

Are your hands clean enough?

Study Findings on Handwashing With Soap Behaviour in Kenya



REPUBLIC OF KENYA



Are your hands clean enough?

Study Findings on Handwashing With Soap Behaviour in Kenya

TABLE OF CONTENTS

FOREWORD	
EXECUTIVE SUMMARY	
List of Boxes, Figures, and Tables	4 - 5
Acronyms and Abbreviations	6
SECTION ONE: INTRODUCTION	14
1.1 Research Background	14
1.2 Justification of Research	14
1.3 Objectives of the Research	14
1.4 Methodology	14
1.5 Field Challenges	15
1.6 Project Learning	15
1.7 Report Structure	15
2.0 Background Information	16
2.1 Background on Kenya	16
2.2 Under-Five Mortality and Incidences of Diarrhea Cases	16
2.3 Kenyan Soap Market	17
SECTION TWO: COMMUNITY STUDY	18
3.0 Methods Used in the Community Study	18
4.0 Results	20
4.1 Baseline on Handwashing	20
4.2 Procedures of Washing Hands	24
4.3 Perception of Important Junctures of Handwashing with Soap	25
4.4 Sanitation Environment in Community	25
4.5 Background of Respondents	27
4.6 Knowledge and Attitudes towards Handwashing	28
4.7 Motivators and Barriers to Handwashing with Soap ('Why?')	30
4.8 Barriers to Handwashing	37
4.9 Communicating with the Community	40
SECTION THREE: THE SCHOOLS' STUDY	42
5.0 Sanitation and Hygiene in Kenyan Schools	42
5.1 Background	42
5.2 Handwashing Initiatives in Schools	42
5.3 Justification of the School Study	43
5.4 Objectives of the School Study	43
6.0 Methods Used in the School Study	45
6.1. Overview of Methods	45
6.2 Selection and Description of Schools for Study	45
7.0 RESULTS	46
7.1 Baseline Behavior of Children in School	46
7.2 Handwashing in the Community versus Schools	46
7.3 Effect of Placing Soap in Schools	46

7.4	Knowledge, Perception, and Attitude towards Hygiene and HWWS	48
7.5	Motivators for Children Washing Hands	49
7.6	Barriers to Handwashing with Soap in Schools	51
7.7.	Communication with Children	53

SECTION FOUR: CONCLUSIONS AND RECOMMENDATIONS **58**

8.1	Conclusions	58
8.2	Recommendations	59
Appendix A:	Background Information on Schools in the Study	60
Appendix B:	Physical Observations of Hygiene Standards	61
References		62

List of Boxes

Box 4.1:	Nurture and Handwashing	31
Box 4.2:	Comfort and Handwashing	32
Box 4.3:	Disgust and Handwashing	33
Box 4.4:	Fitting in and Handwashing	34
Box 4.5:	Status and Handwashing	35
Box 4.6:	Purity and Handwashing	35
Box 4.7:	Attraction and Handwashing	36

List of Figures

Figure 4.1:	Proportion of Households that Experienced Water Shortage in the last One Year	26
Figure 7.1:	Handwashing Before and After Placing Soap	47

List of Tables

Table 2.1:	Population and Poverty Incidences across the Study Provinces	16
Table 2.2:	Main Soap Brands in the Market and Pricing	17
Table 3.1:	Summary of Study Methods	18
Table 3.2:	Summary of Junctures and Persons Observed	19
Table 4.1:	Consistent Handwashing	21
Table 4.2:	Any Handwashing by Primary and Secondary Caregivers across Regions	22
Table 4.3:	Handwashing with or without Soap Based on Events Observed across Regions	23
Table 4.4:	Handwashing with or without Soap Based on Events Observed across Junctures	22
Table 4.5:	Handwashing with and without Soap by Primary Child Caregiver in Uganda	24
Table 4.6:	Handwashing with Soap by Primary Caregivers Based on Events Observed across Junctures and Region	24
Table 4.7:	“What Do You Think are the Key Times When You Must WHWS?”	25
Table 4.8:	Toilet Facilities at the Household Level	26
Table 4.9:	Main Sources of Water	26
Table 4.10:	Demographic Characteristics	27
Table 4.11:	Summary of Mothers’ Aspirations	28

Table 4.12:	Summary of Barriers and Biggest Fears to Realization of Dreams	29
Table 4.13:	Motivating Factors	30
Table 4.14:	Individual Rankings of Handwashing Motivations by Female Focus Group Discussion Participants	30
Table 4.15:	Access to Water and Cleansing Agents	38
Table 4.16:	Communication Channels	40
Table 6.1:	School-Based Study Methods	45
Table 7.1:	Handwashing Behavior in Schools Before Placing the Soap	46
Table 7.2:	Handwashing After Defecation in the Community and School Environment	46
Table 7.3:	Children's Views on Practising Handwashing with Soap (by District)	49
Table 7.4:	Children's Dislikes on Practising Handwashing with Soap (by District)	51
Table 7.5:	Children's Role Models	54
Table 7.6:	Perception of 'Cool'	55
Table 7.7:	Summary of Social Mapping	56

ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immuno-Deficiency Syndrome
ARI	Acute Respiratory Infections
AMREF	African Medical Research Foundation
BT	Behavior Trails
CARE	Cooperative for American Relief Everywhere
CBO	Community-Based Organization
CBS	Central Bureau of Statistics
FGD	Focus Group Discussions
FPE	Free Primary Education
GTZ	German Technical Cooperation
HIV	Human Immunodeficiency Virus
HW	Hand Washing
HWWS or WHWS	Handwashing with Soap
IDI	In-Depth Interviews
IMR	Infant Mortality Rate
LC	Local Council
Leaky Tins	Improvised handwashing facilities made from a jerrycan. A stick is inserted into a hole; the stick is removed while washing hands and replaced to block the water from spilling out
MoE	Ministry of Education
NETWAS	Network for Water and Sanitation
NGO	Non-Governmental Organization
SES	Social Economic Status
TV	Television
UNICEF	United Nation Children's Fund
WHO	World Health Organization

ACKNOWLEDGEMENTS

The Handwashing with Soap Baseline and Consumer study was commissioned by Water and Sanitation Program on behalf of Ministry of Public Health and Sanitation.

