Evidence to action

SaniPath results

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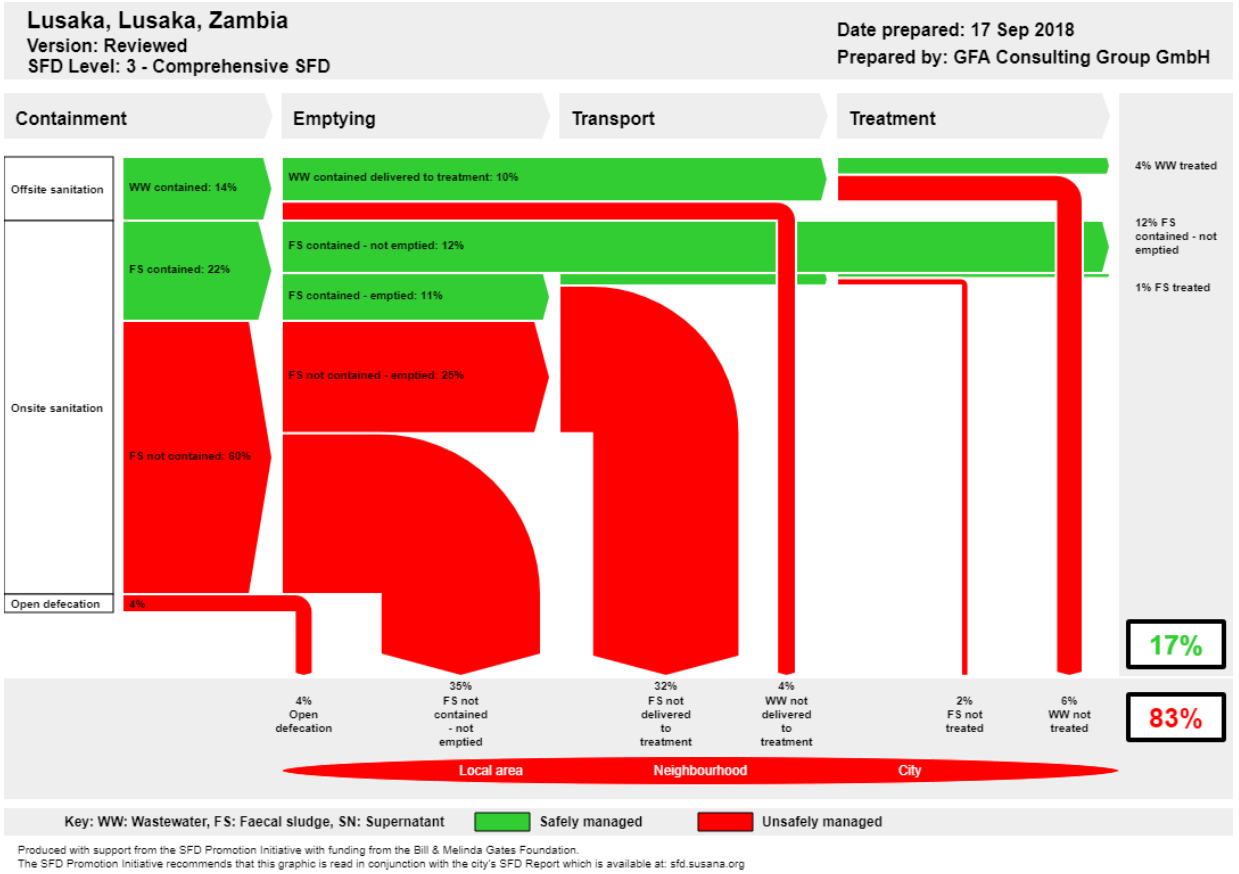
LUSAKA CITY COUNCIL

Presentation outline

- Introduction
- Study Site
- Sanipath process
- Pathways of exposure assessed
- Results
- Lessons learned
- Takeaways

Shit Flow Analyses show that Fecal Sludge is NOT Contained – Reservoirs in Urban Environment



Study Site – Kanyama Compound

- Kanyama is an unplanned, legalized settlement
- Population 169,298 (36,834 households)
- Lies on a highly productive and vulnerable dolomitic karst aquifer
- 4 boreholes that feed 163 individual water points supply water

SaniPath overview

1.Conduct Preliminary Assessment (key informant interviews & transect walks)

