



# Design of a Simple Pedal Handwashing Device

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## Introduction

Diarrhoea is the most serious public health problem related to sanitation in Tanzania, causing thousands of deaths among children every year. Handwashing with soap is an important preventive health behaviour, and yet promoting this behaviour has proven challenging. WSP Global Scaling-up Handwashing Project has identified the importance linking handwashing technology and behaviour change. In this study, handwashing facility named “Pedal handwashing device” was developed and successfully tested in different user environments, a device meant to be simple and of low cost. It works on a foot pressing mechanism and integrates the usage of soaps using the same mechanism. Aim of this study was to examine impact of handwashing hygiene and how this device can contribute in behaviour change based on FOAM framework.

## Method

The study is based on primary data collected by the team, which involve the use of questionnaires, interview and survey and observation of existing handwashing station/devices in some of public places within the area of study.

Assessment of handwashing facilities in schools

Questionnaires were given to 5 schools within the area of study in order to determine the availability of handwashing facilities in the studied schools. Furthermore the study involve identification of common diseases reported by students carried out using the sick report provided by teachers (matrons/patrons) from the respective schools, also the study carried out on the same subject to determine number of people infected by diseases related to handwashing hygiene within the area for the previous year, data was obtained from “Somanda Referral Hospital”

Examining impact of handwashing technology and behaviour change

Phase 1: We conducted an interview with other two studied groups (restaurants and public toilets operators), whereby respondents were randomly selected. The aim was to determine how handwashing facility or device relates to handwashing behaviour and how they can affect one another.

Phase 2: Survey on suitability of simple handwashing devices such as the Tippy tap revealed that users prefer such simple devices for a number of reasons. However, the sustainability of operation of handwashing facilities is critical if intended benefits of handwashing are to be achieved over the longer term. At this stage we designed and fabricate the pedal handwashing device as an improved version of Tippy tap (Kibuyu Chirizi) and conduct series of experiments and tests in comparison to the existing handwashing devices.

## Results

All collected data was compiled, analysed, summarized and presented in graphs and charts with the aid of MS Excel and the results were as follows;

According to Ministry of Education, Science and Technology all schools should have at least one functional hand-washing point for every 100 pupils but none of the schools in our study meets the demand, during study we found out 5/8 schools have no handwashing facilities, 7/8 schools have insufficient/no water for handwashing facilities and none of schools have soap available for handwashing practice.

When asked during the interview about handwashing, a majority of people including students said they didn’t wash their hands after using the toilets; some reasons given include non- availability of handwashing facilities and others said that it was not important, which for some reasons reflects the data on table 2. Studies even suggest that handwashing with soap can reduce school absenteeism for about 40%

## Conclusion

In a study, assessing handwashing station design we found that physical characteristics of the handwashing station, including tap design, soap presentation, influenced acceptability and use and on top of that also ease of use can influence technology preference and behaviour change. Schools are a key setting for the development of effective handwashing promotion programs we encourage policy maker and event organizer to follow FOAM work frame in order to initiate handwashing campaign with much impact.

During the study we encounter a major challenge which was the inclusion of disabled people, still there is a gap between WASH facilities and people with disability but it’s our hope we’re going to figure out how to narrow it since we took it as a challenge on our work.

## References

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Overview on Handwashing facilities and Water supply in schools around Bariadi

| Categorization               |                 | No. of Schools |
|------------------------------|-----------------|----------------|
| <b>GENERAL INFORMATION</b>   |                 |                |
| Type of schools              | Primary         | 4              |
|                              | Secondary       | 4              |
| <b>WATER SOURCE</b>          |                 |                |
| Type of source               | Tape            | 1              |
|                              | Well            | 3              |
|                              | Rain harvest    | 4              |
|                              | Others/None     | 0              |
| Location                     | In campus       | 5              |
|                              | Off campus      | 3              |
| Functionality                | Functional      | 5              |
|                              | Non-functional  | 3              |
| <b>HANDWASHING FACILITY</b>  |                 |                |
| Type of Handwashing facility | Stand pipe      | 2              |
|                              | Wash basin      | 1              |
|                              | Fixed container | 0              |
|                              | None            | 5              |
| Water for hand washing       | Enough          | 1              |
|                              | Not enough      | 3              |
|                              | Not available   | 4              |
| Soap availability            | Yes             | 0              |
|                              | No              | 8              |

