World Water Corps Monitoring Trip
Sunderbans Region, India
December 6-19, 2009

Sponsored by BC Corporate Volunteer Support Program

PNWS-AWWA Conference, May 2011

Boise, ID

water for people

the current of change

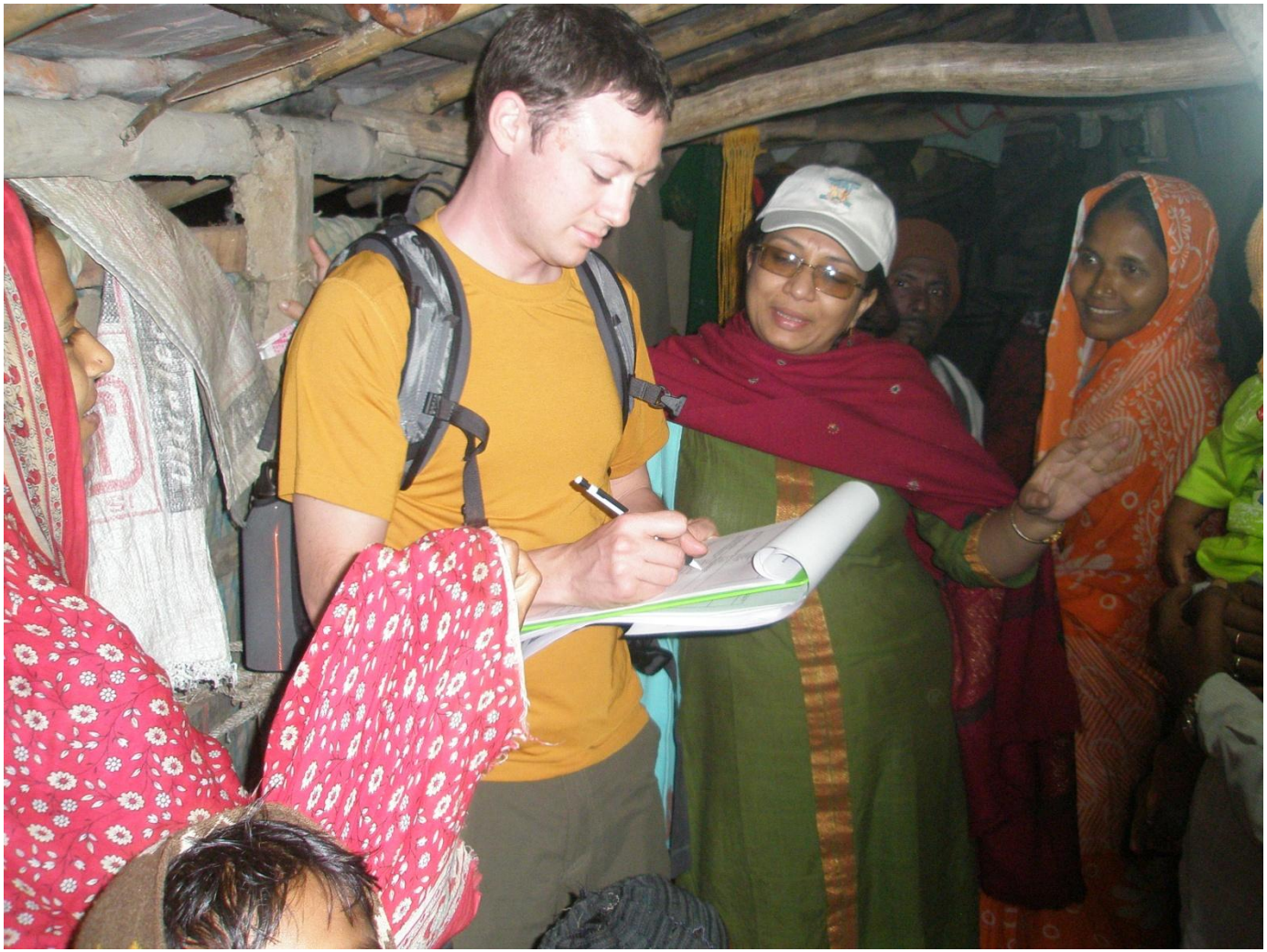
BROWN AND CALDWELL

Set the scene – village water pumps

BROWN AND CALDWELL

Set the scene – follow-up site visits

Set the scene – community interviews



The Road Map…

- First, some context:
  - Purpose
  - Who and Where
  - Local Water for People program
  - Cyclone Aila
- Then, the field work:
  - Field visit methodology and interviews
  - Technology and Integrated Water Management
  - Local agriculture
  - Engineering tidbits
  - School visits and donations at work
  - What else?

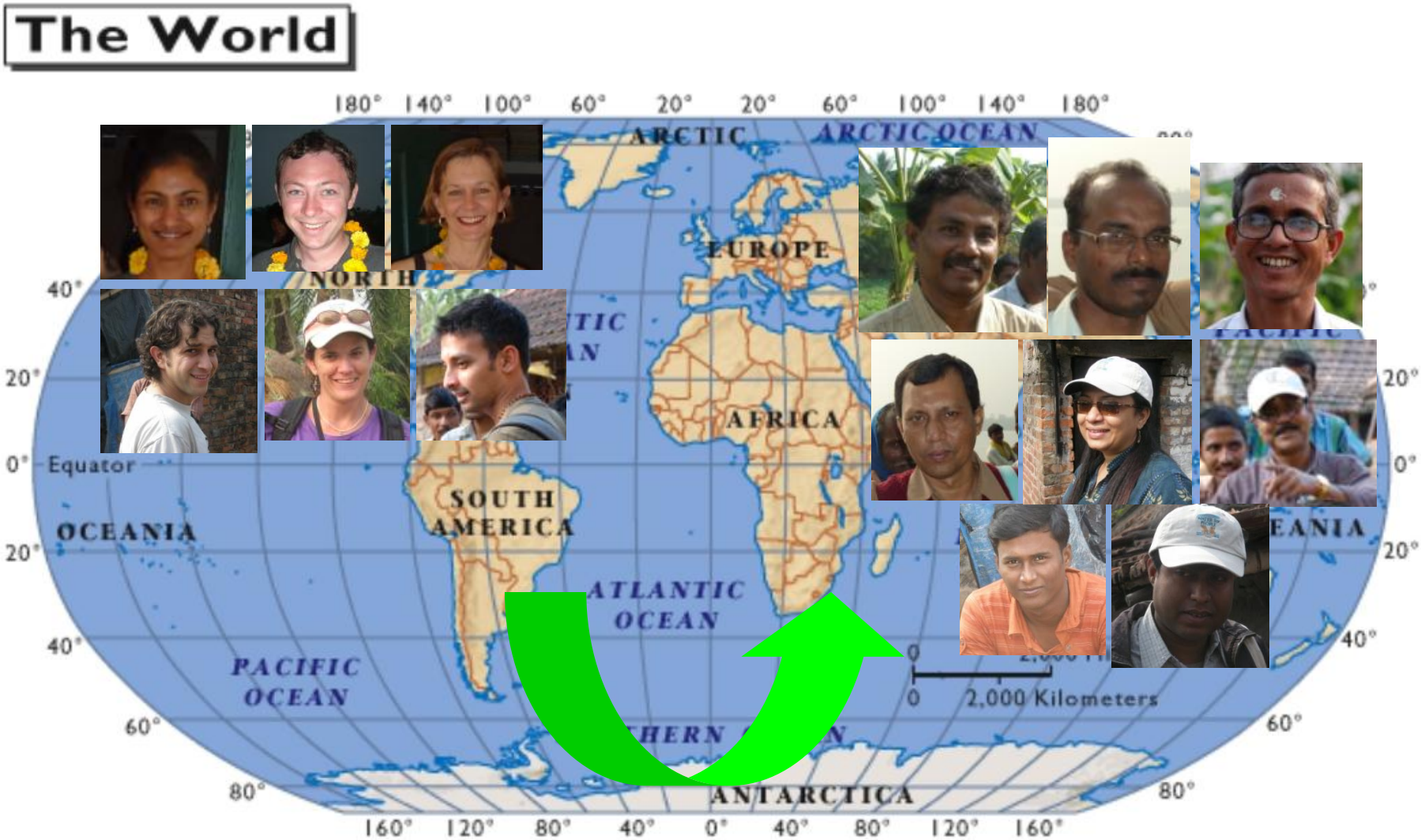
Purpose of the assignment

- "Monitoring" – to go back and assess work already completed
- 71 handpumps installed between 2005-2008
- Conduct Community and Household interviews to collect information on water use, sanitation, and hygiene practices
- Perform field tests to assess water quantity, access, and quality by various metrics
- Provide recommendations for future work based on field results and other indicators from interviews
- Provide an outside assessment of WFP and NGO work

Those involved

- WFP Denver and Calcutta staff
- Partner NGOs
  - Rural Aid
  - Sabuj Sangha
  - SSDC
- American and Canadian engineers and a hydrogeologist

