

A Constructed Wetland System for Flood-Resilient Sanitation



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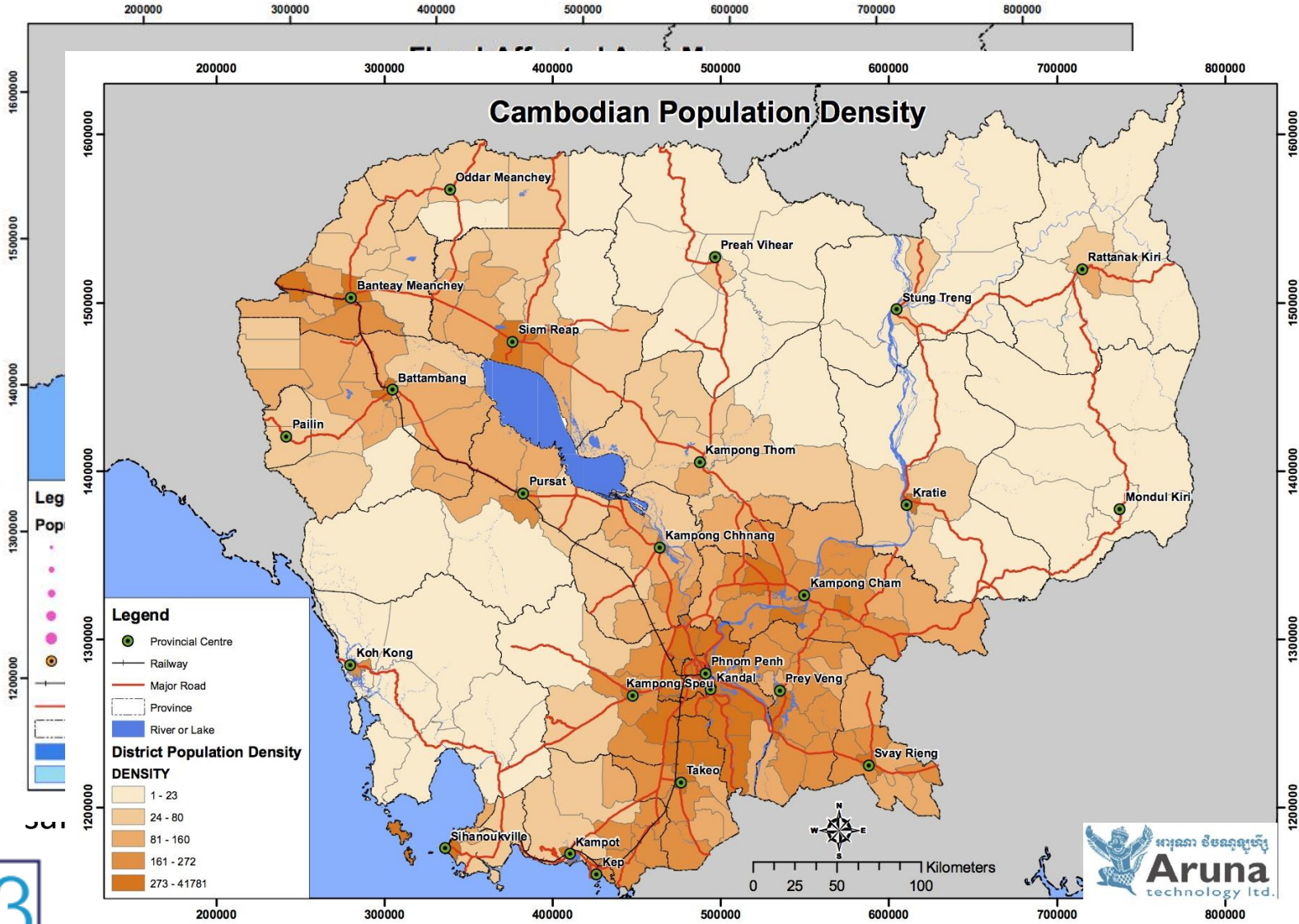


Flooding: a sanitation challenge

- Worldwide, increasing with climate change
- Asia: large populations live in flood-prone areas
- Cambodia: severe flooding in 2013 affected more than 700,000 people
- Even predictable, annual flooding is a challenge

