

Water Security in Small Towns

Exploring common ground in
Wukro, Ethiopia & Lodwar, Kenya

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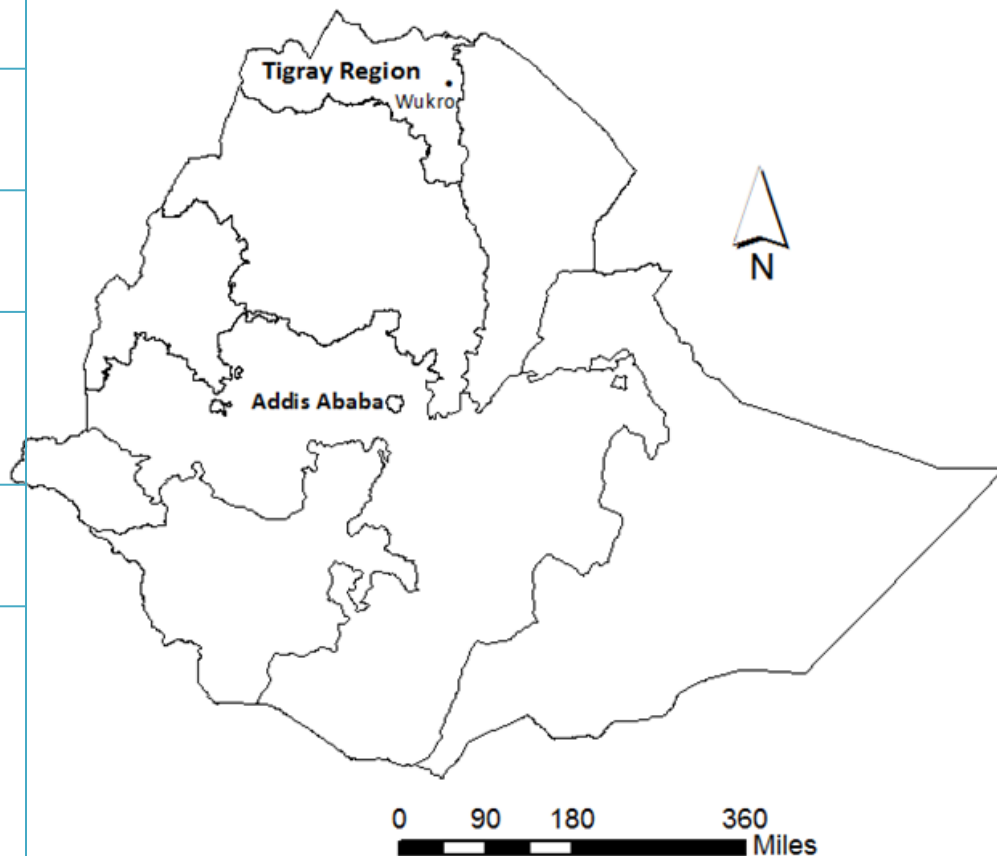


Ethiopia – national context

- Ethiopia has a climate resilient green economy (CRGE) strategy
 - And intends to become a middle-income, green economy by 2025
- There is a policy priority for drinking water
 - Since drinking water is a social good and higher coverage will foster economic development
- Ethiopia has the ONEWASH national program 2013-2018
 - \$200 million of donor funding for WASH with a focus on urban WASH

Wukro Town, Northern Ethiopia

Wukro	
Population	48,000
Average annual rainfall	610mm (semi-arid)
Average temperature	19°C (2,000 m.a.s.l.)
Average household income	\$3 /day (2016)
Water supply source	Groundwater (6 boreholes)
Main water security challenges	Urbanisation, poverty, insufficient piped water services, climate uncertainty, drought, competing water users
Main water governance actor	Wukro Water Utility



Wukro: Research questions

How does the level of access to WASH affect trajectories out of poverty for the urban poor?

Demand

Climate

What metrics and methodologies can help build climate-resilience in urban water supplies?