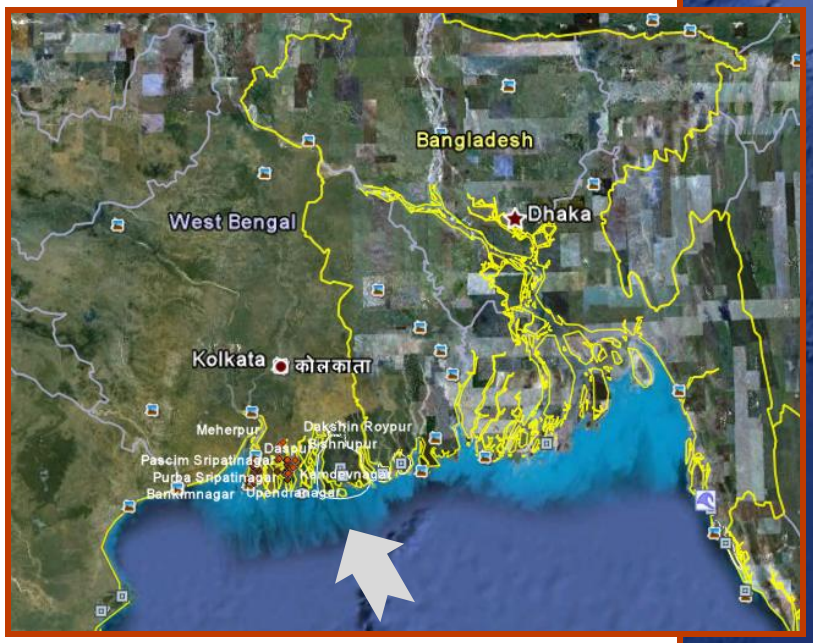
Who and Where



Where in the world?

West Bengal, India

South of Kolkata
(Calcutta)



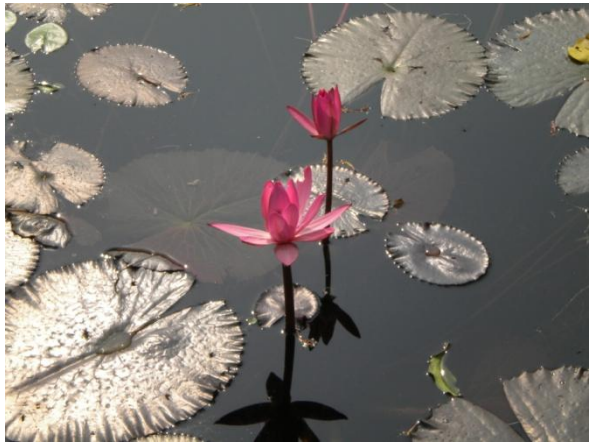
BROWN AND CALDWELL

Sunderbans – Fingers of the Ganga

Water for People program

- Primarily a funding agency
- Provide funds, work with local partner NGO to implement hand water pump installations
- Emphasis on having a community structure for collecting user fees and maintaining the pumps – high incidence of breakdown with government pumps because no one takes ownership, they break and are not fixed

Calcutta!



Calcutta!

