

Adapting Targeted Sanitation Subsidies for Climate Vulnerable Households.

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Rural Cambodia



One view



Turning around



The challenge (and our research questions):

- 1) What is a practical means for identifying climate vulnerability at a household level?
- 2) How can this approach be used to deliver targeted sanitation subsidies to the most climate vulnerable?
- 3) How effective are these climate-targeted sanitation subsidies at increasing sanitation coverage (while not damaging local markets)?

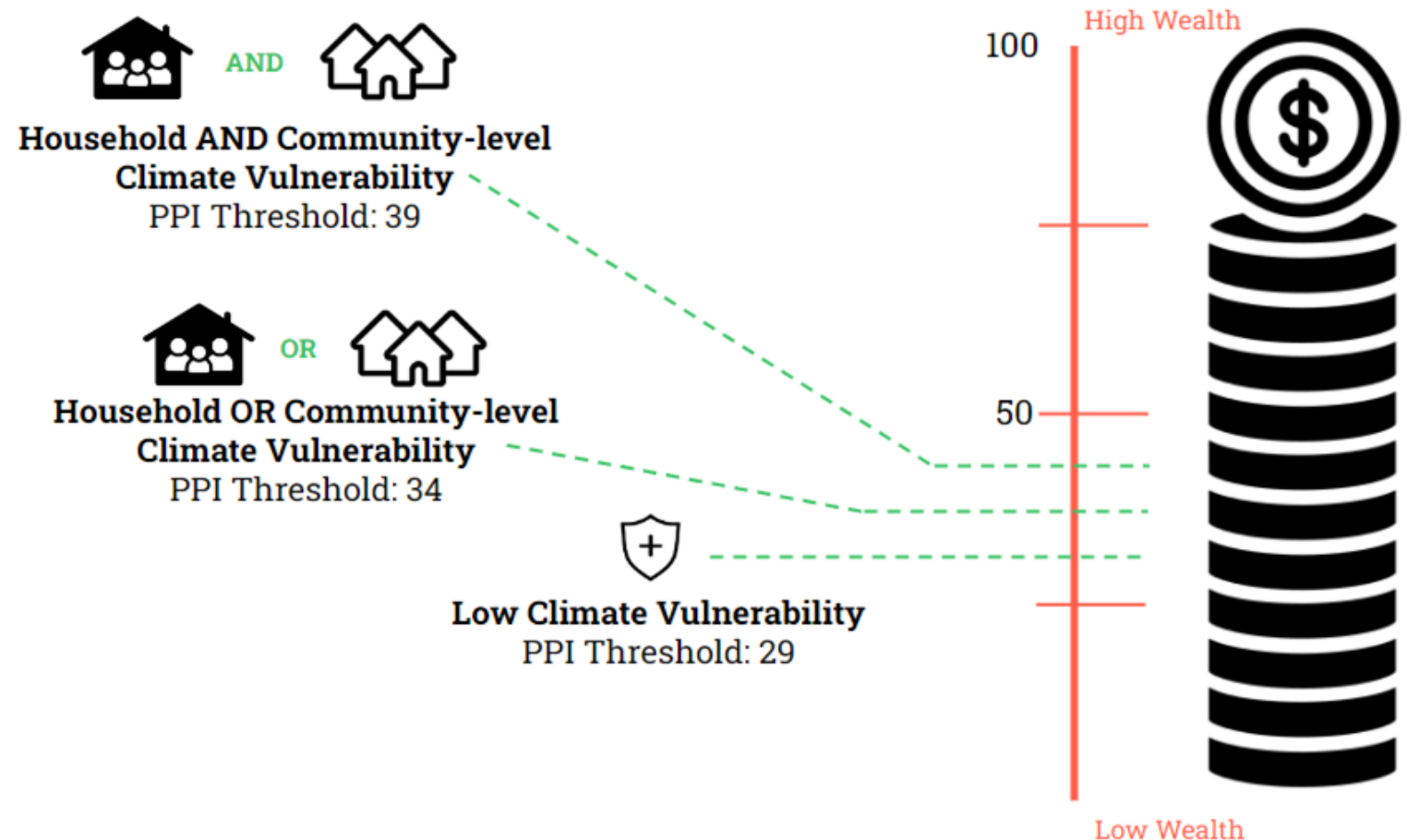
Our process

- 1) Market study and sales trial (developing and selling resilient latrines in climate vulnerable areas without subsidies)
- 2) Developing climate-vulnerability assessment and subsidy eligibility tool
- 3) Trial and validate tool
- 4) Conduct randomized controlled trial (RCT)

