



Towards a multi-dimensional tool for assessing household water security: understanding vulnerability to WASH security risks in Burkina Faso

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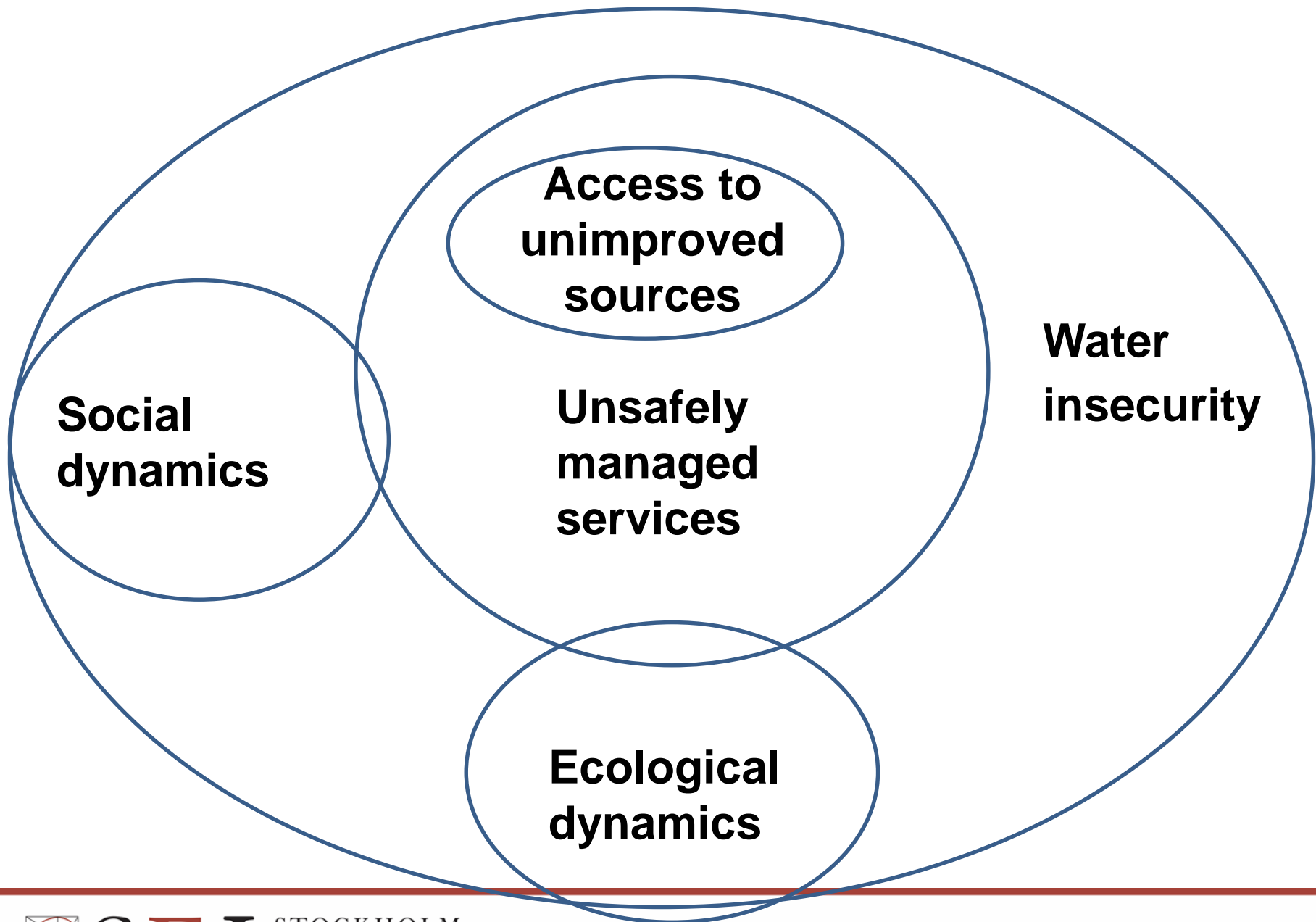
Outline

- Understanding water security
- Measuring water security
- Case study in Burkina Faso
- Towards multi-dimensional tools

What is water security?