2.Determine target neighborhoods, pathways, & sampling sites

3.Preliminary Assessment Report

4 & 5. Behavioral & Environmental Data Collection

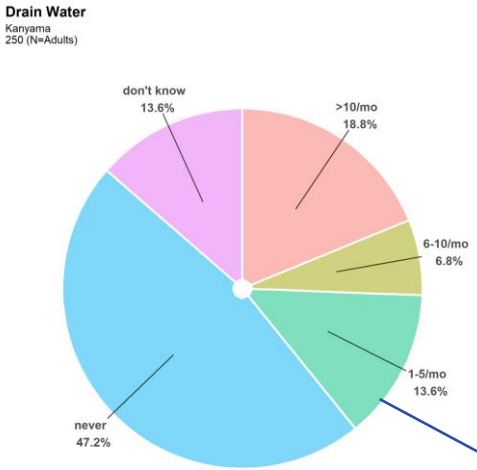
6.Risk Profiles & Summary Statistics

7.Final Report

Sarah Abraham, Martha Ormiston, Gilad Fried, and Juan Pablo Bravo from The Noun Project created the icons interview, neighborhood, water, and computer. Schematic created by Suraja Raj

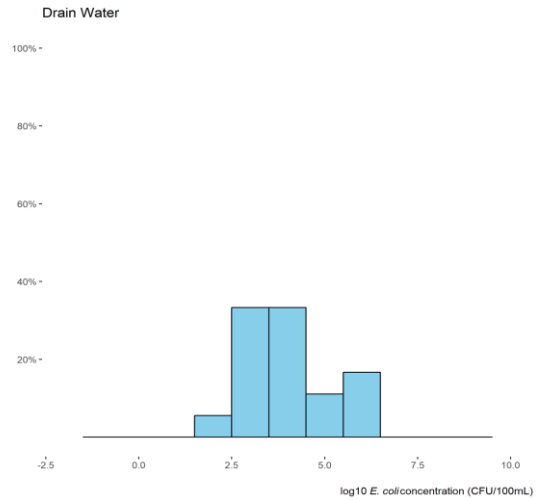
Estimating Exposure to Fecal Contamination

Behavior Frequency



Other parameters: intake volumes, duration of exposure, etc.

Environmental Contamination



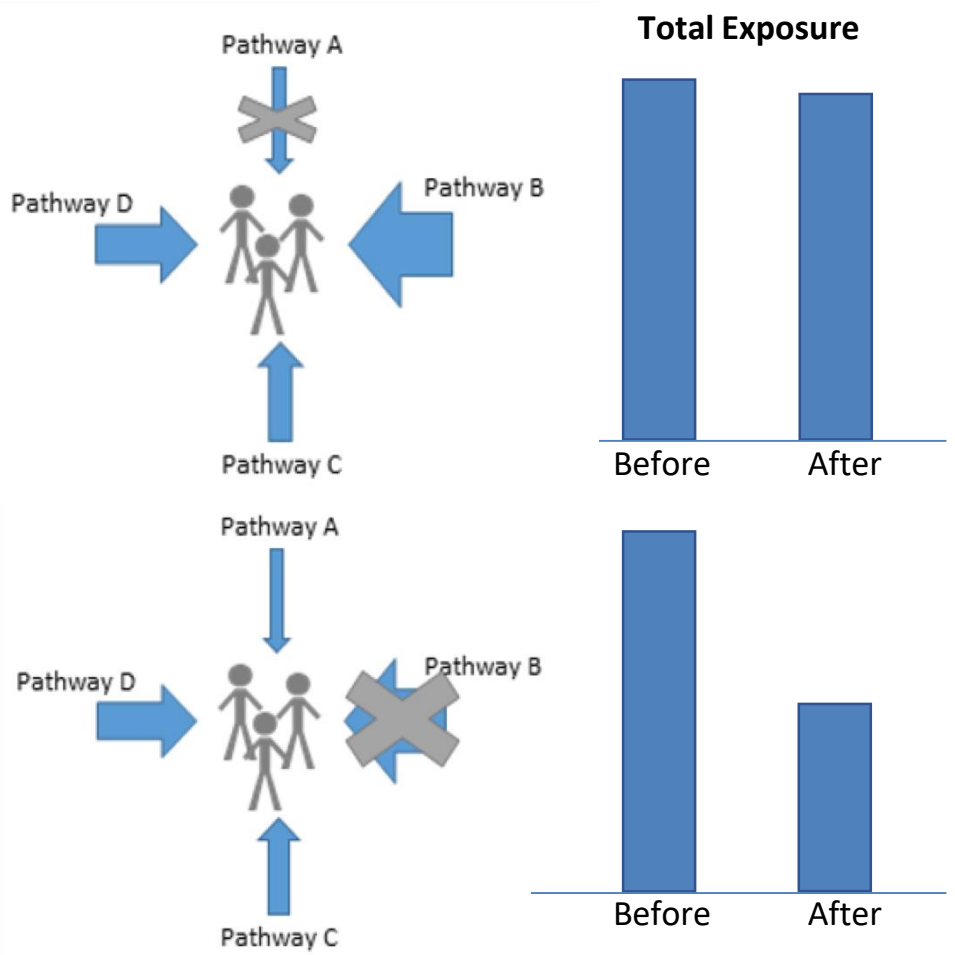
Tool uses Bayesian analysis to estimate the distribution of environmental contamination and frequency of exposure.