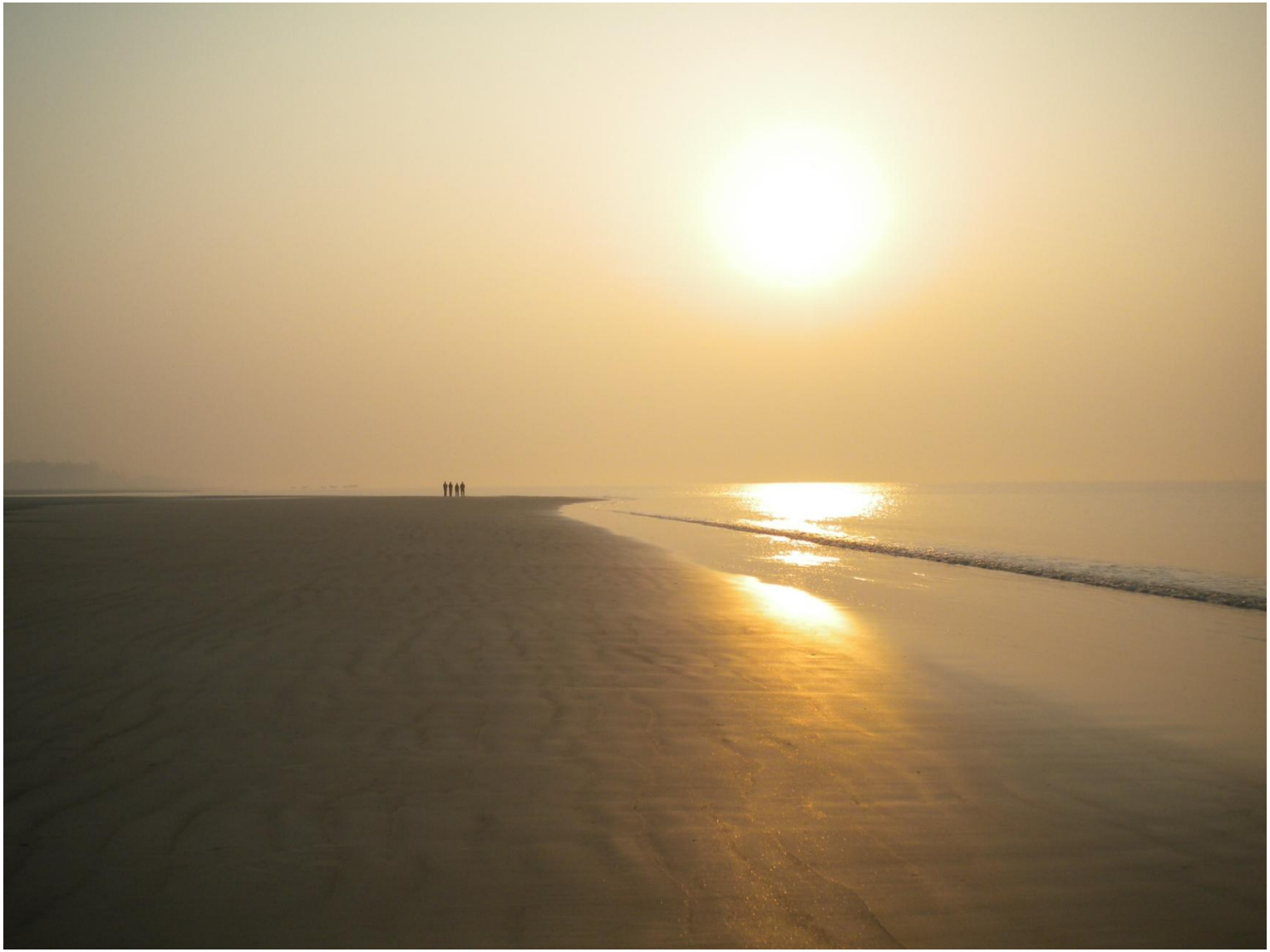
From Calcutta to the field

BROWN AND CALDWELL

Guesthouses

BROWN AND CALDWELL

Some final context – Cyclone Aila



BROWN AND CALDWELL

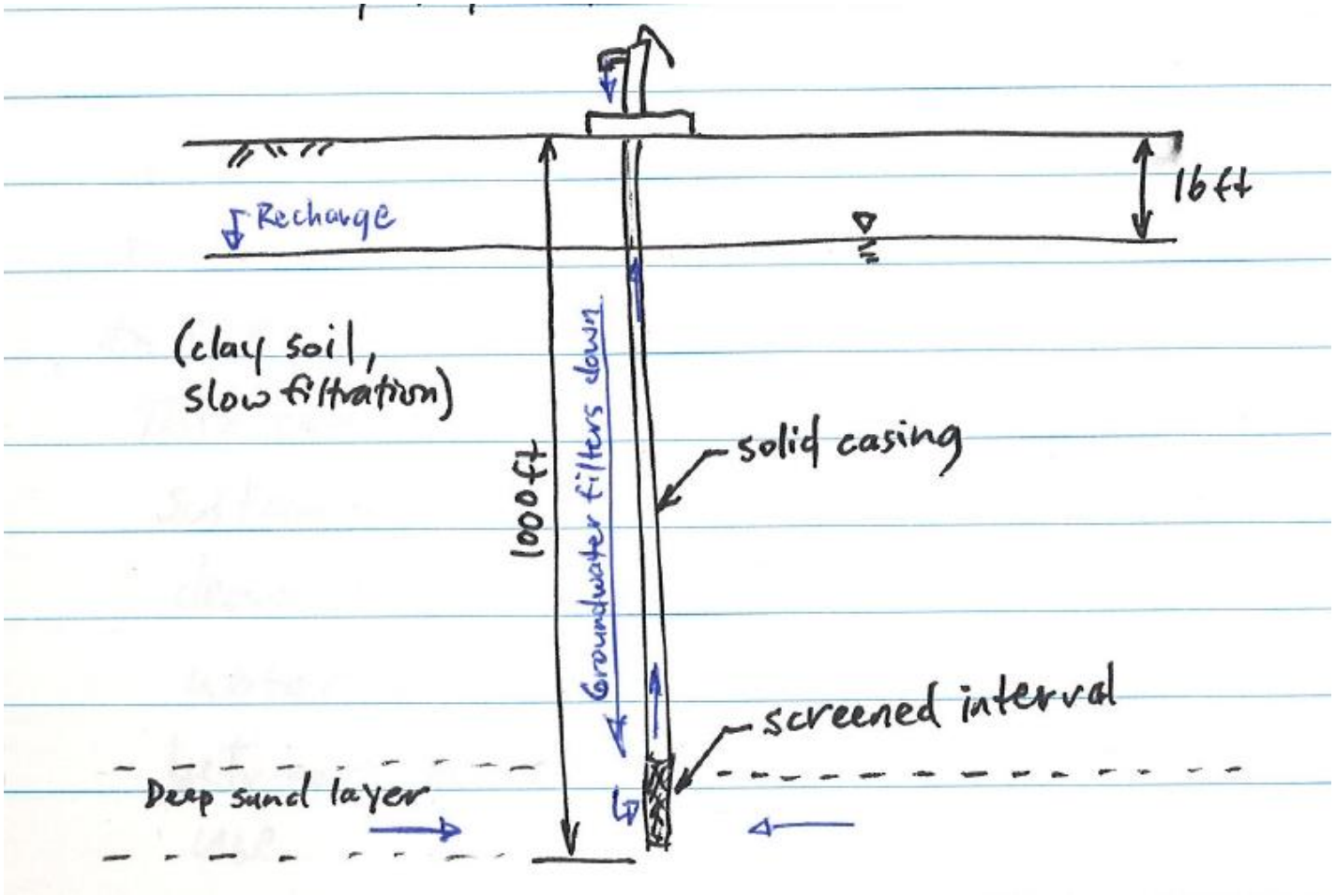
Some final context – Cyclone Aila

BROWN AND CALDWELL

Out to the field…

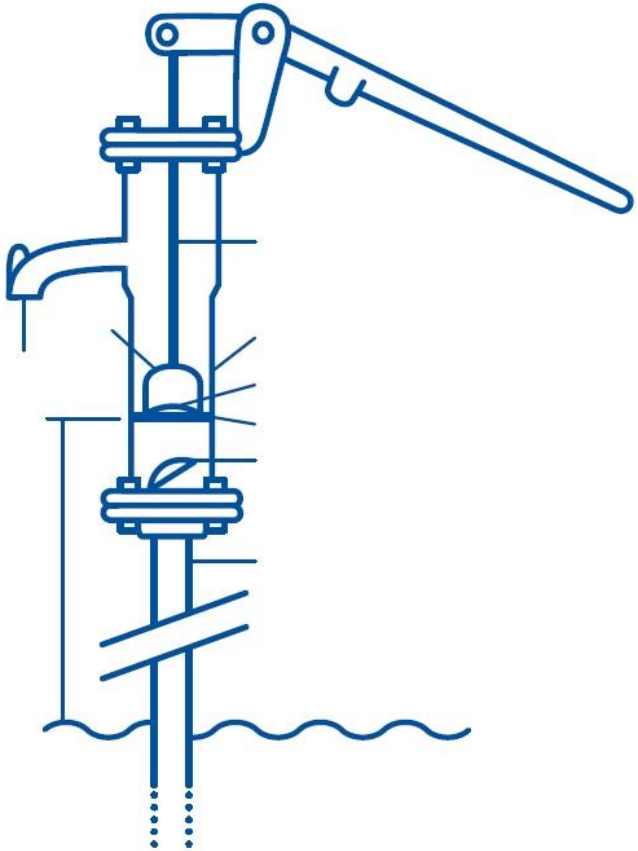
Community and Household Monitoring

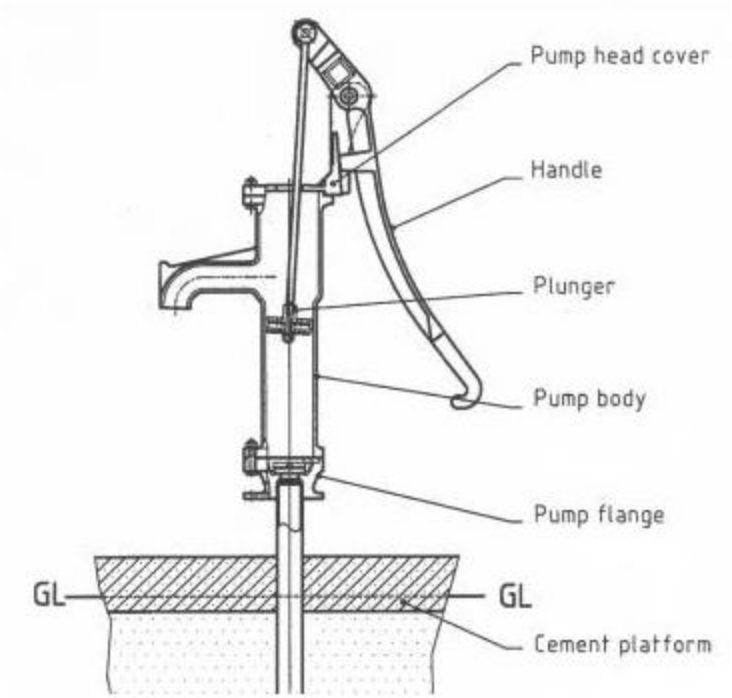
- Local geology…



Community and Household Monitoring

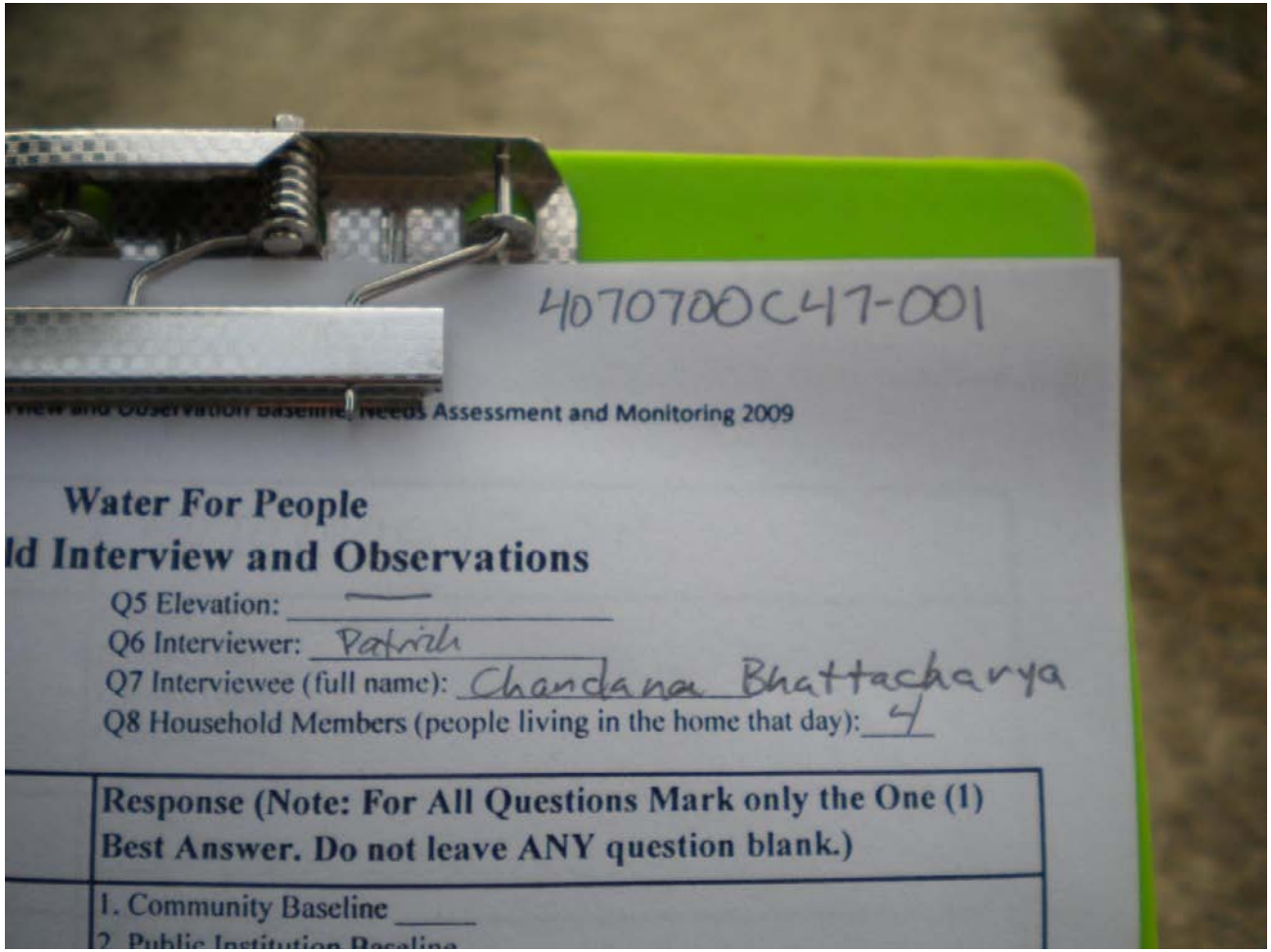
- A quick look at handpumps…





Community and Household Monitoring

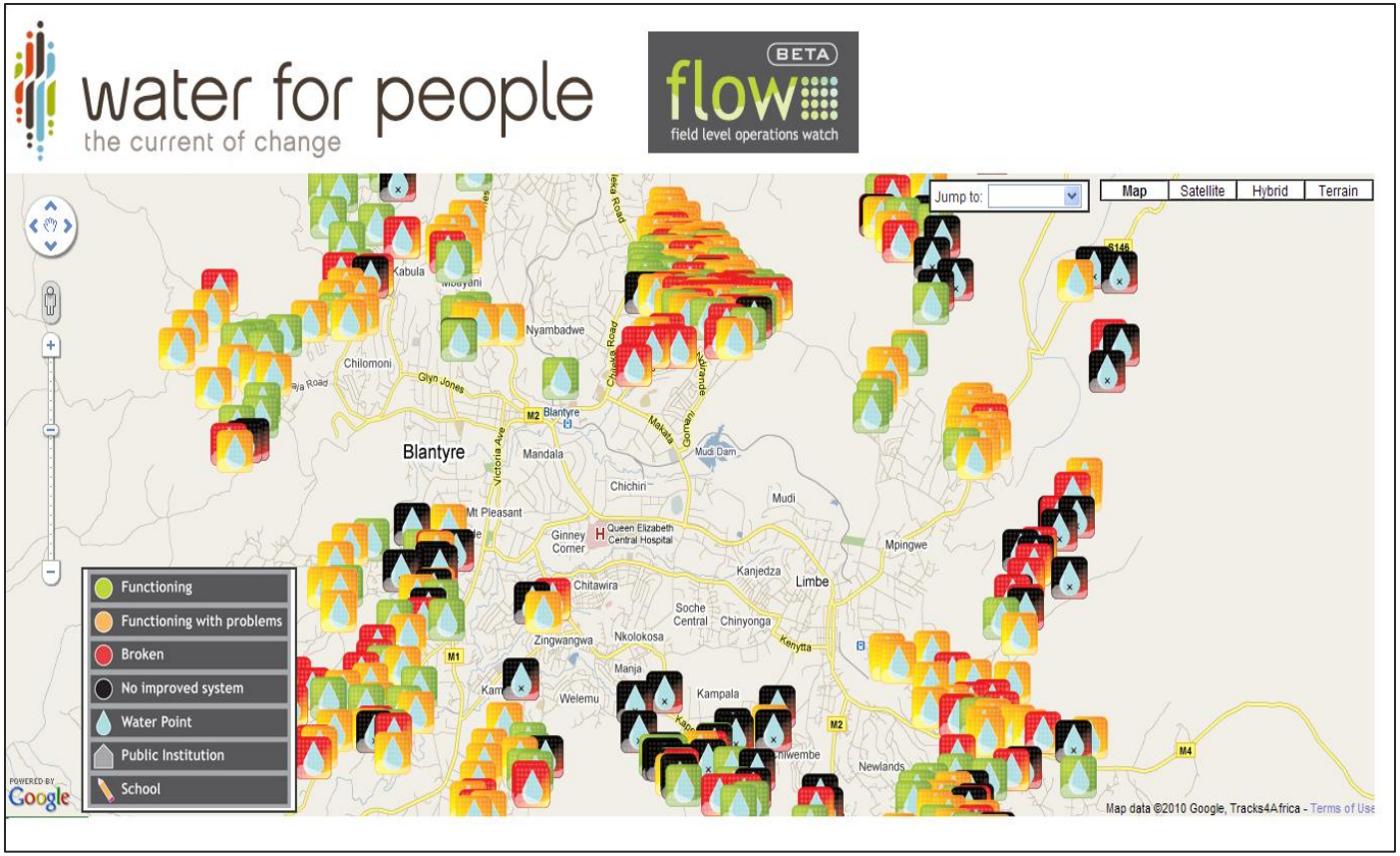
- One of the last groups to use paper data sheets…



Community and Household Monitoring

Community and Household Monitoring

- Now using electronic FLOW system to track data:
- Field Level Operations Watch



BROWN AND CALDWELL

flow
field level operations watch

This FLOW data is provided by Water For People

system | functionality | access | down time | quantity | tariff | financial

Rwanda | Rulindo

Water Points Surveyed: 117 communities

Water System

Is there an improved water system?

79%

21%

flow
field level operations watch

This FLOW data is provided by Water For People

system | functionality | access | down time | quantity | tariff | financial

Rwanda | Rulindo

Water Points Surveyed: 117 communities