- Elusive concept
- Multiple framings e.g. hydro-social cycle, SES
- Multi-dimensional, - aligned with SDG 6 which comprises a more holistic and inclusive agenda





Water security at a micro-level

- Provide dis-aggregated identification of water insecure sub-populations
- Translate complex concepts into practical metrics and approaches
- A number of existing approaches that emphasize lived experience of water insecurity
- Limited use of multi-dimensional approaches

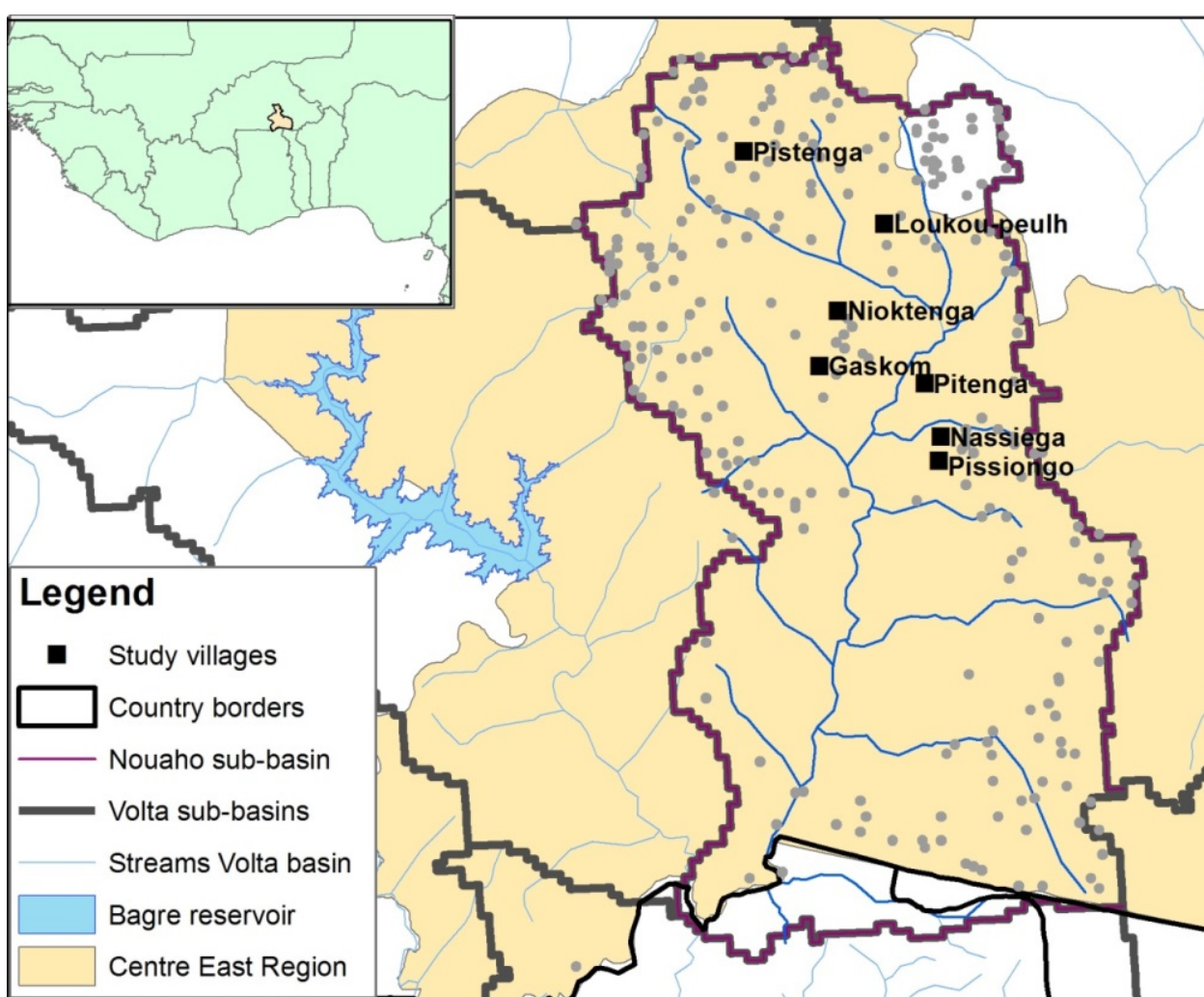


Lessons from food security

- Different tools capture or neglect different phenomena – which can influence prioritization
 - Dietary diversity and food frequency
 - Spending on food
 - Consumption behaviour
 - Experiential measures
 - Self-assessments
- Growing efforts to combine objective as well as subjective measures