The mean dose and proportion of the population exposed are summarized from simulated distributions and displayed in risk profiles.

Results are presented in a normalized and comparable unit – Dose as MPN *E. coli* **ingested** per month

Dominant Pathway(s)

- The pathway(s) that make a great contributio n(s) to the total exposure.
- Effects on exposure when a particular pathway is removed.
- Total exposure changes substantially when a **dominant pathway** is removed.



Pathways of Exposure – SaniPath Lusaka

Municipal Water

Borehole Water

Shallow Well Water

Open Drains

Soil

Street Food

Raw Produce

Public Latrines

Shared Latrines

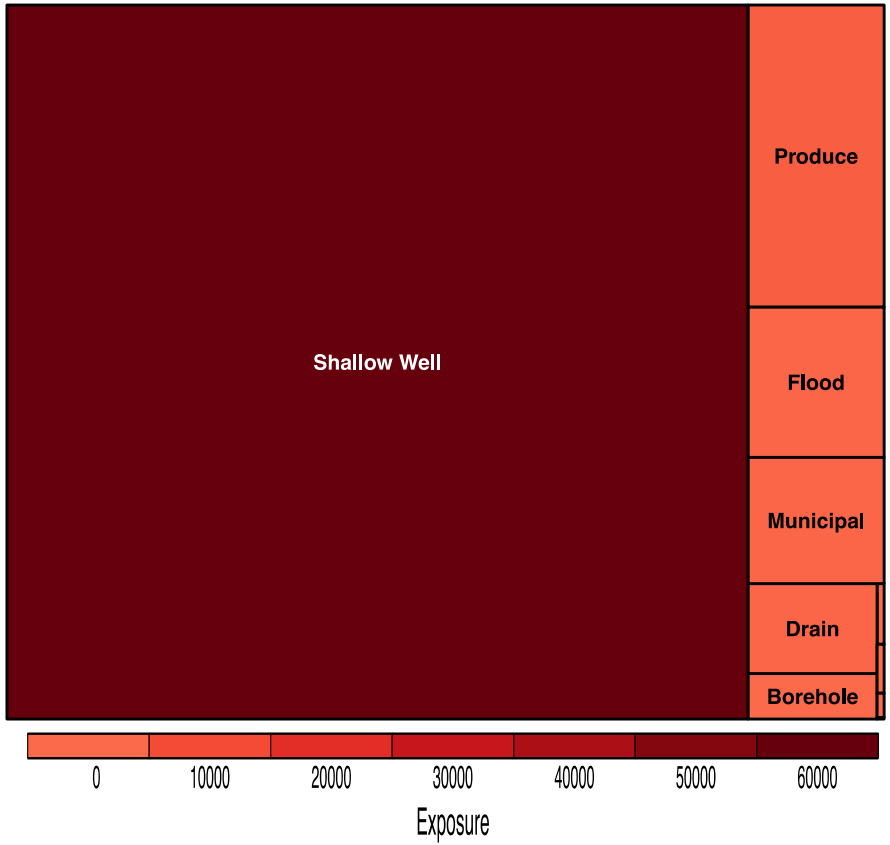
Flood Water

Behavioral Sample Sizes

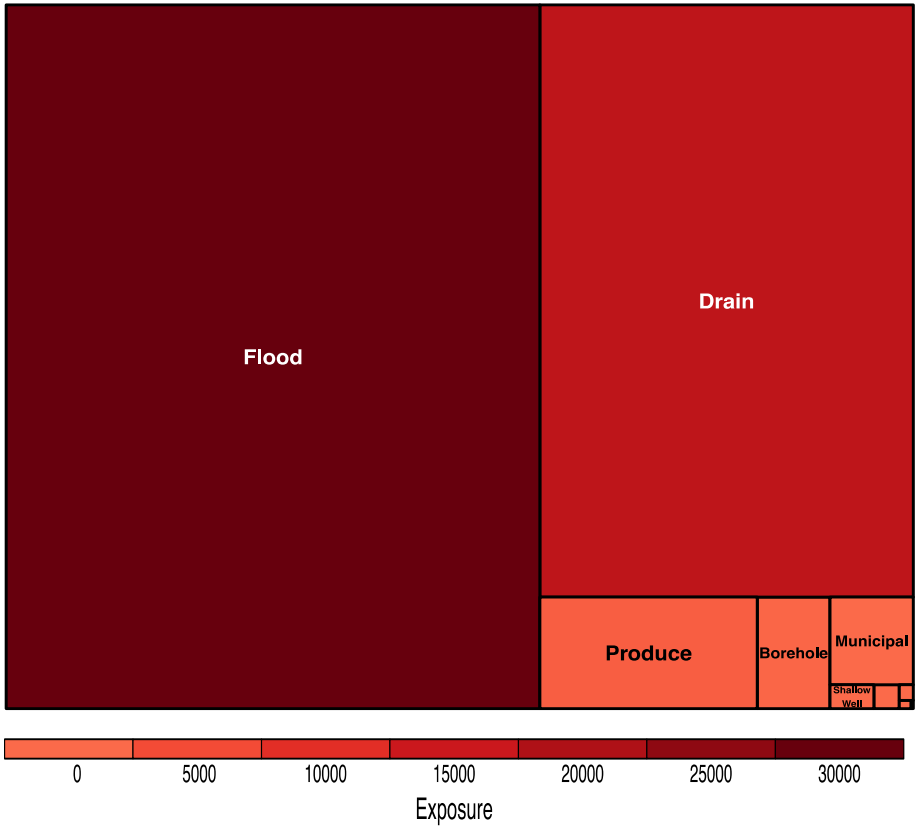
	Household Surveys	Community Surveys	School Surveys
Number of Surveys	100	4	4
Total Number of Participants	100	79	73
Total Surveys	**252**		

Results: Exposure Assessment

Adult Exposure



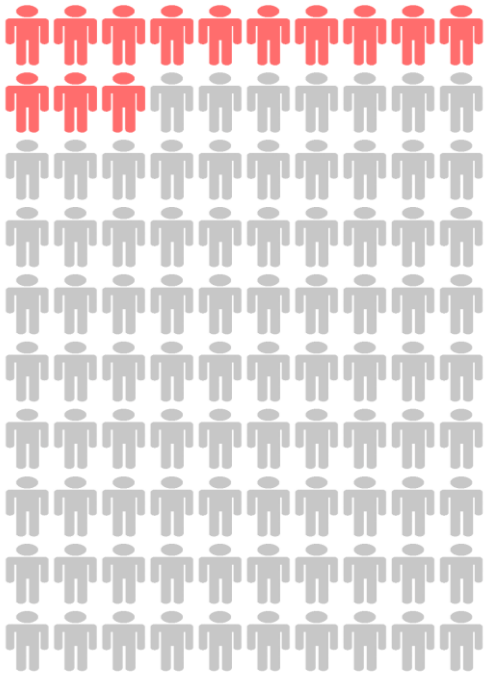