Vulnerability Assessment/Subsidy Eligibility Tool

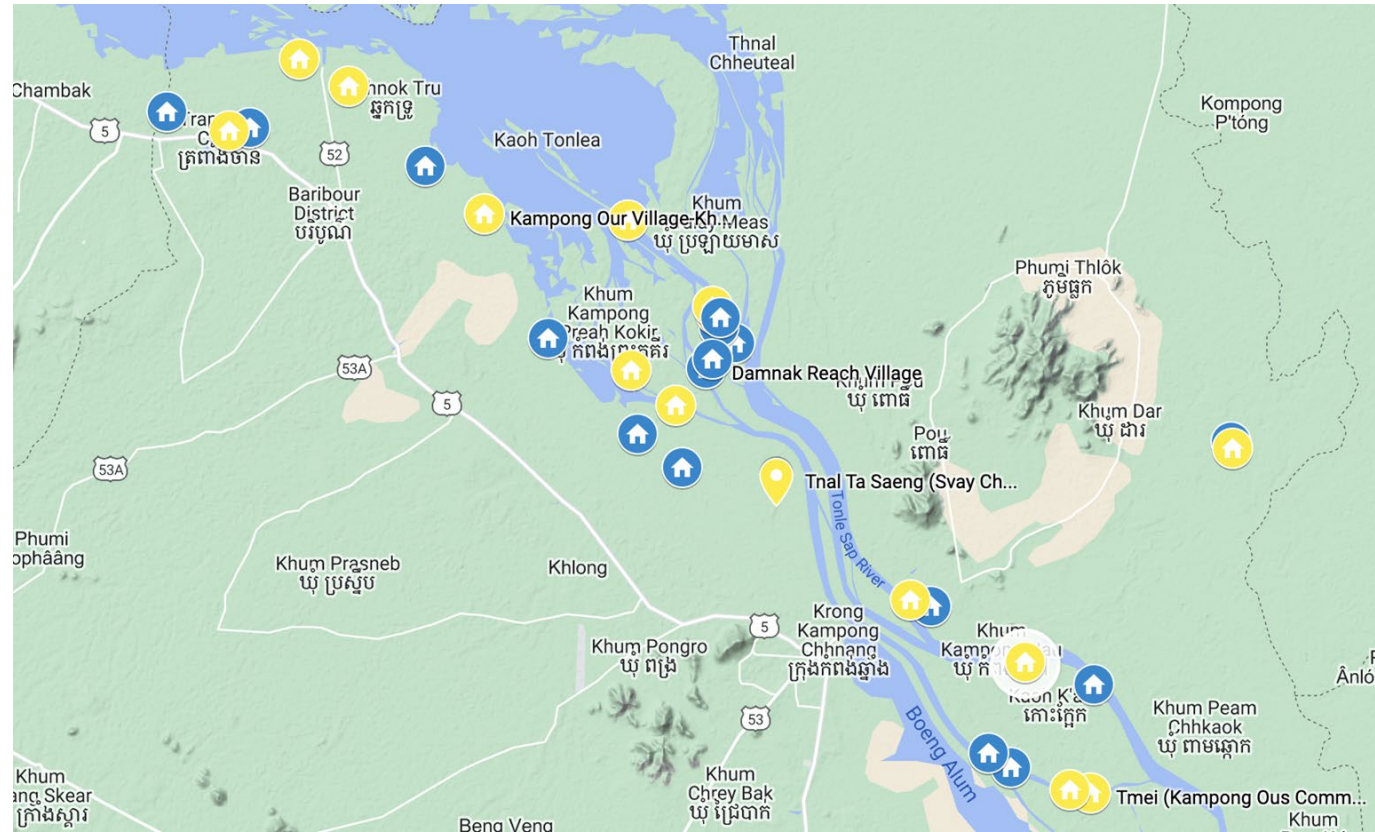
3 Layers:

- Poverty Probability Index (PPI) Survey
- Climate Vulnerability Index (score) score
- Household income disruption due to climate event (flood/storm/drought)



Randomized Controlled Trial (RCT)

- 30 Villages in Kampong Chhnang Province near the Tonle Sap Lake
- 2,821 unique sales presentations to households (conducted by iDE sales agents)
- In treatment areas, eligible households offered latrine discounted through a partial subsidy. In control areas, all households offered product at retail price.
- Regular monitoring, verification and quality control throughout trial (tracking accuracy of eligibility & market distortion)



