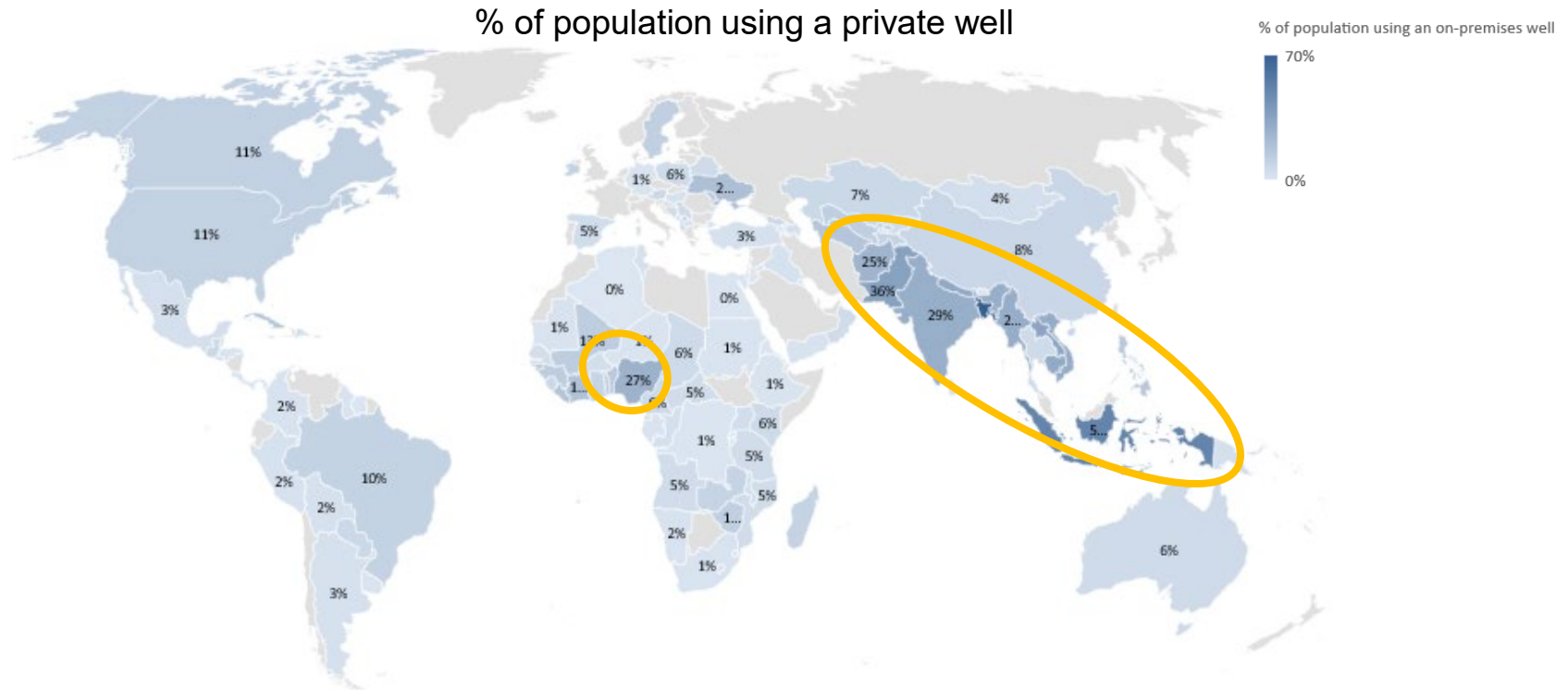
## By area of residence



**97% of private wells globally are 'improved' (boreholes, tubewells or protected dug wells)**

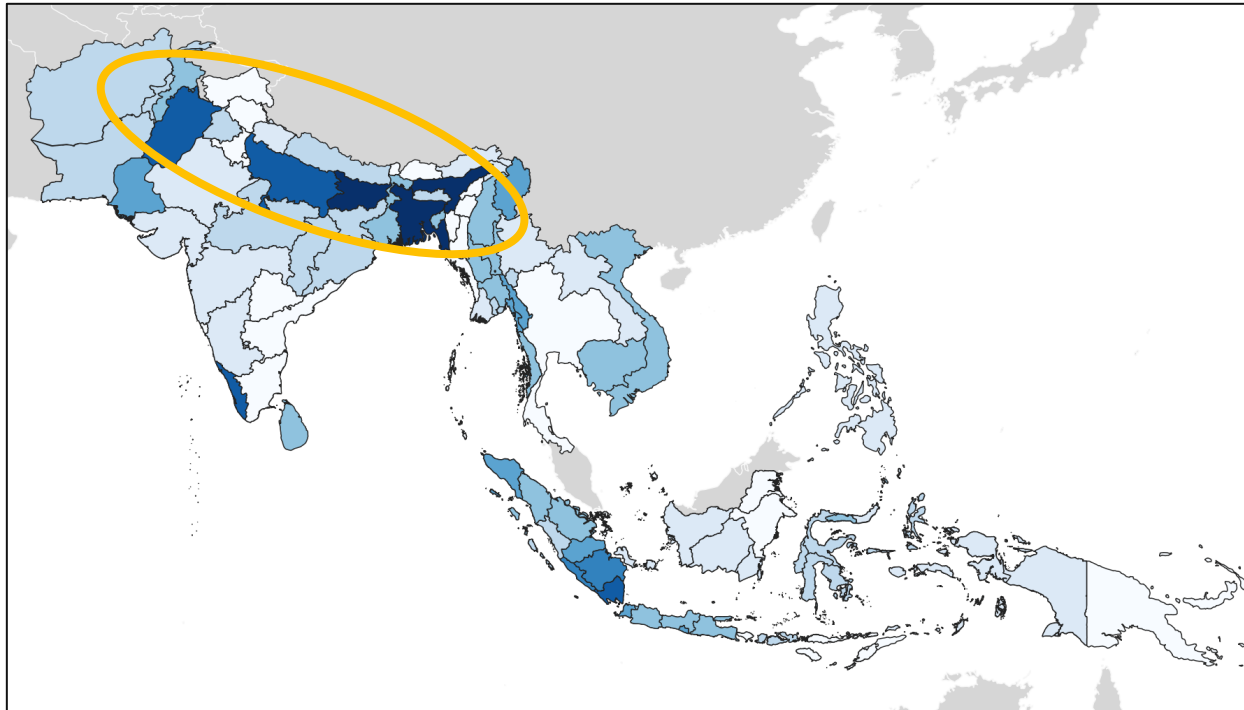
