

Point of Use Water Treatment in Rural Cambodia

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Background

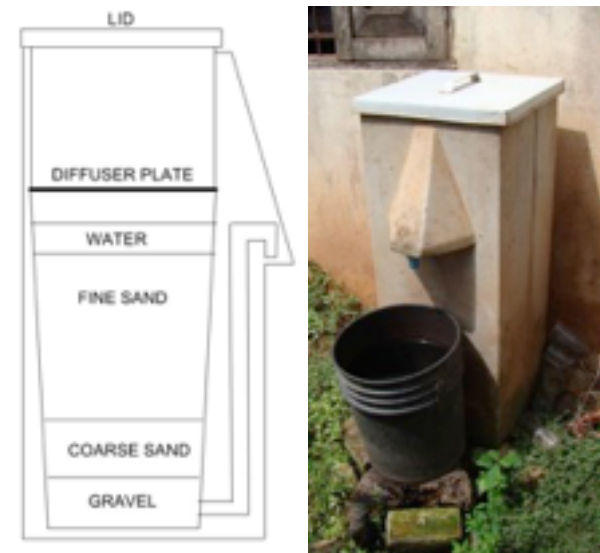
- The WHO has identified point-of-use (POU) water treatment as an effective intervention to provide safe water to homes
 - Reduction of contamination from source to home
 - Capable of dramatically improving the microbial contamination of water

Background

- 2 POU technologies used widely in Cambodia and around the world



Ceramic water filter



BioSand Filter

Background

- Technologies have been implemented for 7+ years
- Very few refereed publications in journals
- Little is known on their capabilities to remove chemical constituents from water supplies
- Long term performance and sustainability is not well understood



Study Sites

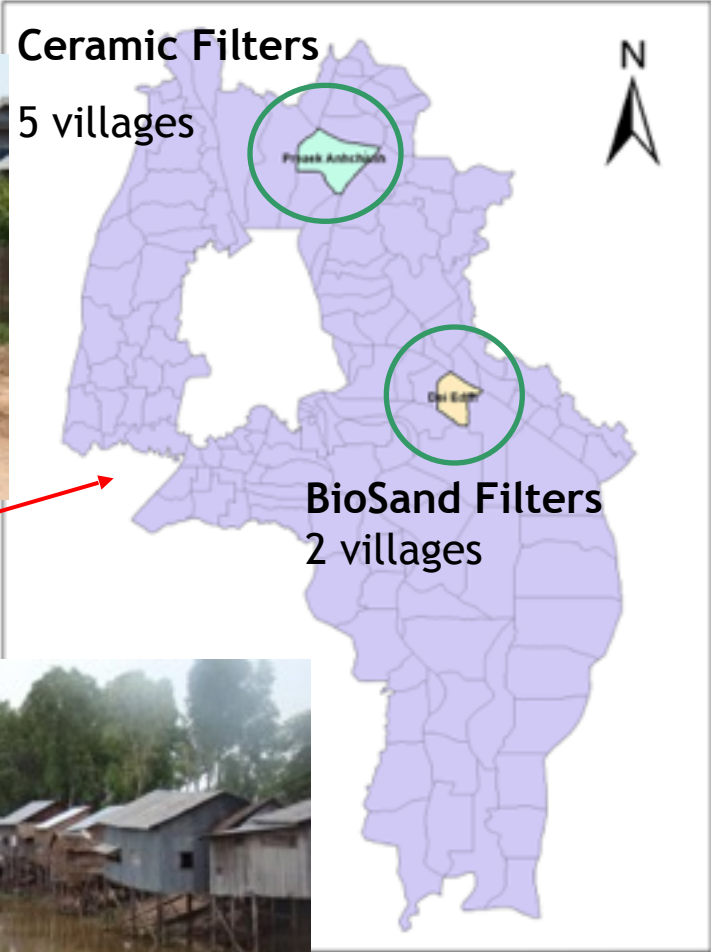


Kandal Province, Cambodia



Ceramic Filters

5 villages



BioSand Filters

2 villages



Water Assessment



Phase 1- Initial Survey of Households

During October 2008 hundreds of households were visited door-to-door in seven rural Cambodian villages

Ceramic Filters

- 5 villages
- Population of Filters: 74
- Implemented: May 2008
- Total Found: 65
- Total # of households where samples were collected: 56

BioSand Filters

- 2 villages
- Population of Filters: 81
- Implemented: 2001 to 2007
- Total Found: 81
- Total # of households where samples were collected: 59

At each visit a questionnaire was administered and influent and effluent water samples were collected.

Elements for Success

Technology Delivery &
Monitoring

Quality Control

Maintenance
Practices

Affordability

Sustainability

Health &
Hygiene Impact

User feedback &
satisfaction

Elements for Success

Technology Delivery &
Monitoring

“you can’t just open your door and hand out fifty filters and expect people to grasp that they are worthwhile, that they are useful, it doesn’t work. You have to invest in education and time and accountability”

Elements for Success

Affordability



“if we give the water filter for free... it cannot be sustained... because they think free... and that next time they will get free and then they do not need to take care... that is why the participation fee is very important”

User feedback & satisfaction



Categories of Comments	BioSand Filters	% of total	Ceramic Filters	% of total
Aesthetics (look/ taste of water)	<ul style="list-style-type: none"> “clean water” (11 households) “no dirt inside water” “clean, clear water” “good taste” 	42.5%	<ul style="list-style-type: none"> “clean water” (9 households) “clear water” (3 households) “clean water after filter” “no smell, no colour” 	33%
Quality of filter (or water produced)	<ul style="list-style-type: none"> “a good filter” (5 households) “good water quality” “treat water” 	21.5%	<ul style="list-style-type: none"> “good quality” “treats water” “can treat water” “ can get quality water” “it makes the water quality better” “more treated than source water” 	14%
Ease of Use/ Time savings	<ul style="list-style-type: none"> “easy to filter” “fast” “saves time” “have a good filter” “no need to boil water” 	15%	<ul style="list-style-type: none"> “easy to use” (4 households) “no need to boil”(6 households) “simple” “save time” (from boiling) “easier to store for drinking” “easier than boiling” “no need to wait for water to boil” “easy to take water for drinking” 	37%
Health related	<ul style="list-style-type: none"> “safe to drink” “reduce illness” “good hygiene” “reduce bacteria 80%” “kills bacteria” “no bacteria” 	18%	<ul style="list-style-type: none"> “no diarrhea” (3 households) “no diarrhea when I drink the water” “when we drink water, it doesn’t cause disease” “have clean water to drink” 	14%
Other	<ul style="list-style-type: none"> “ want to use because neighbour has one” 	3%	<ul style="list-style-type: none"> “pay less money” 	2%

Are these technologies “appropriate” ?

- **YES & NO**
- No one technology can:
 - treat every type of source water
 - can match the needs of a community and be appropriate in all circumstances
- Technology needs to be matched to the local context
- Attitude of a “one size fits all” technology needs to be changed

