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CIVIL AND ENVIRONMENTAL ENGINEERING

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Electrochemical Arsenic Remediation (ECAR) for Rural South Asia: *Recent Field Results and the Road Forward*



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The Problem - Natural Arsenic in Groundwater



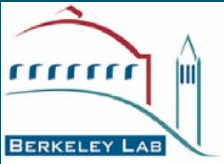
Millions in S. Asia drink from contaminated wells



Poisoning leads to hand lesions, cancers, and death



HH remediation is quickly abandoned.



One Solution

ElectroChemical Arsenic Remediation (ECAR)

Simple Mechanism:

- Electricity makes iron rust
- Rust binds to arsenic
- Rust-Arsenic filtered out



Key Advantages:

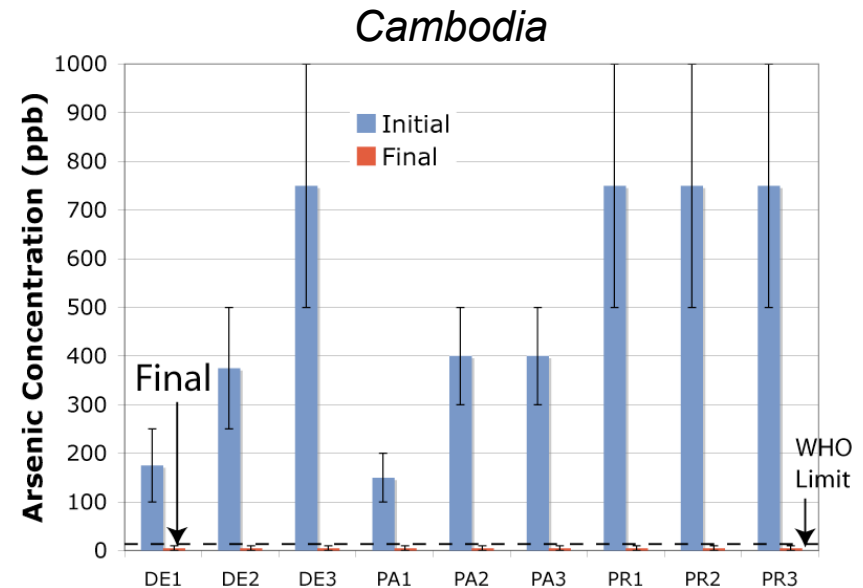
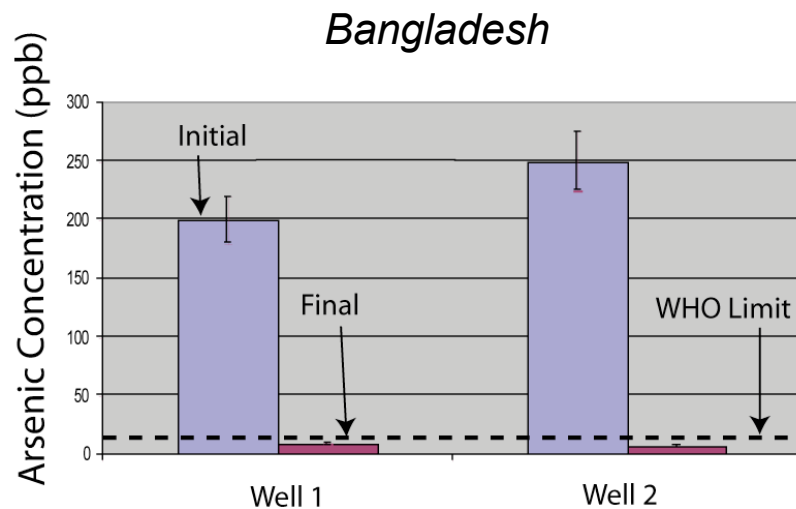
- Low cost (\$1.39/per/yr)
- Effective (As < WHO limits)
- Min Supply Chain (50g/pers/yr)
- Little Waste (130g/pers/yr)
- Low maintenance (expected)
- Easily Scalable

Key Challenges:

- Electricity Source (6-8 Hr/day)
- Young Technology

Recent Results & Progress

Initial Field Tests in Bangladesh and Cambodia (2008)



- Complete As removal in both locations
- Survey/interviews Completed in Cambodia

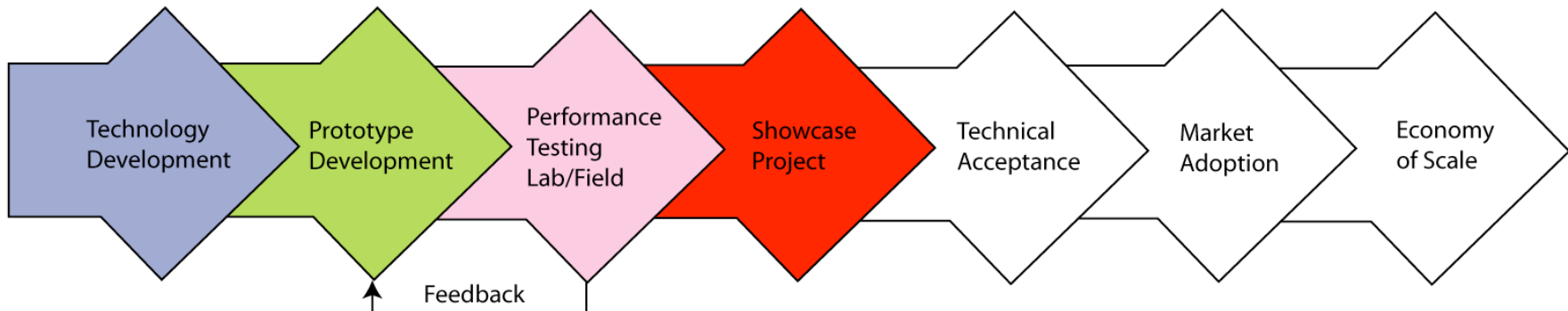
New knowledge on ECAR mechanism discovered

- subject of dissertation (Addy, 2008).



Future Plans & Vision

Berkeley ECAR Team Public/Private Partnership



Quick Field Tests

B'Desh, Cambodia

ECAR Technology Development



India

2009 - 2010

Pilot Project

2011

GOALS:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Find Partners for Pilot • Continuous operation in India (1mo). | <ul style="list-style-type: none"> • Continuous Operation in India (3-5mo) serving water. • Survey users |
|---|--|





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QUESTIONS?

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