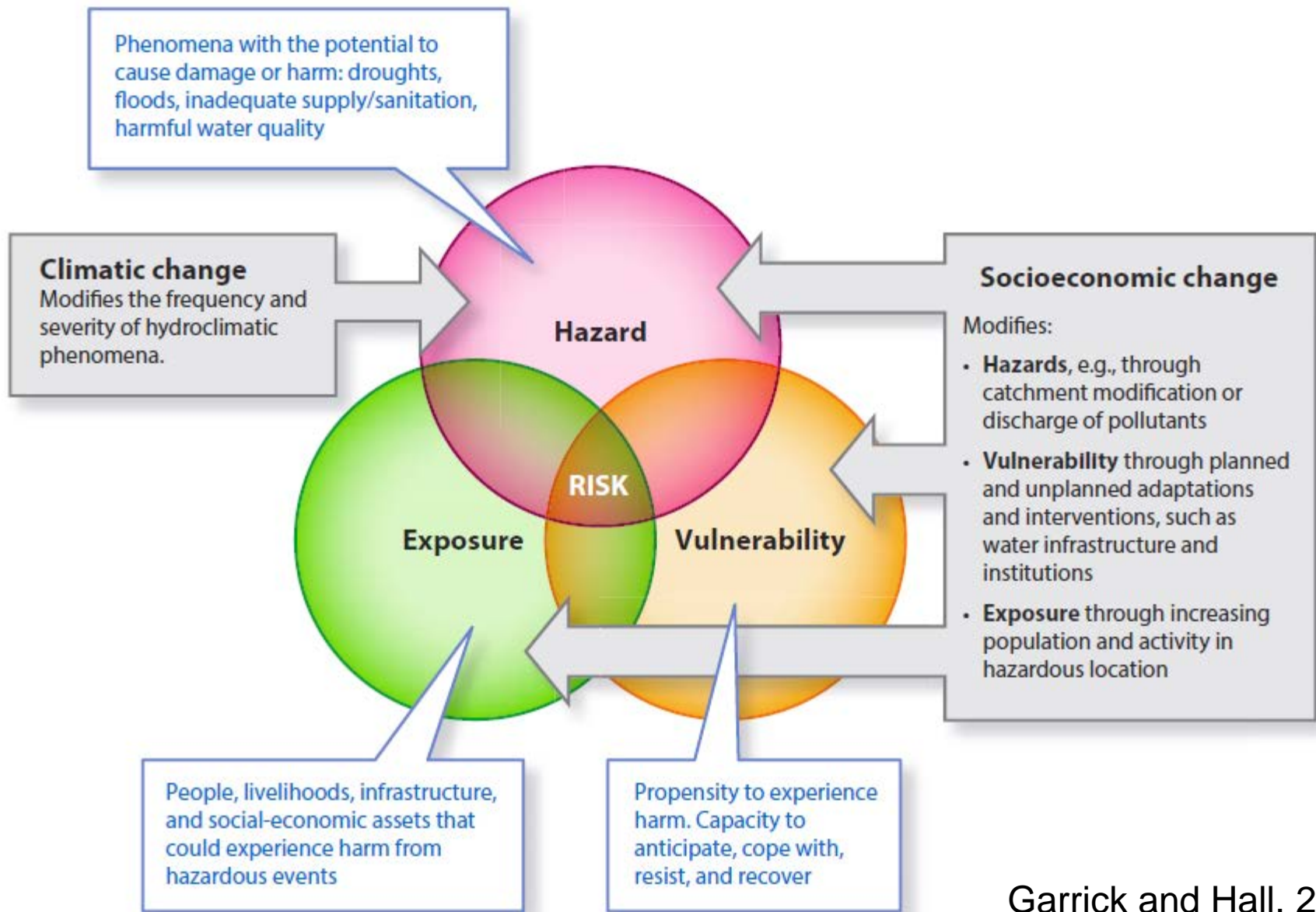
Case study – Centre East region



“More studies are needed, especially in developing countries, on the impacts of climate change on water quality, and of vulnerability to those impacts” IPCC WGII AR5

Aims

- Case study on gendered vulnerability to water security risks
- Identify indicators to measure water insecurity in the context of social-ecological change using a risk framework



Garrick and Hall, 2014

Research questions

- Who is exposed to WASH-related hazards? (e.g. extreme events, water scarcity, poor water quality)?
- Who is most vulnerable to household WASH-related hazards?
- What coping and adaptation strategies are used to deal with hazards?



Methodology

- Mixed methods approach
 - FGDs with men and women
 - Household survey of 450 men and women
