Sanitation Credits

A New Financing Model To Scale Investment In Fecal Sludge Management

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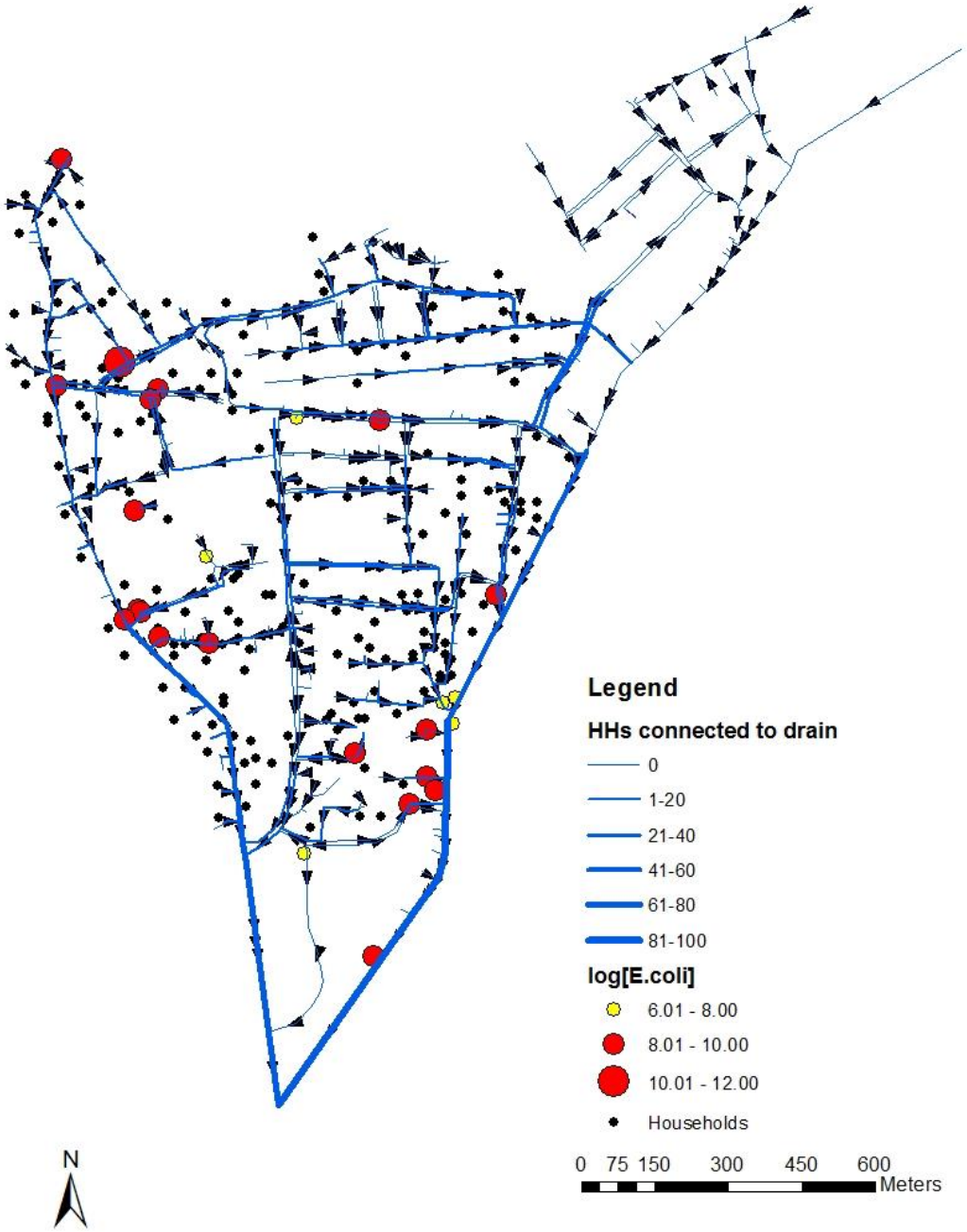
Background

- Market-based approaches to controlling environmental pollution rely on the establishment of **rights** and **pricing**
- Example: carbon
- Public has rights to global climate as a common resource
- Prices for carbon emissions – to account for detriment to the common good – can be established via a market exchange mechanism
- Carbon credits

Rights to pollute

- Principles of rights and pricing can apply in reverse: where polluters own the right to contaminate a common resource, parties who are negatively impacted may pay the polluter compensation to control pollution (Coase 1960)
- You can pay me to not pollute a common resource – what's it worth to you?