Functionality

Operational status of system

Community and Household Monitoring

- Community Methodology:
  - One interview with a water committee leader
  - Community information (name, lat/long, etc.)
  - Fee collection and maintenance
  - Any issues past or present
  - Visual observation of damage to pump or concrete apron
  - Any evidence of human or animal feces, latrine in close proximity, animals accessing the water point
  - Water quantity tests
  - Water quality tests for some (bacteriological only, arsenic an issue to the north)

Community and Household Monitoring

- Household Methodology:
  - Five interviews in community water user households
  - Usually the female head of household, because she deals with water
  - Ask about water use patterns
  - Family hygiene practices
  - Visually inspect latrine, if available
  - Estimate the time and distance to collect water (government standards)

Community and Household Monitoring

Community and Household Monitoring

BROWN AND CALDWELL

Community and Household Monitoring

Community and Household Monitoring

BROWN AND CALDWELL

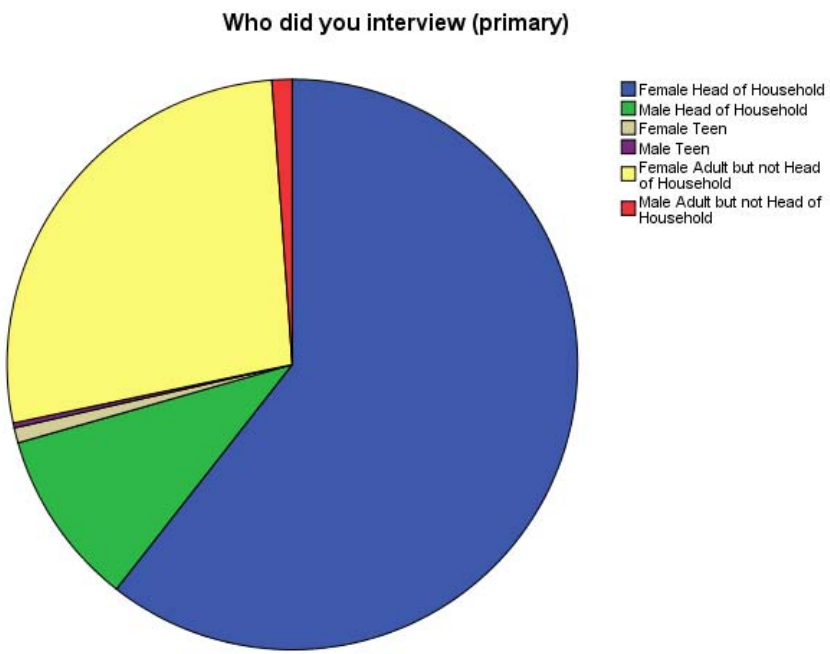
Community and Household Monitoring

Community and Household Monitoring

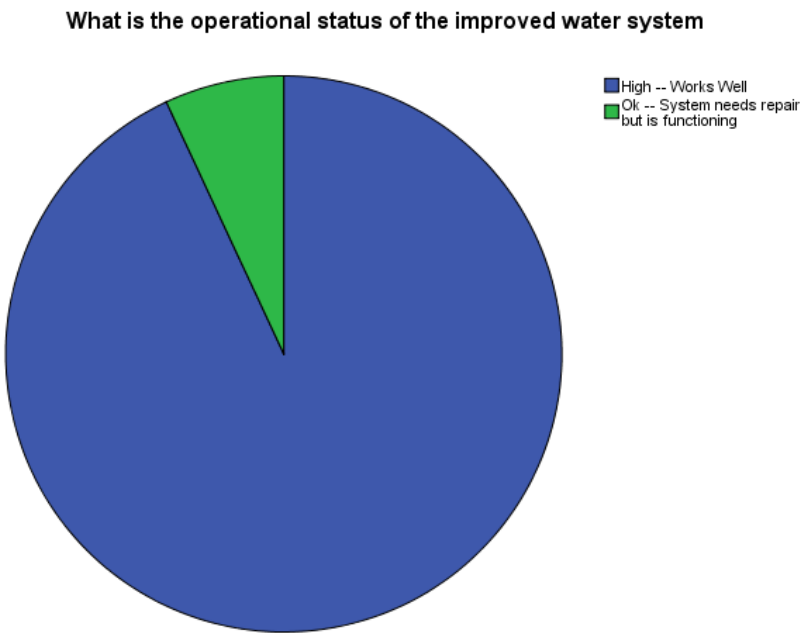
Interview Results

Interview basics:

Who interviewed?



