

PRELIMINARY: DO NOT CITE

“Mali: Cooperation in CLTS”



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Intervention in Mali

- Community Led Total Sanitation (*CLTS*) is being implemented in Mali by the Ministry of Sanitation and UNICEF.
 - Eligibility criteria: rural areas, 40-70 households per community, < 60% latrine coverage.
 - Triggering period + monitoring: 2/3 weekly visits for 3-4 months.
 - No subsidies or sanitation marketing.
 - Check “open defecation free” (*ODF*) status, party and certification.

Achieving ODF status

- Each family has a latrine equipped with a cover that limits the proliferation of flies from the pits.
- All members of the family exclusively use such latrine to defecate.
- Each latrine is equipped with a hand washing device (water + soap / water + ash bucket).



Evaluation

- This project comprises a randomized controlled trial for studying the effect of CLTS in rural Mali.
 - Effects on sanitation and health
 - What is driving collective action in order to increase sanitation coverage and latrine adoption?
 - Shed some evidence on other potential components of the intervention

Outcomes of interest (I): Sanitary and Health outcomes

- Intermediary sanitary outcomes:
 - number of latrines, quality of latrines, use of latrines, building of hand washing stations, hand hygiene behavior, bacteriological content of drinking water.
- Final sanitary outcome:
 - community status towards becoming ODF (“open-defecation free”);
- Health outcomes:
 - diarrheal illness for children under 2 and under 5, child anthropometrics, self-reported health status by household members, out-of-pocket health expenditures

Outcomes of interest (II): What drives adoption?

- Community outcomes: level of cooperation, level of trust, social cohesion, leadership, speed of diffusion of the new practice of latrine use within social networks
- Psychological outcomes: knowledge, risk perceptions, self efficacy;
- Non-health outcomes: school attendance, time use, women's safety.

Timeline

- Training and pilots: March 2011.
- Data collection:
 - Baseline: April/ May 2011
- Random assignment of treated localities:
 - August 2011
- Intervention:
 - Triggering: October/ November 2011
 - ODF certification: May/ June 2012
- Follow up
 - October 2012

What might be working in CLTS? (1)

1) CLTS is an information intervention:

- Changing the perception of risk from continuing OD.
- Information provided by CLTS may interact in an interesting way with the social structure to explain the spread of adoption of latrines in the population.
- Is social learning is important to explain the spread of adoption at the community level?

What might be working in CLTS? (2)

2) CLTS: manipulating emotions and enforcing commitments.

- people care more about contributing to the provision of a clean environment through the use of latrines.
- triggering an emotion: a person may experience a “warm-glow” when publicly committing to stop OD
- pride when finally certified as clean.
- close monitoring (visits twice a week for three months), prevent people from renegeing on a commitment done under the influence of a strong emotion.
- Social disapproval must be strong enough to offset the tendency of people to free-ride on others’ efforts to provide a clean environment.

What might be working in CLTS? (3)

3) Collective decision-making for a cleaner environment.


- Sanitation as a public good.

– “The tragedy of Open Defecation”

- the resulting level of sanitation at the community level may be lower than the socially efficient level. According to CLTS specialists, improved sanitation is not possible unless everyone in the community uses private improved latrines equipped with soap and water.

What might be working in CLTS? (4)

3) CLTS as a way to counteract the free rider problem.

- Existence of strategic interactions between community members.
- If the incentive to using improved latrines for one person is lower when the number of people using them is higher  bad equilibrium of poor sanitation.
- OD with little social disapproval.
- CLTS stirs social disapproval for OD practices.
- If social disapproval is strong enough, one's incentive to use improved latrines may become higher the more people use them.

What might be working in CLTS? (5)





4) Understanding social structure

- Pre-existing community attributes: age, wealth, gender, religious or tribal groups, engagement of community leader ("*chef du village*"), exclusion of some members.
- Community level of cooperation

Evaluation: Sample selection

- Draw of 150 representative villages (meeting the eligibility criteria for CLTS) in the region of *Koulikoro*.
- Rural areas
 - Household size: 40/60 (avg. household size in rural Mali 14)
 - Latrine coverage: smaller than 60%
- In order to avoid contamination, villages are chosen so as to maintain a minimum of 10km distance between them.
- 120 selected, power calculations for diarrhea. (approximately 591 are eligible)

Evaluation: Baseline activities

- Census in the communities (GPS coordinates of households, existing latrines and OD areas, distance to schools, health posts and paved roads). Interview with each household.
- Household Questionnaire/ child anthropometrics 
- Observational module [hygiene and sanitation facilities] 
- Separate team to collect water quality samples 
- Experimental games played with randomly selected players in each village (# drawn at the end of each interview) 