# Six countries account for 850m private well users

## Bangladesh, India, Indonesia, Vietnam, Pakistan & Nigeria



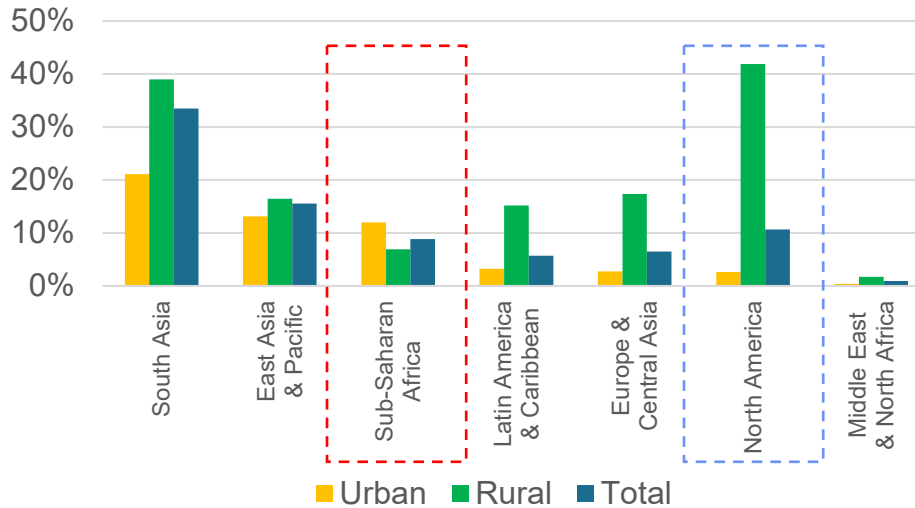
# Highest density of private wells in the Indo-Gangetic Plain