Most Used Drains, Drain Contamination Concentrations, and Household Locations in Alajo Neighborhood, Accra, Ghana



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Question

- Do people own the rights to introduce fecal contamination into the environment?
- It's a biological necessity….
- Costs are borne by the public and commons
- Economic impacts of poor sanitation can be (and have been) estimated at local, sub-national, and national levels

Sanitation credits

- Public or private investment to reduce fecal contamination by paying actors to adequately contain / treat waste that otherwise carry a risk of exposure
- Potential mechanism for output-based aid, development impact bonds, and infusing additional capital into the sanitation space

Who would be eligible for credits?

- Individuals
- Groups
- Municipalities
- Government ministries
- Actors who safely manage fecal wastes, including but not limited to **operators of infrastructure, processes, and technologies**

Setting prices

- Option 1. Estimating societal (health + other) costs borne by uncontained fecal wastes on a per-ton basis
- Option 2. Using quantitative risk modeling to estimate the health and resulting economic burden as a result of fecal waste exposures. Costs calculated per volume
- May be locally variable as different locales have different risks and cost burdens of poor sanitation

Option 1: Macro-estimates of economic and social costs

- Use national or international economic analyses of the attributable costs due to poor sanitation
- Derive per capita costs for effectively containing wastes from one person
- Aggregate at village, city, or country level to establish costs

Option 2: Risk-based approach

- Infection risks due to exposure to feces → health risk modeling → Disability Adjusted Life Years (DALYs) estimates → cost-per-DALY sets price
- Various approaches used to set per-DALY prices
- Many assumptions involved
- Focus would be on health burden
- Health burden estimates could also be used in a development impact bond framework

Existing parallels

- Not completely new concept.
- NGOs focusing on ecological sanitation value feces for its future use in fertilizer, and thereby ensure its safe containment, transport, and reuse.
- Local government in Ahmedabad, India (2015) provided small financial incentives to encourage use of public toilets, encouraging “good behaviors.”
- Other examples exist
- Not directly paying for the health costs of sanitation, but show that value can be placed on (the lack of) fecal contamination.

Illustrative pricing for a village

- Assuming an annual loss of USD 54 billion due to poor sanitation, with 700 million people contributing to harmful sludge and 71% of this (i.e., USD 39 billion) being the net health cost, with the remaining being the time cost (simplistic example based on macro-level costs)
- Value of containing all fecal waste in this village = ~USD$54,000
- Same order of magnitude as running a comprehensive fecal sludge removal service for such a village

Potential advantages

- **Catalyzing participation** by a broad range of investors in scaling sanitation, including private, donor, and civil society actors;
- **Increasing flexibility** to support innovative, small-scale, or more sustainable FSM solutions; and,
- **Driving** cost **efficiencies**

Integration with SDGs

- Sanitation credits based on “mass of fecal waste safely managed” could also ***incentivize*** the development of technologies, services, and infrastructure that are effective in meeting the primary sanitation goals
- SDG 6 explicitly names *safely-managed excreta* as the ultimate outcome for properly-managed sanitary services

Potential challenges

- **Determining proper pricing** among stakeholders;
- **Defining the** spatial-temporal **scale** of the impacted resources (i.e., defining the common good and who is impacted across scales); and,
- **Mitigating** the potential for **unintended consequences**, including negatively influencing existing public financing models for FSM

Other challenges

- Creating robust measuring systems since the value-density of waste within such a credit scheme would be much higher than soil, potentially leading to incentives to game the system by FSM system operators and sludge collectors
- Independent verification
- Uncertainty in methods to establish cost burdens for price setting