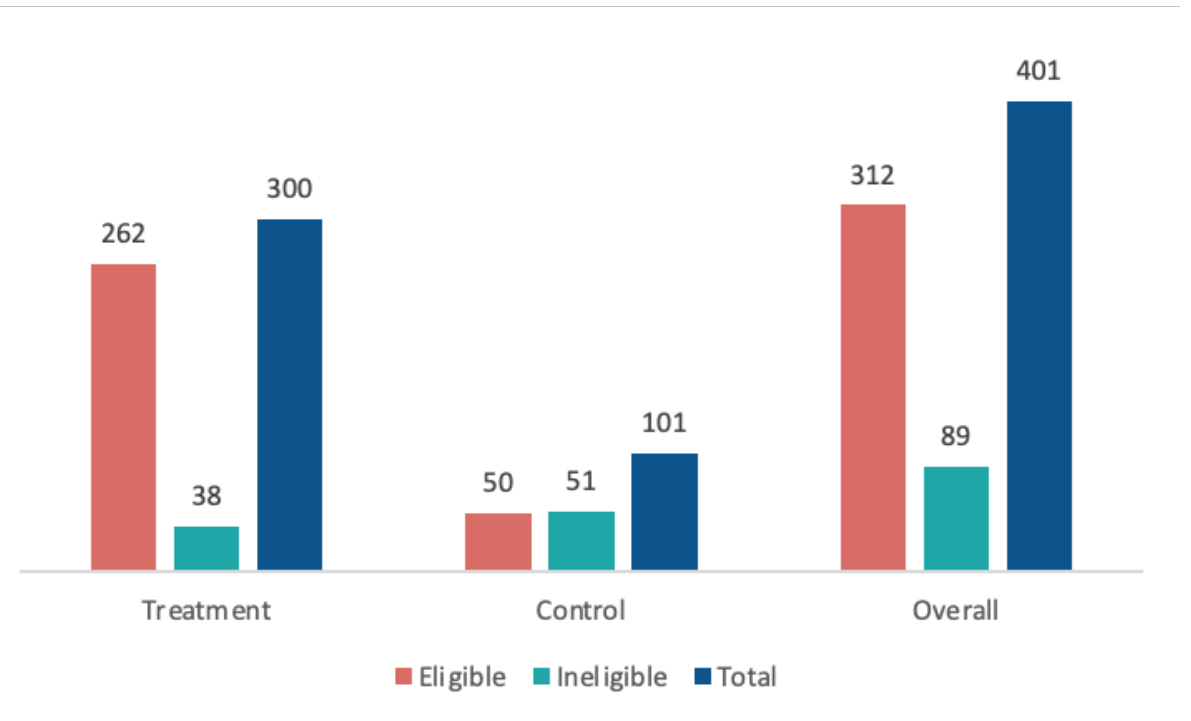
Qualitative Follow-Up

- 13 in-depth interviews with key implementing stakeholders, including:
 - Latrine business owners
 - Local government
 - Sales agents
- Assessed feasibility, perceptions, and opportunities for improving eligibility tool

Sales Overview

- **Subsidy eligibility rates were high overall**
 - 51% of the treatment group & 45% of the control group qualified
- **In total, 401 latrines were sold during the 7.5-month pilot**
 - 65% (262) were sold to subsidy-eligible treatment HHs

NUMBER OF LATRINES SOLD



Results - Village Level

Sanitation subsidies substantially increased latrine uptake among vulnerable households

- Treatment resulted in a 23pp increase in overall sales closing rates at the village level (from 13 to 36%)
- Among vulnerable (eligible) households, subsidies increased the sales closing rate by 31pp (14 to 45%)
 - Difference was most pronounced among HHs qualifying through the PPI assessment

	Overall	All Vulnerable Households	IDPoor Households	PPI Vulnerable Households
Coefficient	0.233***	0.309***	0.264**	0.366***
P-value	0.004	0.001	0.026	0.000



Results - Climate Vulnerability

HOUSEHOLD

- Personal climate vulnerability was defined as *a household which reported experiencing a climate-related event in the past year that severely disrupted their income or resulted in unexpected expenses*
- The predicted probability that a subsidy eligible HH would purchase a latrine was 10pp higher among personally climate vulnerable households

COMMUNITY

- Community-level climate vulnerability (CCV) was not associated with changes in latrine uptake
- Possible limitations:
 - CCV was defined at the commune level
 - Small sample size

Households who identified as personally climate vulnerable were more likely to purchase a latrine when offered a subsidy

Results

No evidence of market distortion

- Similar sales closing rate among non-eligible households in treatment and control areas (6%)
- Three of the 2,352 non-purchasing households reported that they were waiting on a subsidy

Results

Complementing market-based sanitation with targeted subsidies can offer major gains for operational cost-effectiveness

Operational cost per latrine sold (USD)			
RCT		Scaled Simulation	
Treatment	Control	Treatment	Control
\$ 224.22	\$ 602.07	\$ 149.51	\$ 351.32

Limitations

- Data based on sales orders, not deliveries.
- Some PPI criteria are outdated and fail to capture quality of assets
- Geographical sample area is generally climate vulnerable. Comparison between climate vulnerable and non-climate vulnerable not conclusive.
- Externalities, including local authority incentives, may have increased effectiveness at identifying vulnerable households when they were aware that subsidies were being offered (

Recommendations

- Low income, climate-vulnerable households are market participants and exercise agency in their sanitation investments.
- Market-based sanitation programs can reach wider segments of populations and achieve higher cost-effectiveness by integrating targeted subsidies, including in climate vulnerable areas.
- More evidence is needed on effective means for **practical, objective, and observable** criteria household-level climate vulnerability identification.
- Research needed on difference in sanitation uptake between climate-vulnerable and less-vulnerable areas.



*Mr. Soem Song, Latrine Owner
Koh Thmov, Kampong Chhnang, Cambodia*

Thank you!!

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