% of population using a private well in rural areas

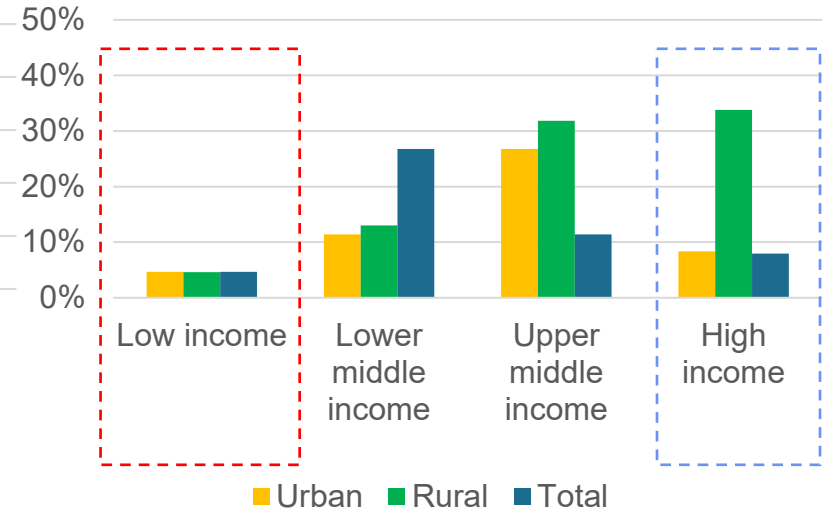


# Use of private wells is most common in rural areas, except in Africa where it is more common in urban areas

% using private well: by region and area



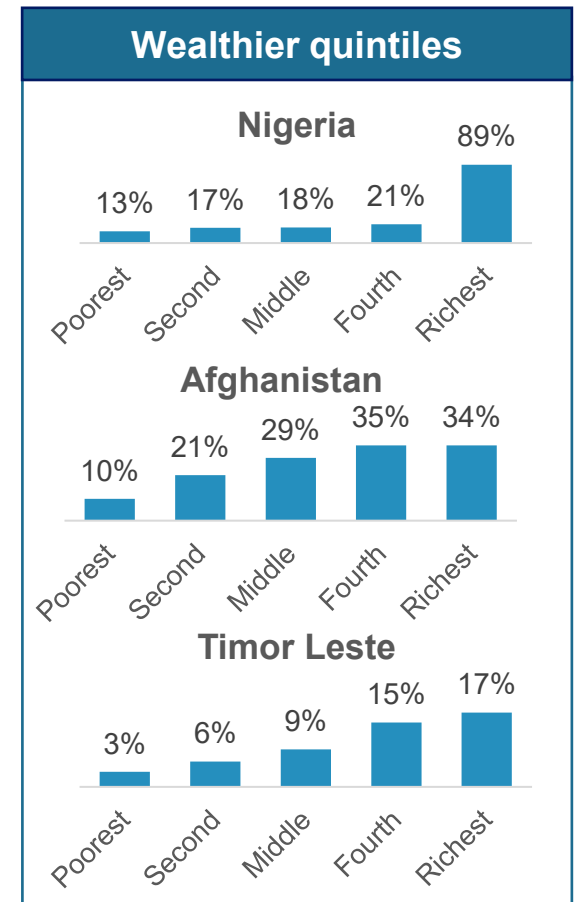
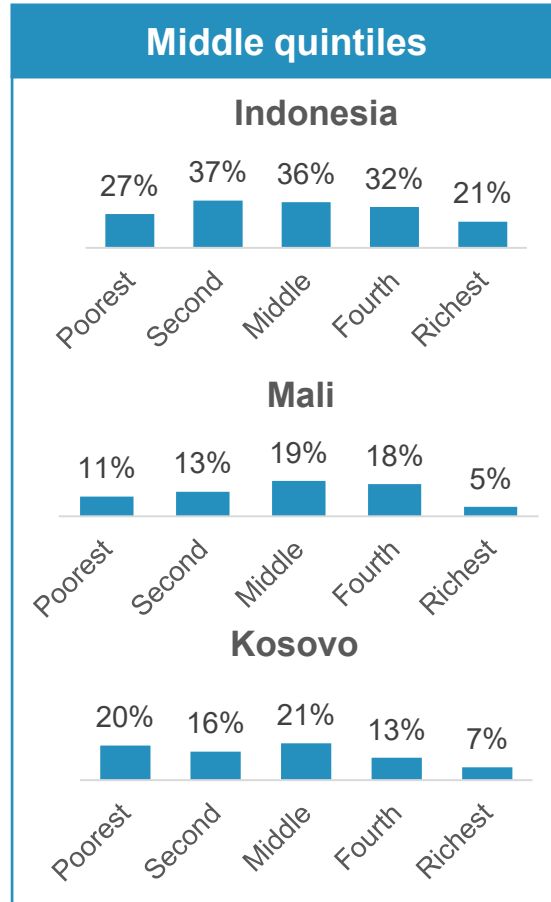
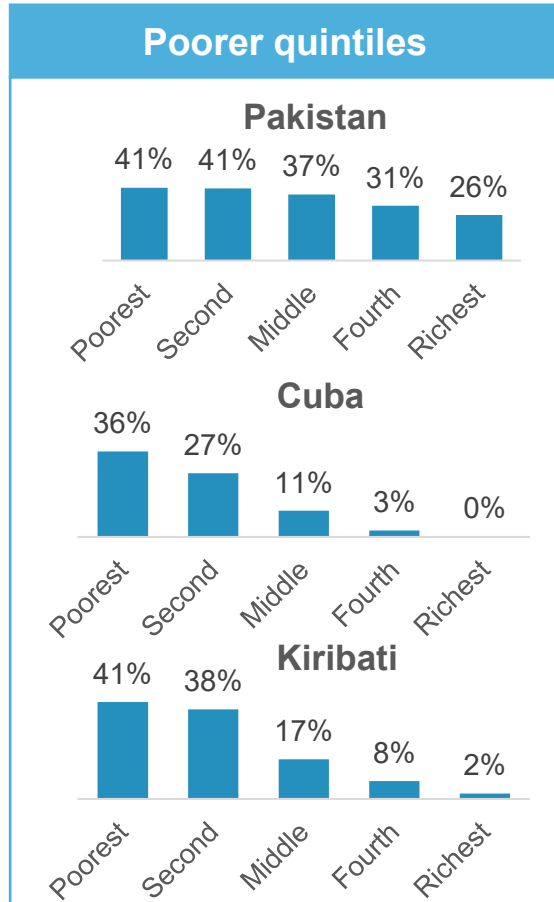
% using private well by country income



**Globally, 23% of rural households use private wells compared with 11% of urban households**



# Relationship between wealth and private well use varies



# The contribution of private wells to household water security is significant but key evidence gaps remain

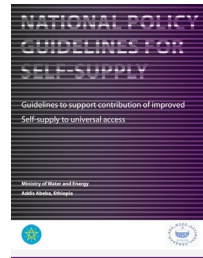
## Service levels

Are private wells a viable option for achieving safely managed water services? (free from contamination, available when needed?)



## Policy and regulation

How can policy and regulation maximise the opportunities and minimize risks associated with private well use?



## Future trends

What do mega-trends (e.g. rural electrification, national targets) mean for private well use in the future





# Thanks!

[tim.foster@uts.edu.au](mailto:tim.foster@uts.edu.au)