Child Exposure



Action to bury Shallow Wells

Drinking Water, Shallow Well

Kanyama
Adults
12.6% exposed
5.615 MPN/Month *E. coli*

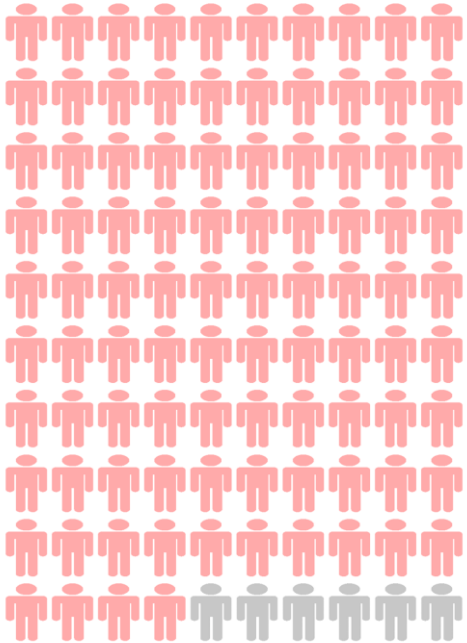


Children:
2.2% exposed, 3.811 MPN/Month *E. coli*

Vulnerability of Municipal Drinking Water

Municipal and Piped Water

Kanyama
Adults
93.9% exposed
3.29 MPN/Month E. coli



Children:
90.2% exposed, 2.798 MPN/Month *E.*

Lessons learned

- Adult dominant pathways vs children dominant pathways
- Shallow wells vs flood water vs open drains
- Sanitation and hygiene in relation to fresh produce
- downstream impacts of poor FSM on wholesome portable water

Takeaways

- Sanipath is a useful tool to provide information for targeted decision making in critical in the Zambian settings
- Alert decision makers of critical areas that are not otherwise considered for interventions.
- Results can be used to influence investment in critical intervention areas
- Impulsive reactions *vs* Informed decisions