Cambodia: progress on (dry season) sanitation

- 37%

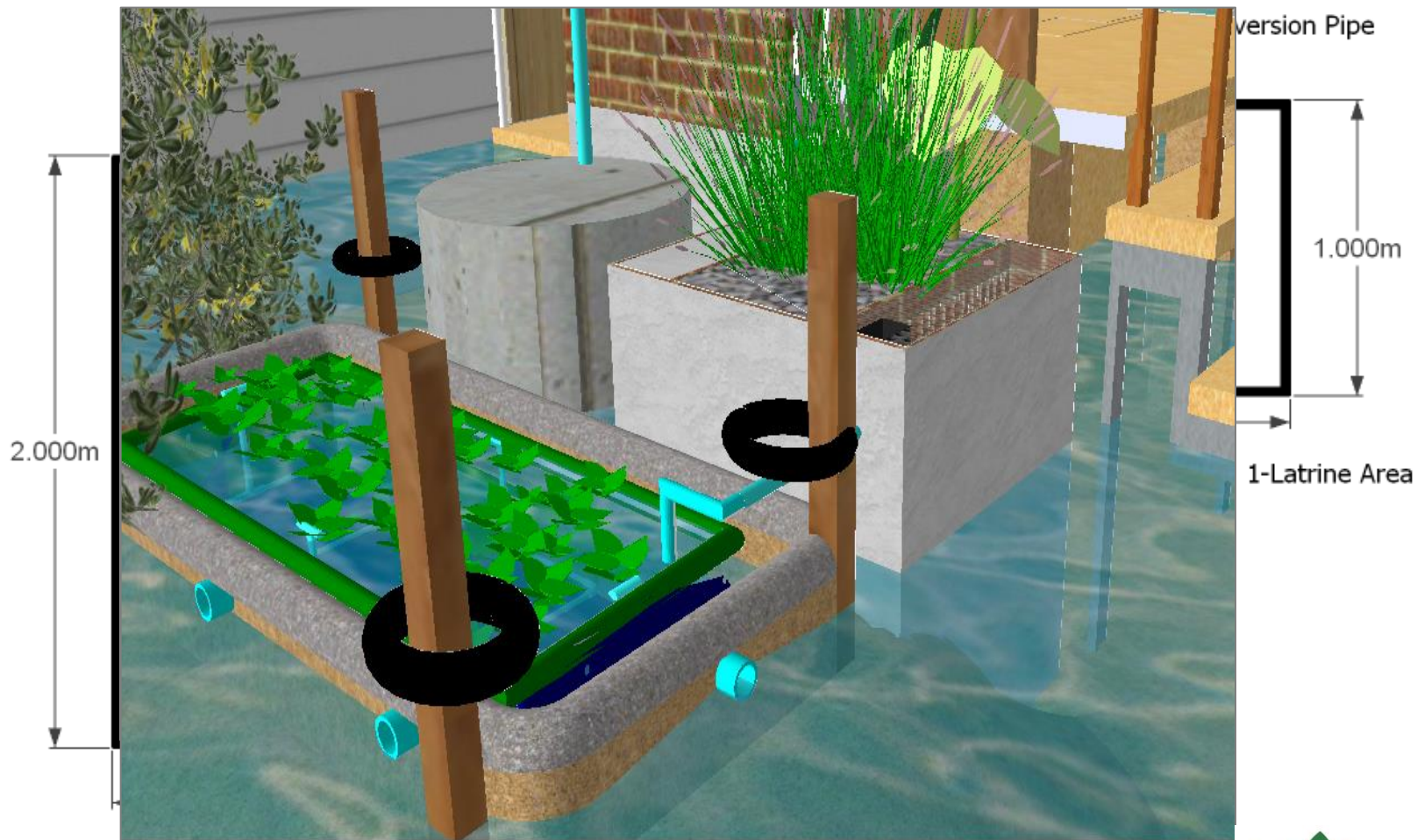


We Need Appropriate Solutions

- Sanitation systems → unsuited for floods
- Septic tanks/pit latrines can contribute to fecal contamination of flood water
- Public health risk created
- A technical solution is needed