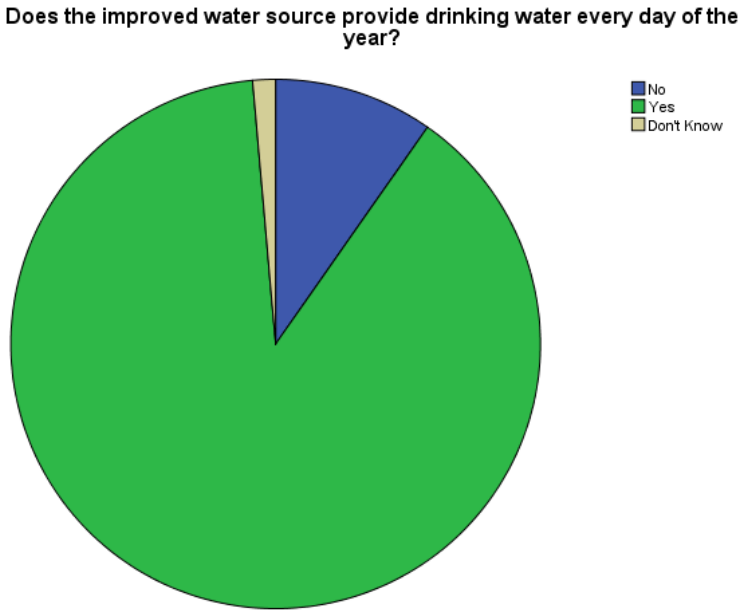
Water system fully operational?



Interview Results

Water availability and quantity:

Adequate water year-round?

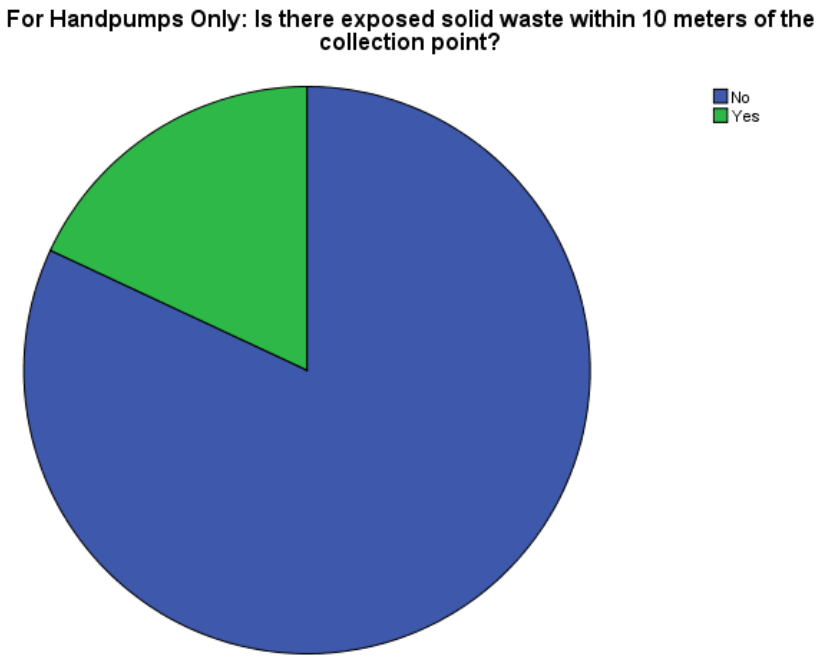


Quantity meets government standards?

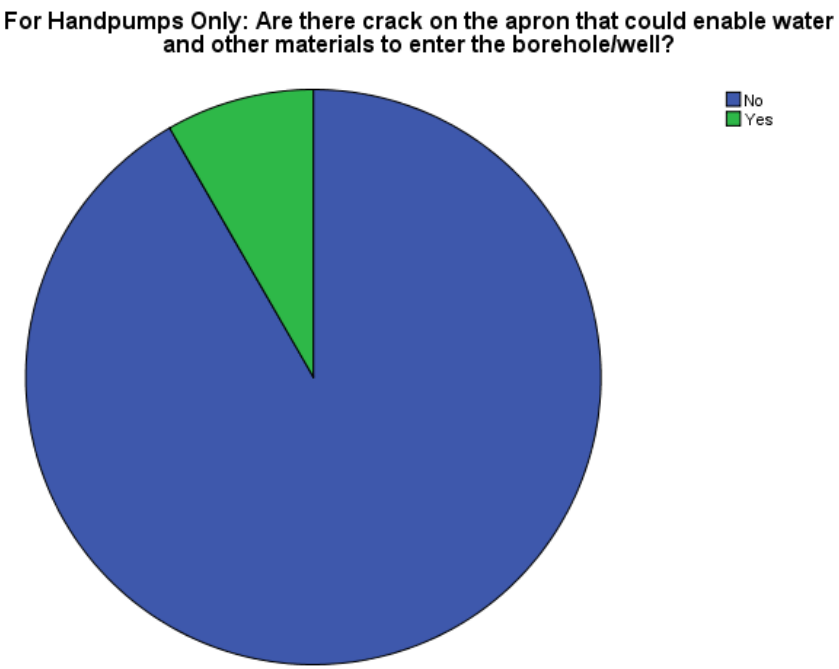
Interview Results

Potential for well contamination:

Nearby animal waste?



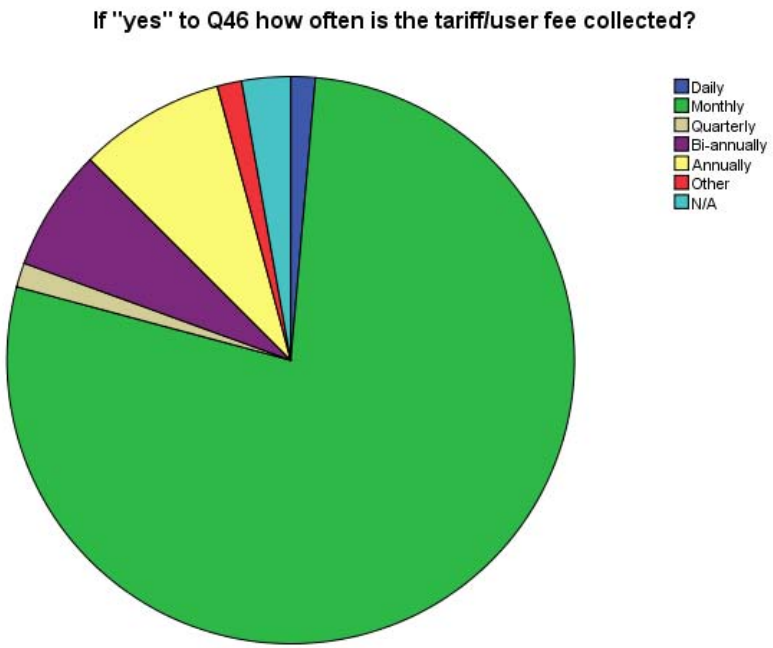
Cracks in well apron?



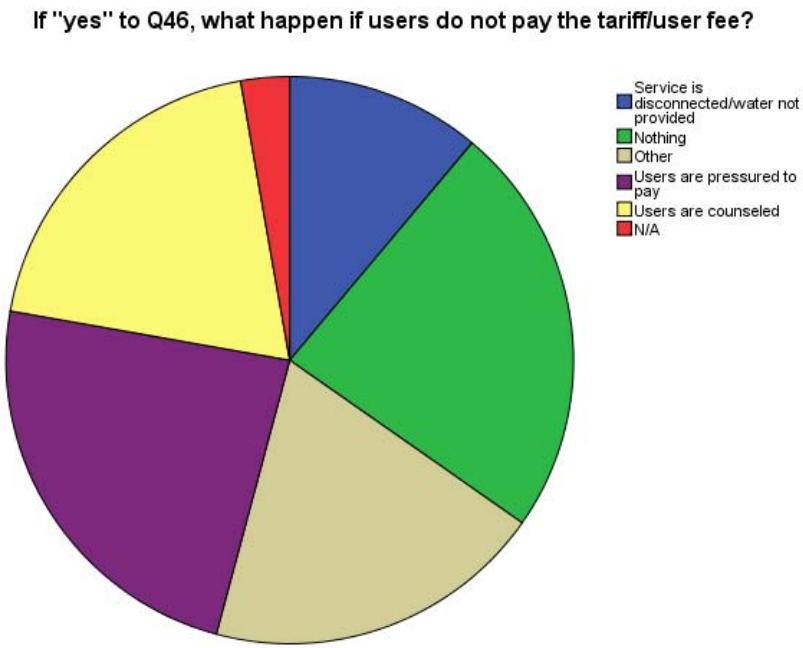
Interview Results

Collection of user fees for maintenance:

How often collected?