Utility

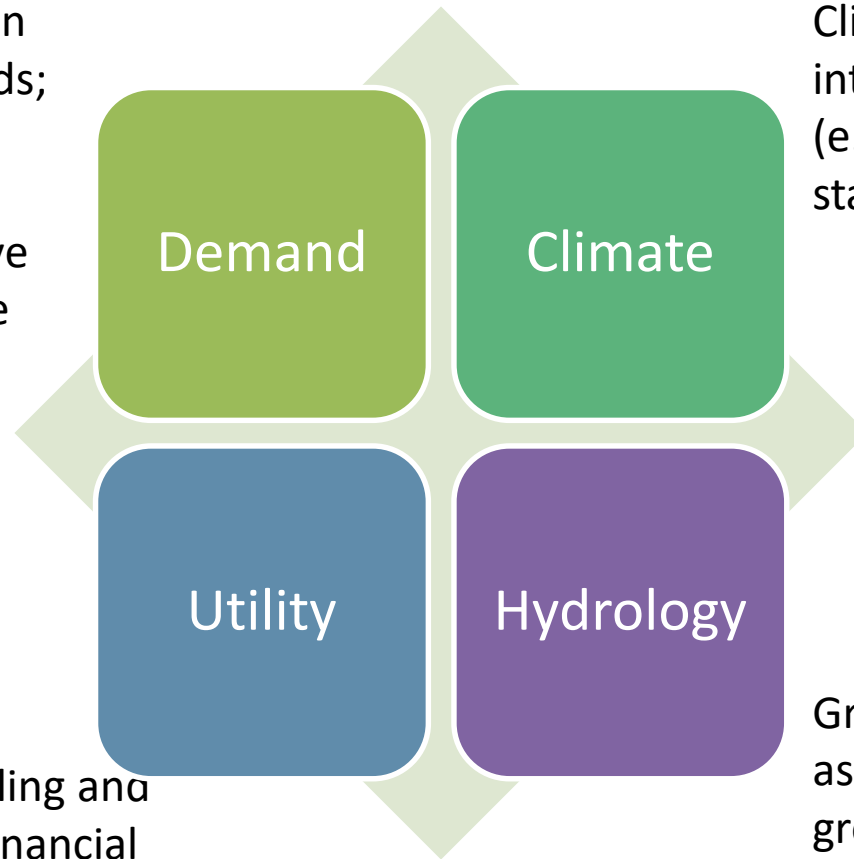
Hydrology

Making the invisible visible: How does 'domestic' water use (and women's work) contribute to the urban economy?

What are the implications of the increasing service norms in urban WASH on water resources?

Data streams

Socio-economic survey (n = 4,700 urban households; 2016). Water diaries on use of multiple sources and decisions. Qualitative research on multiple use systems and urban poverty.



Climatic analysis using international databases (e.g. CHIRPS). Local weather stations

Water Utility borehole abstraction volumes, billing and water meter readings, financial data, water supply system improvement plans