Constructed Wetlands System



System in Dry Season



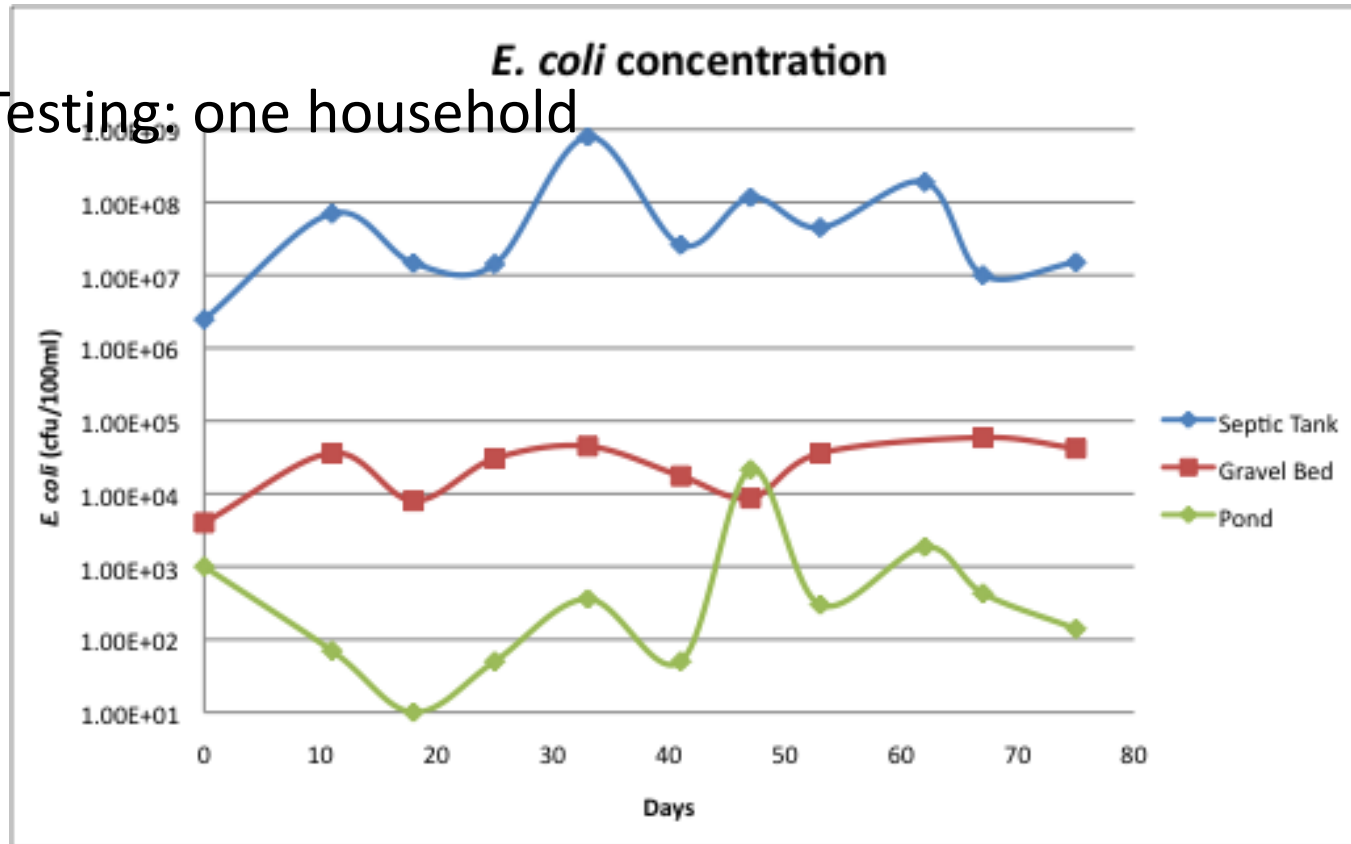
Natural Wastewater Treatment

- Rich array of microorganisms break down waste
- No energy or chemical inputs required
- Small footprint
- Materials easily sourced
- Minimal operational upkeep
- Aesthetic and green



Effective Treatment

- Testing: one household



Median Effluent E. coli/100 mL (CFUs)	Median Reduction (LRVs)
3.00×10^2	5.2



Next Steps

- January 2015: 40 households pilot / product testing
- Human Centered Design: interviews, focus group discussions
- Optimization: design, costs
- Deployment: Cambodia → other countries



Recommendations

- Governments and development partners recognize that flooding (and high groundwater) poses a challenge to sanitation and FSM
- Donor and institutional support for development of products that are suitable to flood-prone environments
- Development partners to help scale appropriate solutions (hopefully this one!)

Thank you

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