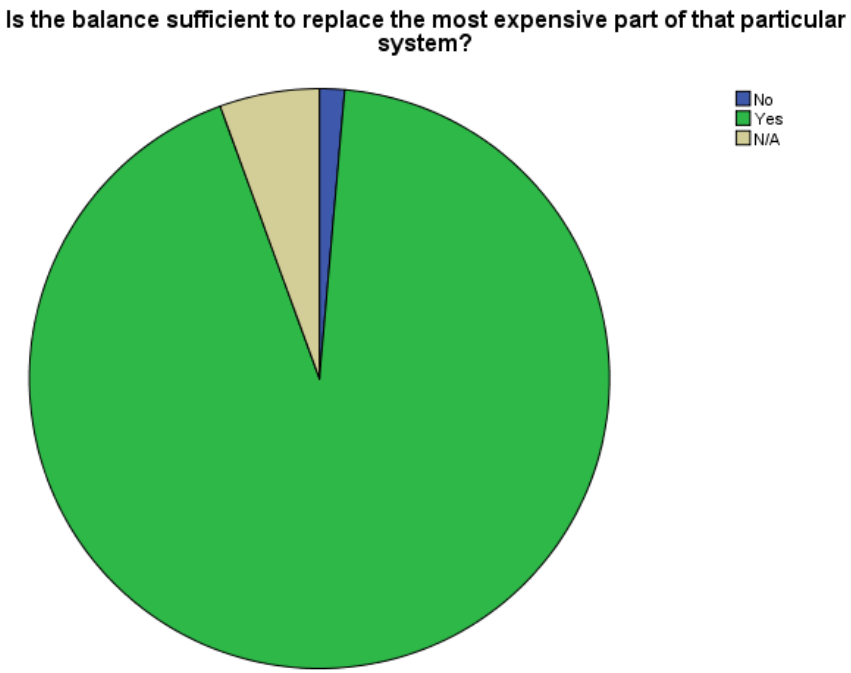
Action for non-payment?



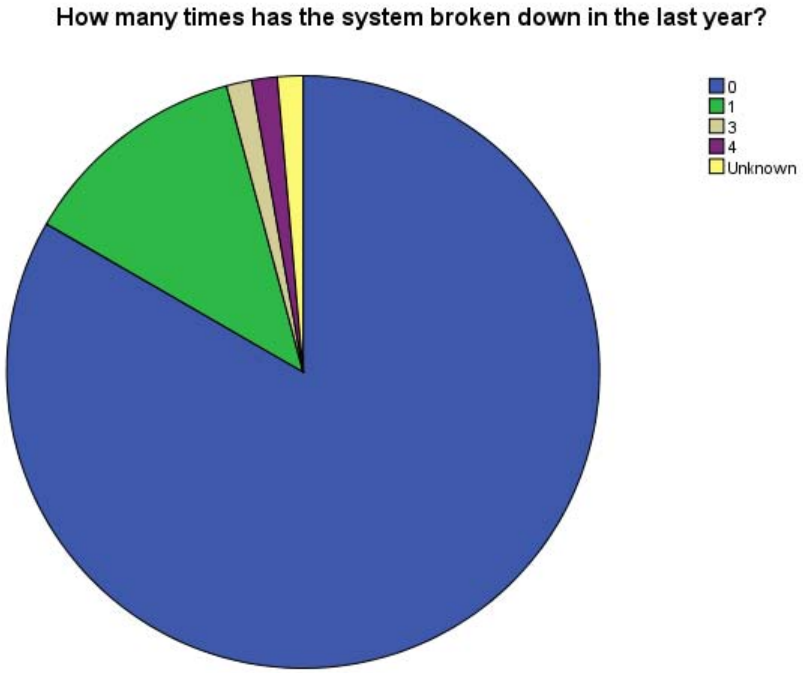
Interview Results

Maintenance:

Funds available to replace expensive parts?



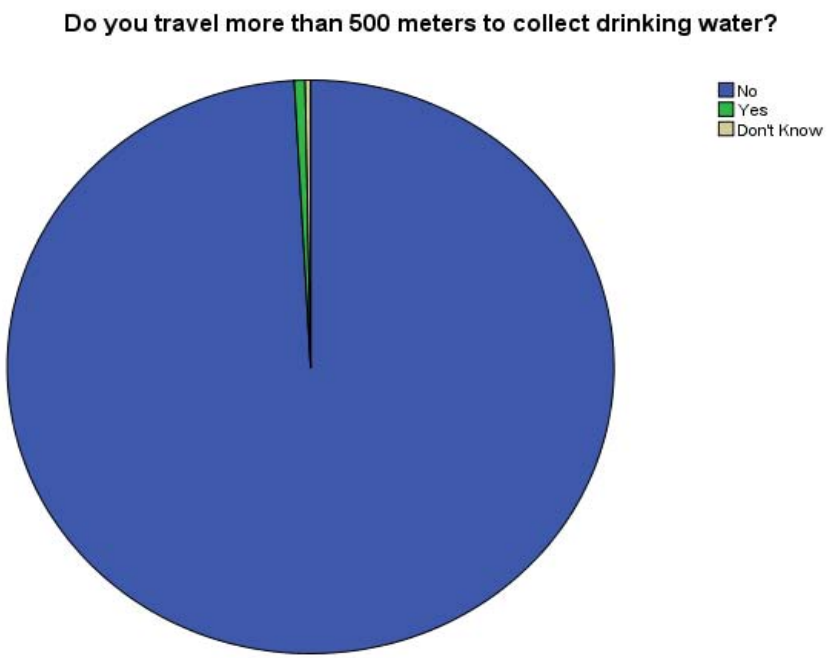
System breakdowns this year?



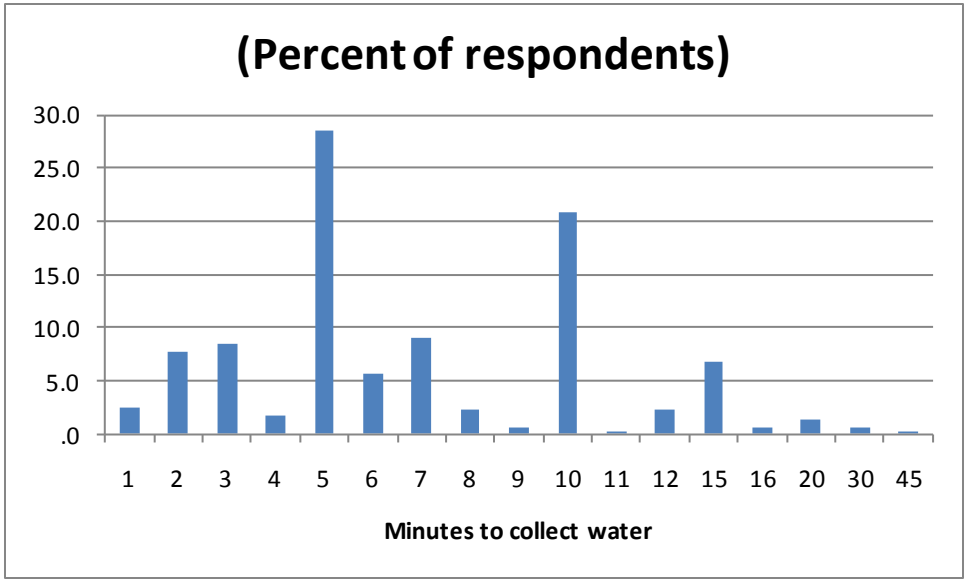
Interview Results

Water access:

More than 500 meters to well?



Minutes to collect water?



Median and mean = 6 to 7.5 minutes

Results Summary

- Nearly all handpumps are currently working, and appear to be maintained
- Water committee approach to managing maintenance appears to have benefits
- Positive bacterial test results at well pumps need follow-up
- Sanitation facilities and hygiene practices vary widely, and interview results provide some preliminary indicators for future work
- People generally are getting clean water for drinking, cooking, and other productive uses year-round, and from an accessible source.