 - Collection of other data (e.g. water quality, infrastructure audit)



Exposures to WASH hazards

- Inadequate quantities of water during dry season
- Low use of improved sanitation (16%)
- social and environmental shocks:
 - flooding (11%), low precipitation (26%), erratic precipitation (22%), and elevated temperatures (9%), and drought (6%)



Vulnerability

- Limited affordability for some women
- Larger accessibility burden for women collecting water for multiple uses (household, productive, and livestock)
- Women and men experienced water-related distress



Coping and adaptation

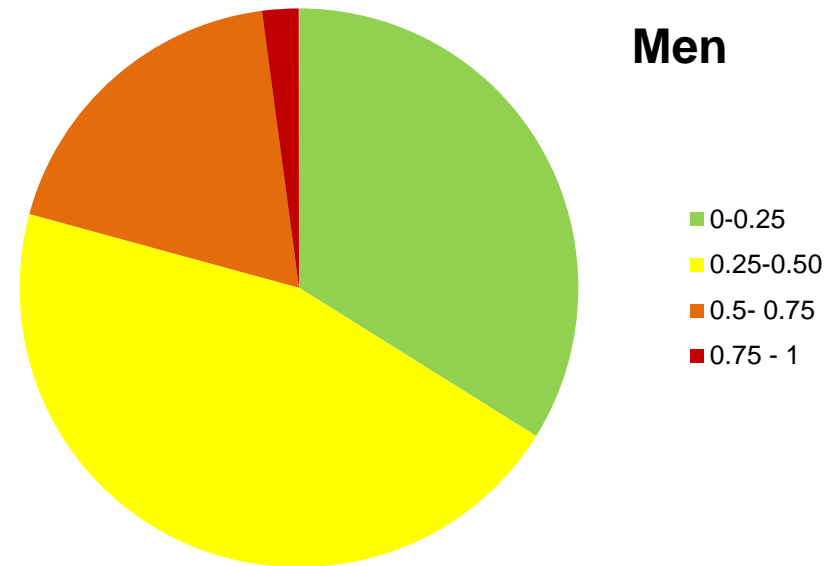
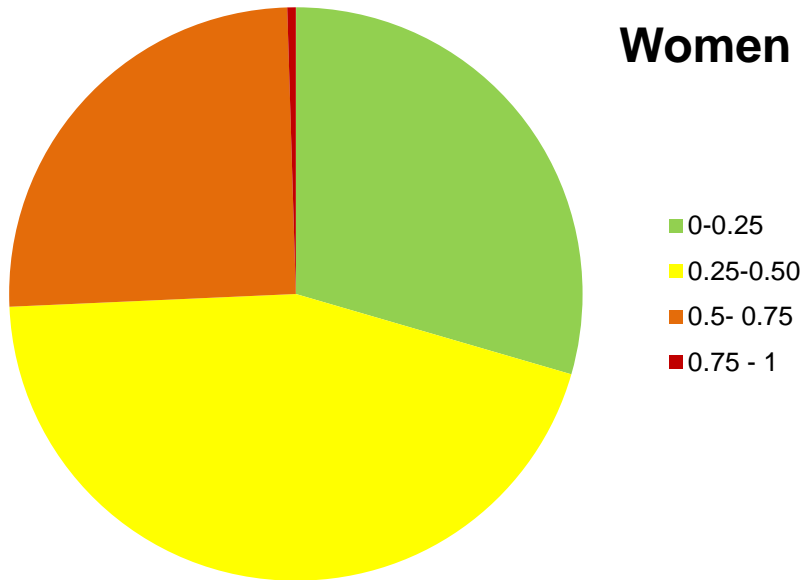
- Range of coping behaviours conducted by men and women
- Limited social capital, access to information
- Limited voice to address local water security situation