Household Questionnaire

- Basic demographic and socioeconomic characteristics
- Health Information (diarrhea and ARI), anthropometrics, health expenditures
- Social capital/social networks
- Self efficacy
- Hygiene and Sanitation module, time use module
- Women's safety



Observational Module

- Enumerators direct observation of:
 - Sanitation facilities:
 - availability
 - Location
 - quality of materials
 - usage
 - Hygiene practices:
 - hand-washing stations
 - presence of soap and water
 - hand hygiene



Water Quality Testing

- To assess impact of CLTS on:
 - Source water quality
 - Drinking and non-drinking public sources
 - 5 sources will be sampled per community (~600)
 - Household stored water quality
 - Water stored for drinking
 - 8 households will be sampled per community (~1000)



Water Quality Analysis

- Measurement of fecal indicator bacteria:
 - *E. coli* and total coliform, CFU per 100ml
 - Quantitative, most probable number method (IDEXX)
 - Detection range per sample 1 – 2420 CFU / 100ml
 - Samples kept on ice and processed within 6 hours



Experimental Games

- Estimate the level of cooperation within communities:
 - level of public good provided in a public good experiment prior to the intervention.
- Explain the variation in CLTS impact using attributes of pre-existing social structures:
 - Correlating outcomes of experimental games with attributes of the groups may help to identify attributes that are relevant for explaining heterogeneity in impacts of CLTS.
 - Useful in the quantitative impact evaluation analysis in order to explain success or failure of the CLTS intervention.

Experimental Games

- After the household questionnaire, the respondent draws a number and he/she may be selected for participating in the games (25-30 participants)
 - Games are played on the last day in each community.
 - Only adults can participate from the game.

Invitation pour participer JEU POUR ADULTES

Prénom Nom du participant

âge

Sexe

No. identifiant du ménage



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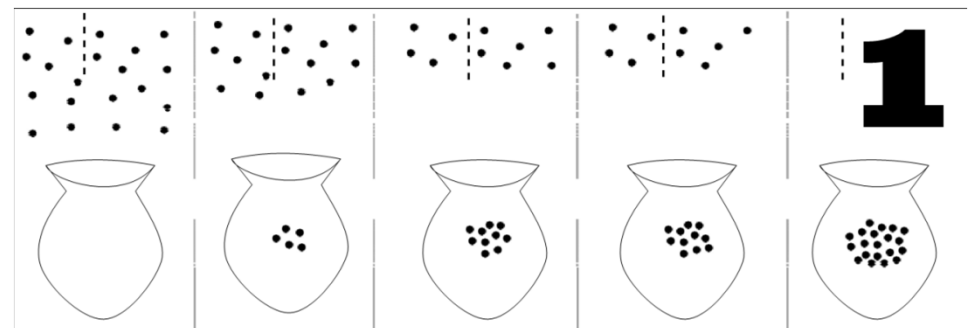
Experimental Games: Investment Game

- A group of 25-30 participants will play three rounds where they each get a token (***Niyoro***) have to decide whether to contribute to a common pot (***Foroba***).
- If the player keeps the token, he/she gets 10 points.
- If the player contributes with his/her token to the common pot, the prize is 1 point for each player who contributes.
- Total of 3000 players in 120 communities for the baseline.
- Banners were used to explain results in different cases:
 - High, low, etc.

Investment Game

- 1st round: No communication between players is allowed.
 - 2nd round: They can discuss among them and decide how to play
 - 3rd round: One of the players gets randomly selected and has to explain the game to the rest.
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- After each round players are asked predictions about how they think the rest of the players will behave.

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The “Rankings” game

- Objective: identify leaders and influential individuals.
- First, the participants rank themselves forming a circle sorting themselves by height.
- After that, they have to rank the better dancers for a regional competition.
- In the third round, they have to decide on a ranking according to who would represent better the community.
- In the last rank, they have to decide who would best help them to resolve a conflict.
- Common problems faced by the villagers were used in order to motivate each round.
- Small prizes are awarded according to the points each player wins.

Pilot results

- Contribution increases after each round
- Predictions show high correlation with each player's action.
- Last round: 55-60% of contributions



Some more pictures

Team counting results



Game/prize setting



Results (so far)

- Variation in results according to group composition (men/women/age)
- Stable predictions
- Preliminary results for the baseline will be available in September 2011.

Final comments

- Introduction of games as a way to understand cooperation within a community.
- Game results can be correlated with other information we are gathering in the community (networks and social capital)
- Cooperation and trust may be important component behind the collective adoption of better sanitary practices.
- Repetition of games at follow up.