Tea break

- Let’s take a couple questions…

Back to work…

BROWN AND CALDWELL

Sanitation Technology

Holistic approach:

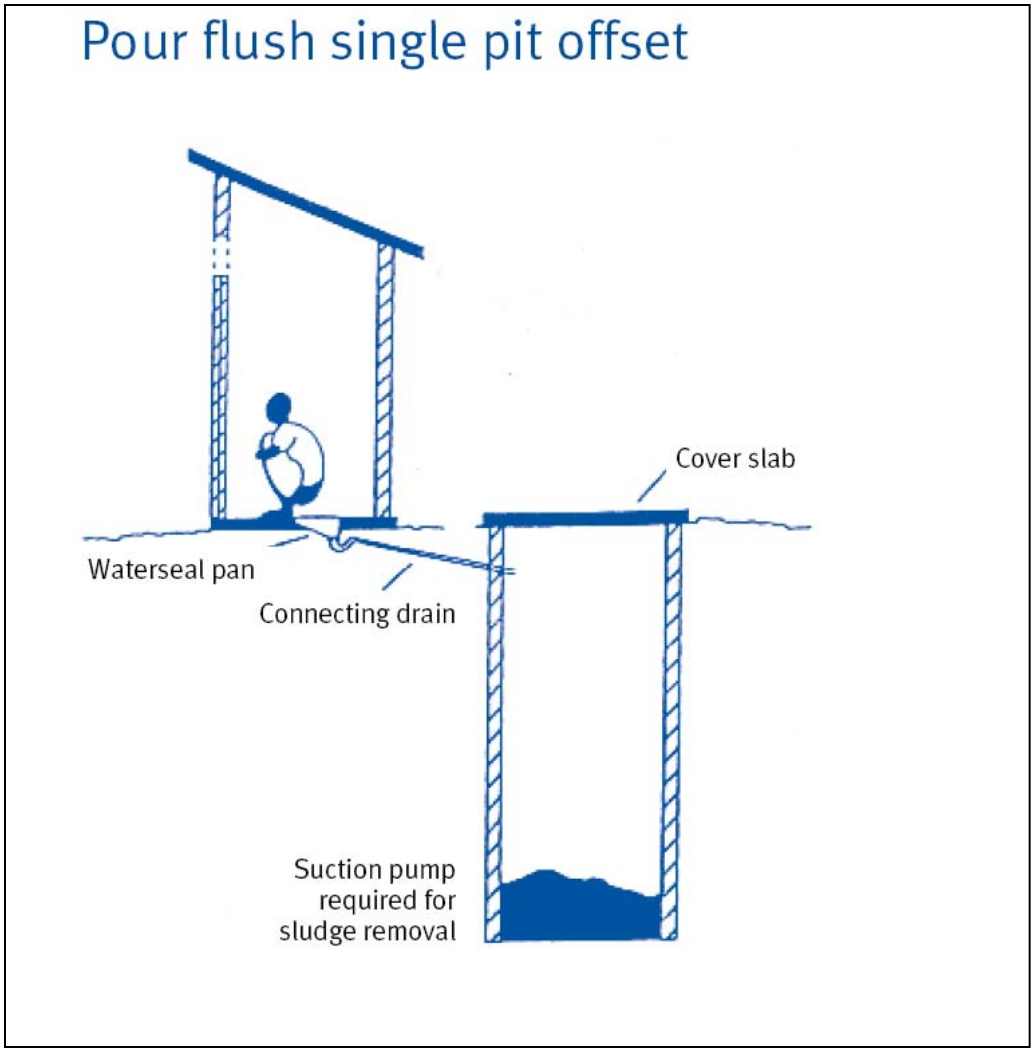
Water and wastewater issues are often closely related in communities that Water for People work with.

Sanitation Technology

Pour Flush Latrines:

Sanitation Technology

Sanitation Technology



Sanitation Technology

Rs 45 = $1

Photo 1 => $15 - $40

Photo 2 => $80 - $120

Photo 3 => $250 - $275

Sanitation Technology

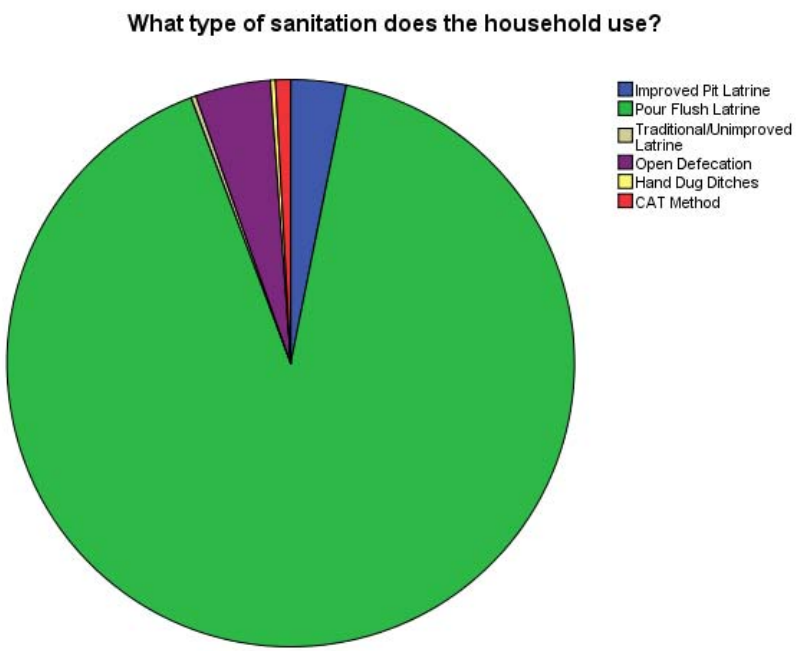
Sanitation Technology

BROWN AND CALDWELL

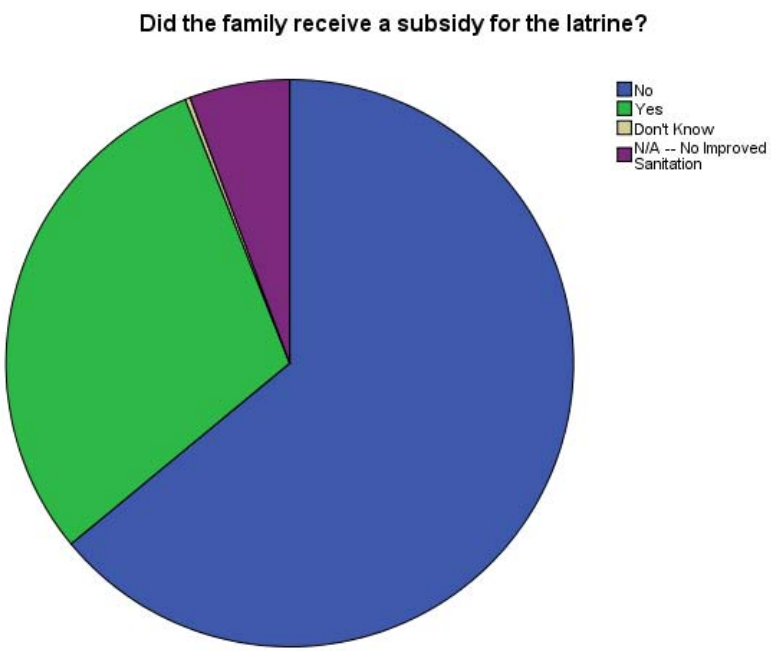
Interview Results

Sanitation type and subsidy:

Sanitation type?



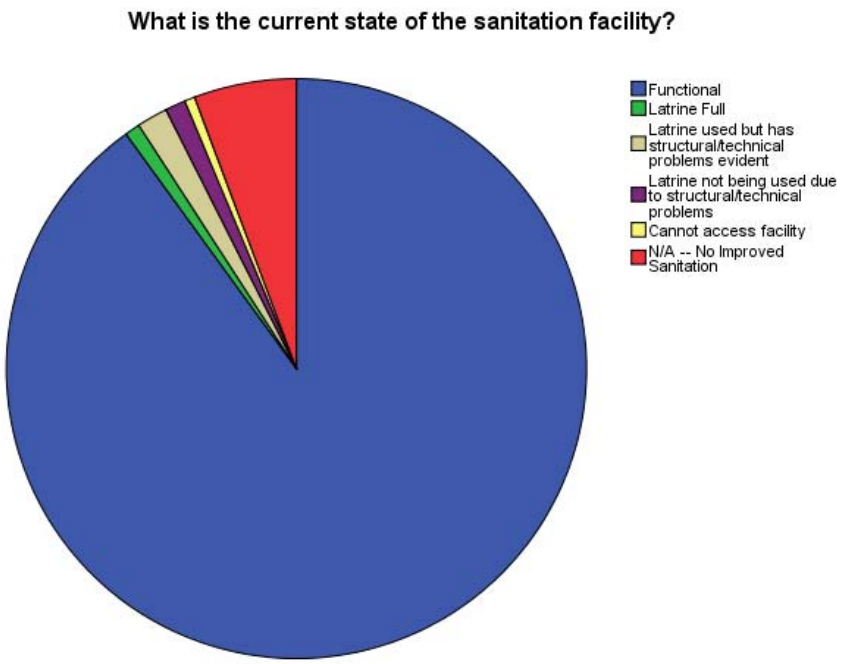
Subsidy for latrine?



