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Title: Tracking Inequity in Sanitation Systems

Investments in sanitation may be in containment (septic tanks and pits), transport (drains, sewers or trucks), or treatment and disposal/reuse. But for much of the investments being made, human waste is collected and moved around, but the risk of exposure is moved with it, rather than eliminated; much of the waste is less than fully treated or contained. For many sanitation upgrades there will be ‘winners’ and ‘losers’. We are designing a simple visual tool which can track these winners and losers, by mapping out those that have access, receive subsidy and avoid exposure, and comparing their social categorization (by wealth, caste, religion, and gender), with those that have limited or no access, receive little or no subsidy and suffer greater exposure. We hope this tool might be used to track equity in evolving sanitation systems Our case study will survey 4000 households in the city of Hubli-Dharwad, located in north-west Karnataka. The sanitation system is typical for a Tier-II Indian city (those with a population <1 million): household access ranges from none at all (~3%), to flush toilets connected to an underground sewer line (50-70%). This range includes septic tanks and soak pits (20-40%), many of which are not water-tight, making ground water contamination likely. The storm water drainage network, a patchwork of some open and some covered drains found along most streets in residential areas, carries much of the sewage as well, due to direct connections or septic tank outfalls (both illegal). Solid waste often blocks open drains, which flood in the monsoon, sometimes into houses. Much of this nutrient-rich mix of wastewater and storm water is diverted and used in local agricultural fields south of Hubli and Dharwad. Gender differences in access to sanitation may manifest more strongly outside the home, either at work or during travel. Sanitation workers are constantly exposed to risk, and often come from very specific social categories. We hope our tool will capture these inequities, and thereby be useful in other cities inside and outside of India that are still working towards full coverage of safely managed sanitation.