

Efficacy of Solar Disinfection (SODIS) in Ugandan
Rural Primary Schools
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Introduction

SODIS: WHO Approved POU-HWT



- Over 780 million people world-wide without access to improved water supply source
- 1.5 million infant and childhood deaths occur annually due to diarrhoeal disease.
- 65% population of rural Uganda with access to an improved water source. 88 % Ugandans live in rural areas.
- 19% access to safe and adequate water in Ugandan rural schools within a 0.5 km distance.
- POU HWTS effective in improving microbial water quality and health outcomes .
- SODIS used in this study.

Aims and Objectives



- Main objective: Introduce SODIS to the community using a school based approach.
- Monitor microbial water quality before and after SODIS treatment.
- Measure SODIS efficacy through assessment of attendance of pupils using diarrhoea and gastro-intestinal complaints as indicators before and after introduction of SODIS treated water in the schools.

Methodology

CLUSTER	Term II (2011)	Term III (2011)	Term I (2012)
1	Treatment	Treatment	Treatment
2	Control	Treatment	Treatment
3	Control	Control	Treatment



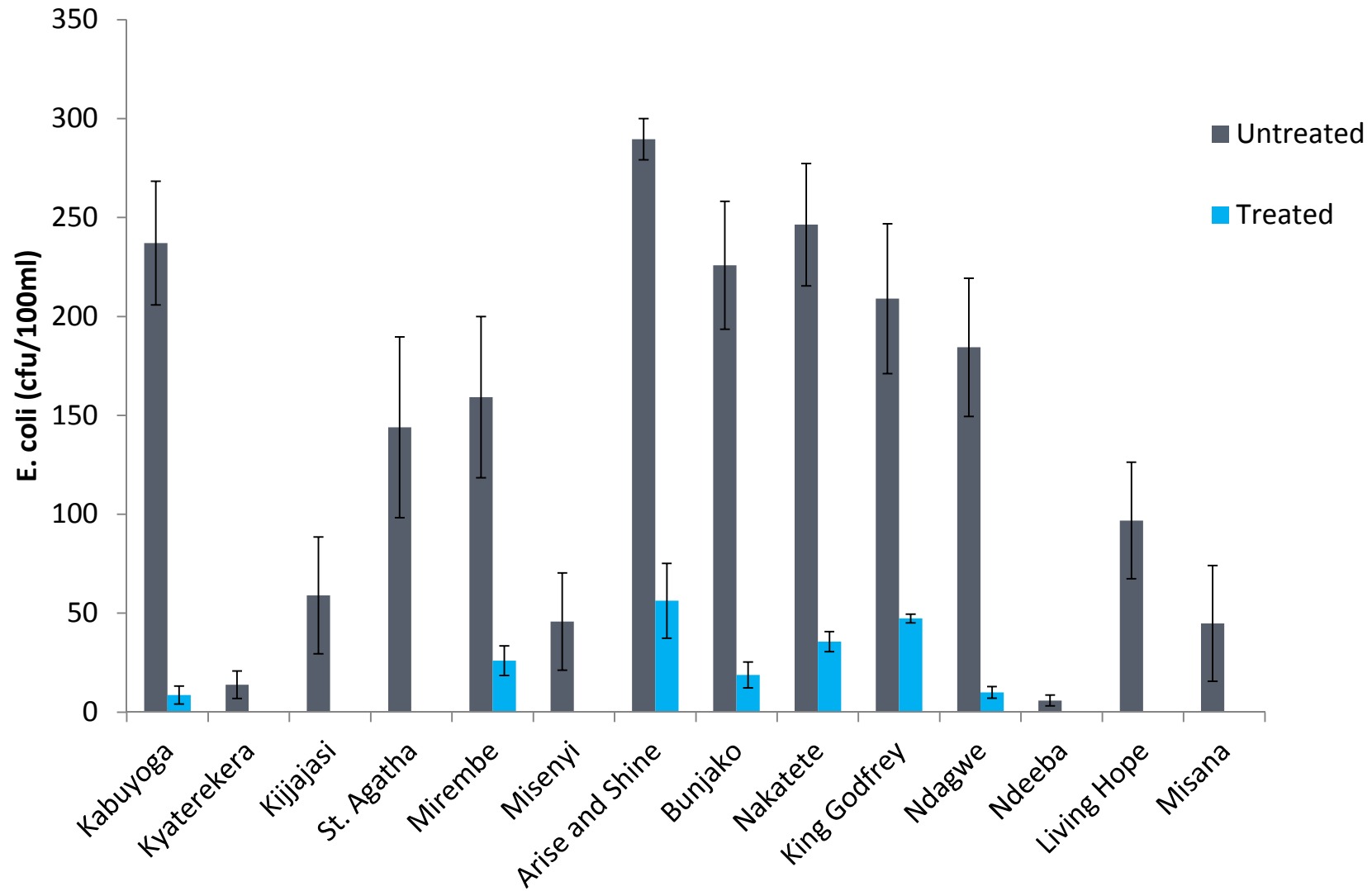
- Cross-sectional survey for baseline data on school location, water source types, water quality and pupil absenteeism rates with causes.
- 50 pupils from each primary school selected to be monitored for attendance before and after SODIS.
- Training of teachers and pupils from the 14 selected schools on SODIS
- PET bottles distributed to pupils on a cluster basis using the stepped wedge study design
- Interview based questionnaire to evaluate pupil dissemination of SODIS into the community

Results



- 700 pupils from 14 primary schools participated in the study.
- 6 Open dug wells, 4 shallow wells, 3 plastic rain water tanks and one borehole
- All raw water microbiologically unfit for human consumption.
- SODIS more effective in RHW & bore holes , shallow wells and least effective in open water holes due to turbidity

Mean *E. coli* contamination of water before and after SODIS treatment



Mean *E. faecalis* contamination of water before and after SODIS treatment