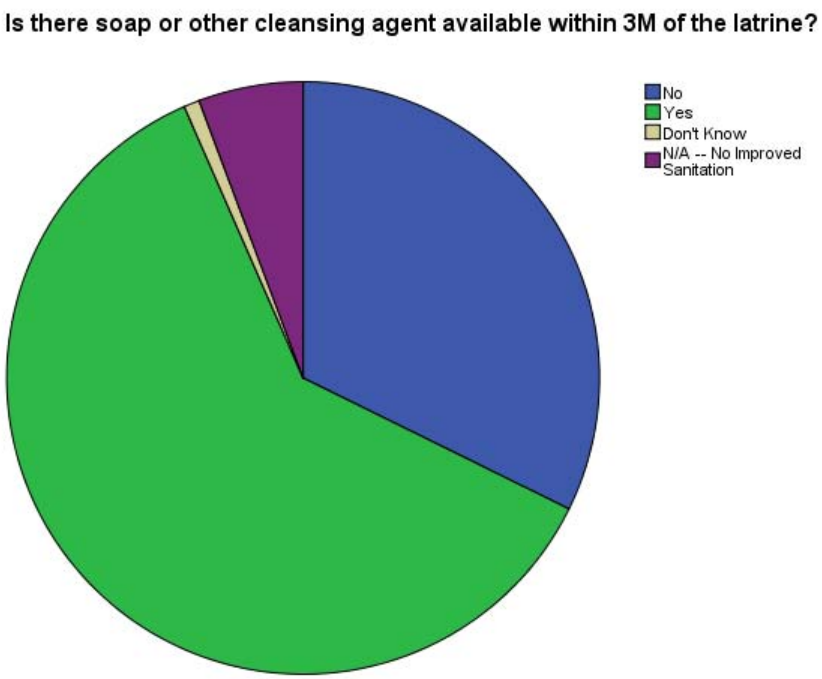
Interview Results

Sanitation status and hand washing:

Current latrine status?



Soap available?



Results Summary

- Sanitation facilities and hygiene practices vary widely, and interview results provide some preliminary indicators for future work

Integrated Water Management

- High roads and houses
- Low fields and ponds
- Monsoon water floods rice paddies for planting
- And fills ponds for dry season irrigation, animals, bathing, and other non-potable uses

Integrated Water Management

Agriculture - Rice

Agriculture - Straw

Agriculture - Straw

Agriculture – Betel Leaf

Agriculture - Livestock

BROWN AND CALDWELL

Agriculture - Livestock

BROWN AND CALDWELL

Agriculture – Cow Dung

BROWN AND CALDWELL

Engineering photos for water professionals

- Fire flow tank at festival ground:

Engineering photos for water professionals

- Better than steel:

Engineering photos for water professionals

- Bricks and sticks: common rural construction materials

Engineering photos for water professionals

- Road construction:

Engineering topics for water professionals

- Municipal Calcutta wastewater goes through treatment “wetlands” system
- Air pollution is endemic in the city from polluting vehicles, diesel motors, and other sources
  - Law on construction dust passed while I was there
- Solid waste (un)management

Schools (WFP project partners)

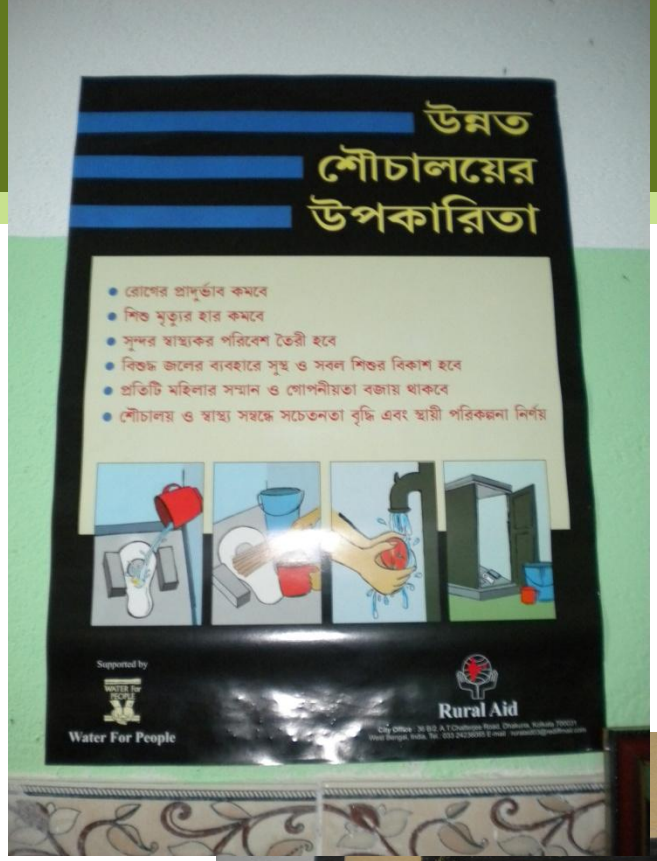
BROWN AND CALDWELL

Schools

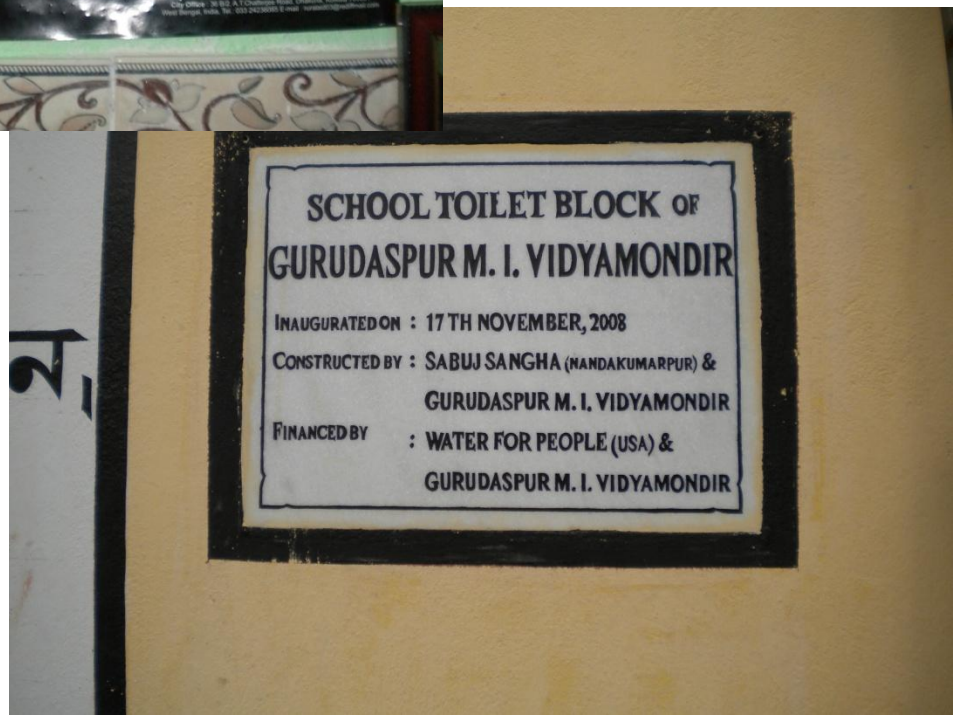
BROWN AND CALDWELL

Schools

KEEP IT CLEAN


উন্নত
শৌচালয়ের
উপকারিতা
রোগের প্রাদুর্ভাব কমবে
শিশু মৃত্যুর হার কমবে
সুন্দর স্বাস্থ্যকর পরিবেশ তৈরী হবে
বিশুদ্ধ জলের ব্যবহারে সুস্থ ও সবল শিশুর বিকাশ হবে
প্রতিটি মহিলার সম্মান ও গোপনীয়তা বজায় থাকবে
শৌচালয় ও স্বাস্থ্য সম্বন্ধে সচেতনতা বৃদ্ধি এবং স্থায়ী পরিকল্পনা নির্ণয়
Supported by
Water For People
Rural Aid

LADIES SPECIAL
(STAFF)


SCHOOL TOILET BLOCK OF
GURUDASPUR M. I. VIDYAMONDIR
INAUGURATED ON : 17 TH NOVEMBER, 2008
CONSTRUCTED BY : SABUJ SANGHA (NANDAKUMARPUR) &
GURUDASPUR M. I. VIDYAMONDIR
FINANCED BY : WATER FOR PEOPLE (USA) &
GURUDASPUR M. I. VIDYAMONDIR

Schools

BROWN AND CALDWELL

Thank you!

- WFP for inviting us
- WFP and NGO staff for hosting, guiding, and translating for us
- BC for sponsorship that made the trip possible
- You all for listening

And away we go…

Any questions?