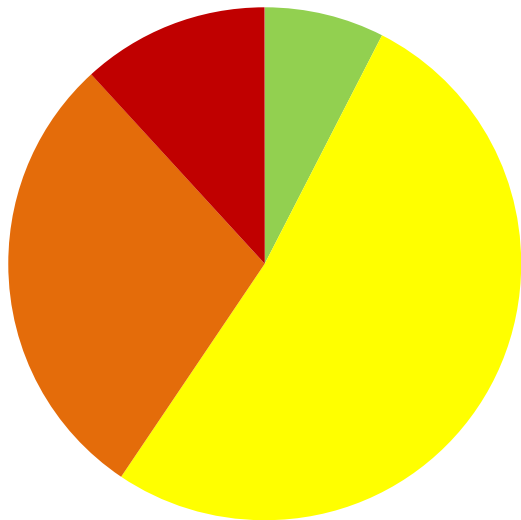
Development of a multi-dimensional approach

- Exposure conditions
 - WASH related hazards (e.g. inadequate quantity, quality, poor sanitation) climate events
- Vulnerability conditions
 - Challenges affording and accessing WASH
 - Water-related distress and conflicts
- Coping and adapting strategies
 - Resources and capacities

Exposure

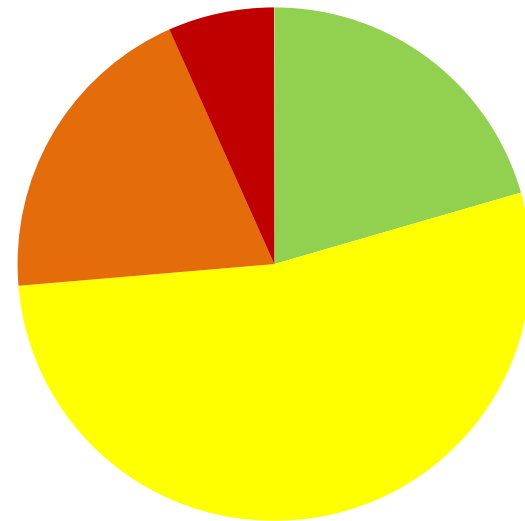


Vulnerability



Women

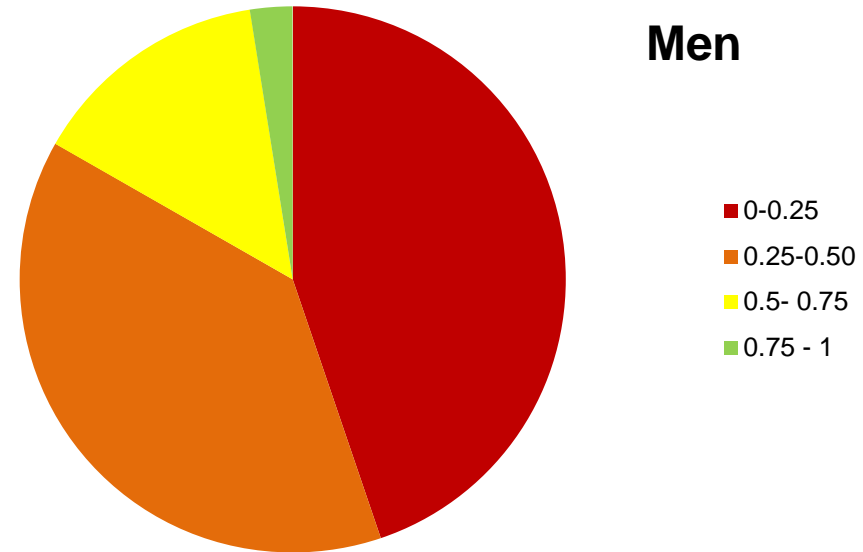
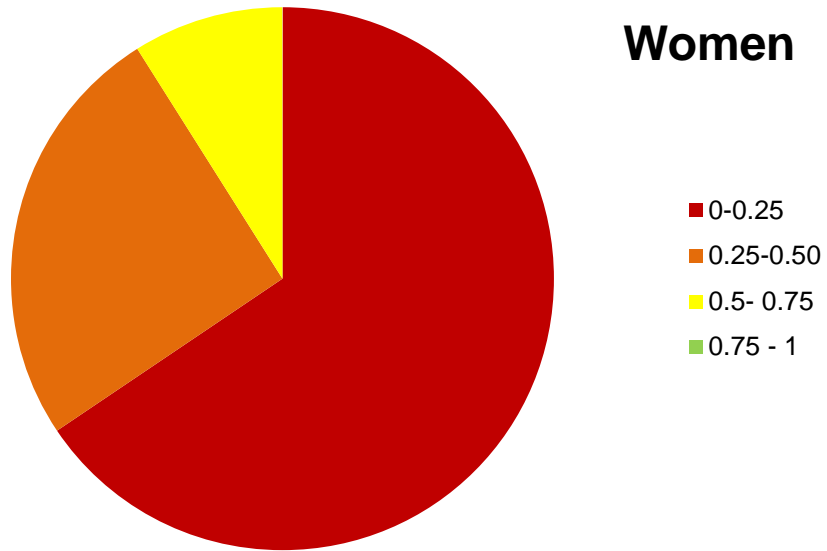
- 0-0.25
- 0.25-0.50
- 0.5-0.75
- 0.75-1



Men

- 0-0.25
- 0.25-0.50
- 0.5-0.75
- 0.75-1

Adaptive capacity



Challenges

- Assigning cut-off points and thresholds to identify greatest water insecurity
- Cross-cultural comparison versus location-specific criteria
- Accounting for dynamic conditions

Measurement drives diagnosis and response

- Provides insight on sub-national differences and heterogeneous trends
- Directing resources areas of greatest need
- Target specific characteristics of vulnerable households/individuals



Significance

- Assess broader range of outcomes associated with water insecurity
- Better understanding of dynamics in the context of hydro-social change
- Information on disparities relevant for SDG targets



Thanks

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REACH

Improving water
security for the poor

Adaptive capacity	Cut-off
Listening to radio	Never
Education	No schooling and no literacy
Member in an association	Member only listening
	Member speaking
Use local institutions during shocks	Only friends and family

Exposure	Cut-off
Quantity	Adequate quantity during the past 12 months for household use
Quality	Improved source
Sanitation	Improved without handwashing
	Improved with handwashing
Climate hazards	Flood, drought or late rainfall in the past 12 months

Vulnerability	Cut-off
Accessibility	30 minutes
	60 minutes
Affordability	Annual fee paid by female
	Annual fee paid by male HH
Worry about water for drinking or cooking	Yes
Conflicts with others due to water	Yes