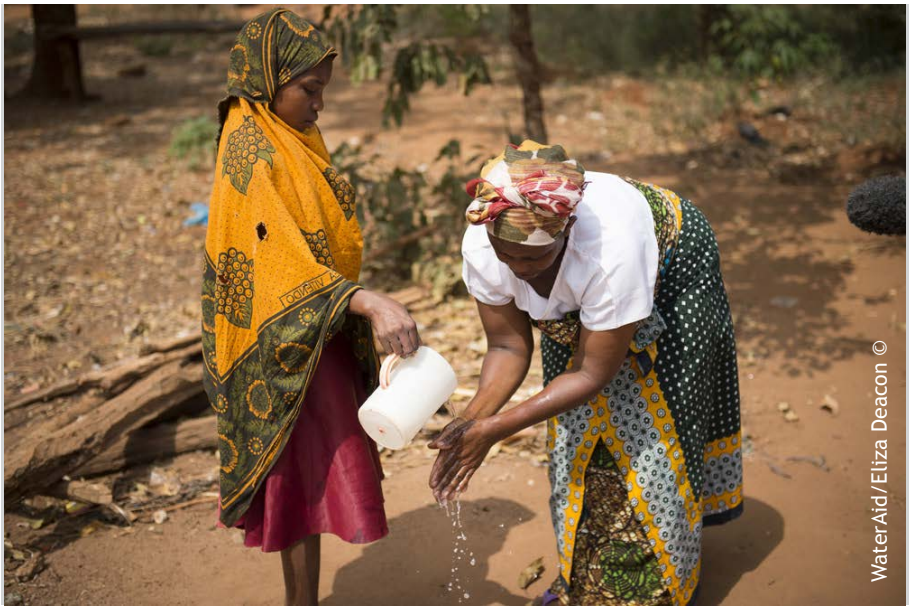
Phase II Research in Tanzania

June 2016

BRIEFING NOTE

Mikono Safi: hand hygiene intervention to optimise helminthic infections control.



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Background

Chronic diarrhoea and helminthic infections, especially soil transmitted helminths (STH), are frequent infections in childhood, and are strongly associated with malnutrition, and poor child and cognitive development.

Common STH infections – ascaris and trichuris – are picked up when people ingest *Ascaris lumbricoides* and *Trichuris trichiura* eggs after they have matured in the environment by eating raw, unwashed vegetables or by not washing their hands after handling contaminated soil.

Both diarrhoea and helminthic infections have a strong association with poor access to water supply, sanitation and hygiene. The exact role of hands in the transmission of eggs is unclear (Fung and

Cairncross, 2009), but a recent study in China found a 50% reduction in the prevalence of ascaris and trichuris due to handwashing with

soap (HWWS) promotion (Bieri, 2013). Furthermore, a pilot study to test a method developed under Phase 1 of SHARE to quantify eggs on hands (Jeandron et al, 2014) found 34% of farmers in Vietnam who used fresh excreta as a fertilizer positive for STH eggs (Gulliver et al, 2014), while a study among school children in rural South Africa found a prevalence of about 20% (Cranston, 2015).

Whilst deworming campaigns offer a cost-effective method for reduction of the burden of STH, an integrated approach that combines sustainable hygiene behaviour change with deworming could prove an effective way to control STH infections.

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Aim and objectives

Aim: Mikono Safi, which means clean hands in Kiswahili, aims to assess the effectiveness of a behaviour intervention, including promotion of HWWS, among school-aged children in the Kagera Region of NW Tanzania in reducing both the prevalence and intensity of *Ascaris lumbricoides* and *Trichuris trichiura* infections.

Objectives:

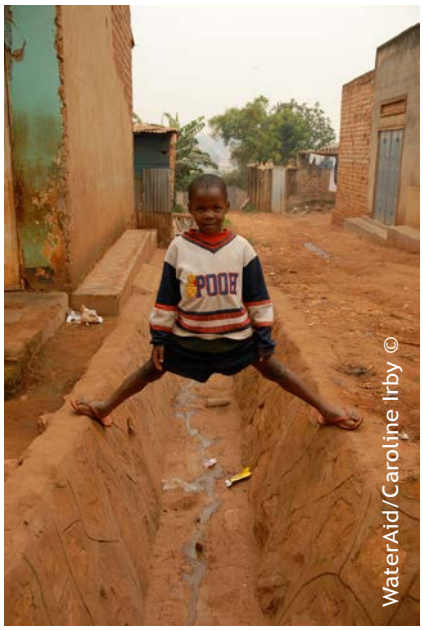
- To design a scalable, school-based behaviour change intervention to promote HWWS at key times during the day among school-aged children in North Western Tanzania;
- To assess the effectiveness of this intervention in changing handwashing-behaviour and in reducing the prevalence and intensity of *Ascaris lumbricoides* and *Trichuris trichiura* infections among school-aged children following a deworming programme;
- To explore the costs and cost-effectiveness of the intervention with a view to the possible integration of the intervention into the national STH control efforts, and prepare the methods for a future large cost-effectiveness study of the intervention when integrated into the national STH control programme.

Project overview

Stage 1: Intervention Design
The proposed behaviour change intervention will be designed using tried and tested methods to increase hand-washing with soap. This intervention will be adapted to the cultural context of Tanzania. Implementation will be primarily school-based, but will involve children's parents and guardians.

Stage 2: Pilot and Evaluation
A cluster-randomised controlled trial will be used to test the efficacy of the intervention in the Kagera Region of North-Western Tanzania. Primary schools will be the unit of randomisation, with seven receiving the intervention and seven acting as a control. The primary outcome of interest will be the prevalence of infection

with *ascaridiasis* and *trichuriasis* following deworming in both the intervention and control schools. Secondary outcomes will include: self-reported hand-washing behaviour (both at home and in schools), the prevalence of worm eggs retrieved from hands in a subgroup of pupils, and the prevalence of hookworm infection. Before the trial is implemented, formative research will be carried out to define and adapt the intervention package, and assess its feasibility.



Relevance and uptake

The prevalence of STH among school children in the Kagera region has been estimated to exceed 25% in most places (Brooker et al, 2009). This planned study will address this issue using an integrated approach that not only provides a curative response but also puts handwashing, as a key preventative measure, in place.

If the intervention is shown to be efficacious, the ambition is that health and education authorities will roll it out in other schools in North-West Tanzania. Should this happen, a similar school based intervention could be used to determine the effectiveness of the intervention when integrated into the MoHSW's National Deworming Campaign and delivered under 'real life' implementation conditions. The aim of this future work would be to substantially increase the value for money of deworming campaigns in Tanzania, by reducing reinfection rates of STH through improved hand hygiene. The protocol for this subsequent trial will be an output from the present study.

Find out more

Listen to the reflections of Dr Saidi Kapiga of MITU, co-Principal Investigator on this project: https://youtu.be/3_Imq9xerHo

Sign up to the SHARE newsletter to keep up-to-date with this and other interesting projects: http://bit.ly/1GrEEi8

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Contributors

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