Groundwater aging to assess recharge (isotopes), groundwater pressure sensors

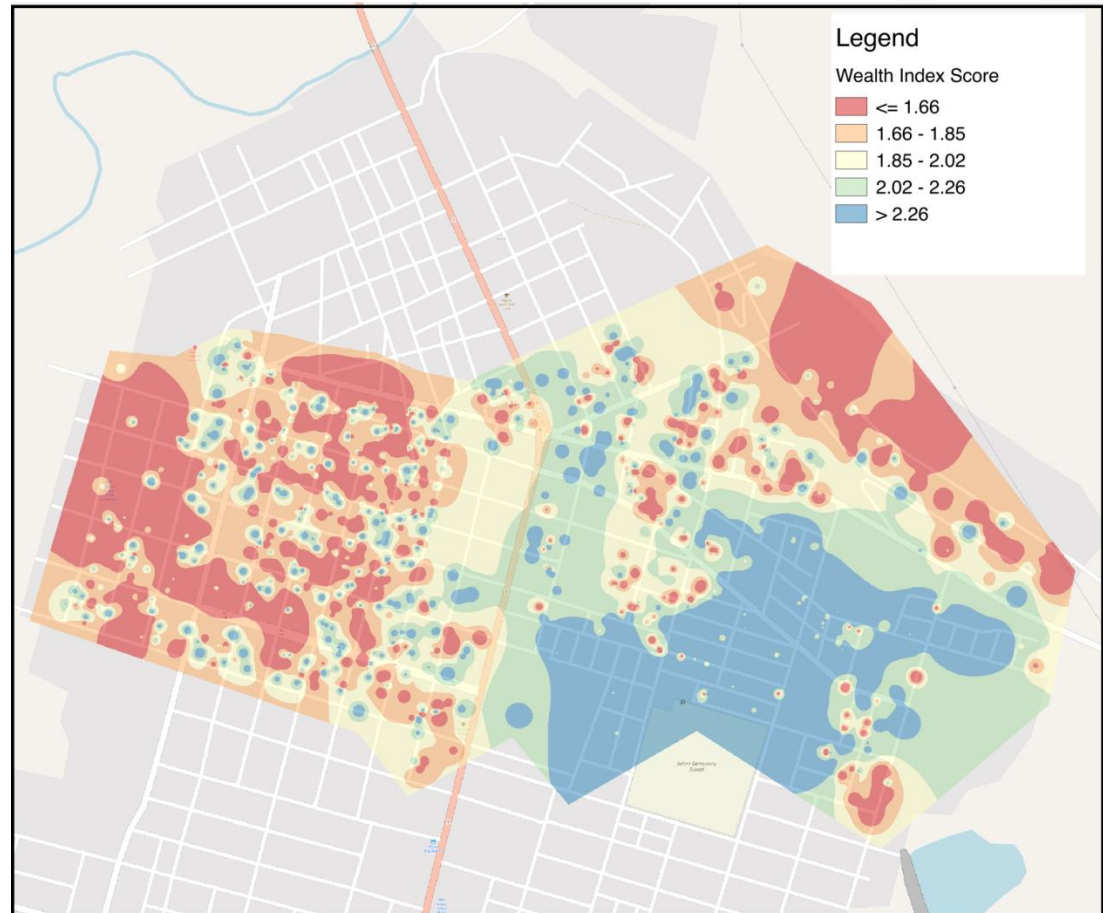
Urbanisation, WASH, wealth and welfare

WASH in Wukro

- Water piped to 97% of households
- Less than 50% households using 50 lpcd
- 97% of HHs have a toilet, but only 8% are improved
- 76% of HHs use chemical water treatment

Research Questions:

- How does urbanisation influence urban inequality and urban WASH access?
- How does the level of access to WASH affect trajectories out of poverty for the urban poor?

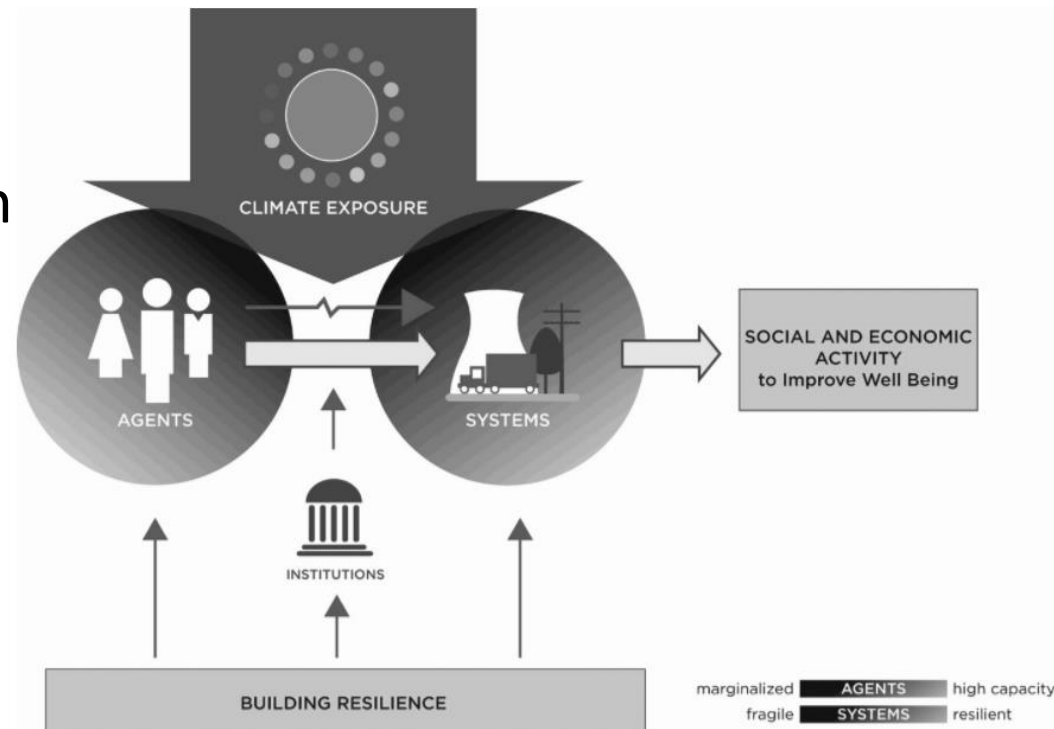


Asset count, education of HH head, WASH indicators

Climate Resilient WASH

Research Questions

- What is the impact of drought on WASH systems in small towns?
- How can WASH systems be better managed to move towards climate resilience?



Tyler and Moench, 2012, A framework for climate resilience, *Climate and Development* <https://doi.org/10.1080/17565529.2012.745389>

Aligning small towns research in REACH

- Climate resilience is a key theme for both town water supplies and for larger demographic shifts.
- Urbanisation is a contrasting theme: Wukro is experiencing slower planned growth. Lodwar has experienced rapid, unplanned growth.

REACH

Improving water
security for the poor

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