We would like to acknowledge input and efforts by organizations and individuals who immensely contributed to the study at different stages leading to the production of this report. Water and Sanitation Program through Jason Cardosi, Japheth Mbuvi and Rufus Eshuchi coordinated and managed the research process implemented by Steadman Kenya Ltd.

We thank Mr. Kepha Ombacho and Mr. John Kariuki from Ministry of Public Health and Sanitation for their guidance and support throughout the process, Ms. Margaret Ndanyi from Ministry of Education and Ms. Rose Ngure from Ministry of Water and Irrigation for participating and guiding the preparatory process. Val Curtis and Robert Auger from London School of Hygiene and Tropical Medicine (LSHTM) and Myriam Sidibe from Unilever Lifebuoy team who provided technical assistance to the research agency.

Others who peer reviewed the report were WSPs Sanitation and Hygiene team in East Africa composed of Patrick Mwangi, Abdulrazak Badru, Chris Nsubuga-Mugga, Ousseynou Diop, Yolande Coombes, Toni Sittoni, as well as UNICEF team composed of Suleiman Malik, Jane Kariuki, Fred Donde and Tobias Omufwoko.

FOREWORD

The National Environmental Sanitation and Hygiene Policy aims to create an enabling environment in which all Kenyans can improve hygienic behaviors and environmental sanitation. One among behavioral changes targeted is the practice of handwashing with soap, which is considered a better option for disease prevention as a hygiene intervention. Washing hands with soap - at the right times - can cut diarrhea risk by half, and respiratory tract infection by a third – these are two of the largest killers of children under five year olds in Kenya.

However as demonstrated in this study, handwashing with soap is rarely practiced regularly and at the right times, such as before eating or after visiting the latrine. There are many reasons for this, including lack of knowledge on when to wash hands, and limited opportunities to do so. In this study, the findings are, while soap is available in 97 percent of households, soap for washing hands is uncommon in schools. The only attribute to this is that in Kenya, like elsewhere around the world, individuals are simply not motivated to regularly wash hands with soap. .

To address this situation, several public and private sector organizations have joined the Ministry of Public Health and Sanitation to combine state-of the art marketing techniques with public health approaches and institutional structures in order to improve and sustain good handwashing behavior. The results of this study serve as a baseline for these efforts.

This report provides an opportunity to restate the importance of handwashing with soap promotion and calls on stakeholders to renew and broaden their support for the same. It is in this spirit that I believe we can make a difference and meet our targets for reductions in child mortality while working together.

On behalf of the Ministry of Public Health and Sanitation, I am grateful for the support from the Water and Sanitation Program –Africa (WSP-Africa) who commissioned this research, Steadman Research (K) Ltd who carried out the study, and the London School of Hygiene and Tropical Medicine and the Unilever Marketing Academy for their technical inputs. I am also grateful to the Ministry of Education, Ministry of Water and Irrigation, UNICEF, WHO, NETWAS, Plan International, for their helpful contributions. Last but not least we acknowledge the role played by respondents in the community as well as schools. You sacrificed your time to participate in various activities that contributed immensely to the success of this study.



Mark Bor, EBS
Permanent Secretary
Ministry of Public Health and Sanitation

Executive Summary

Washing hands with soap at the right times can reduce instances of diarrhea by 35–50 percent. Evidence also suggests that handwashing with soap can reduce acute respiratory infections (ARIs) by 30 percent.¹ Past initiatives in Kenya have focused on raising awareness of handwashing with soap but they have not fully translated into behavior. An in-depth understanding of motivators and barriers to handwashing at a national level is critical for a behavioral change campaign. This study has been designed to provide baseline information on handwashing behavior in detail, by looking at behavior practised with regard to handwashing with soap; factors that influence handwashing behavior in schools and in the community's context. The study also provides information on preferred and trusted channels of communication.

Methods

The research utilized both qualitative and quantitative methods of data collection. It was executed at two levels—community and schools.

1. Community: It sought to understand handwashing behavior, barriers, and motivators in a community setting. The community methods included:

- a. Structured observations:** These involved observing handwashing behavior with or without soap during two key junctures—after contact with feces, and before handling food or eating in households. This was carried out in eight districts and covered 802 households. A total of 5,096 observations were achieved.
- b. Household interviews:** These were carried out with primary caregivers in households where the observations took place. The objective of the household survey was getting the views of the community members on hygiene practises, sources of information and communication channels, and cost of soap or handwashing agents, as well as gathering demographic data of the study respondents.
- c. Behavioral trials (BT):** This involved introducing caregivers of children under five years of age to the behavior of handwashing with soap (HWWS), and later assessing their experiences. A total of 36 trials were achieved.
- d. Focus group discussions (FGD):** These focused on motivators for, and barriers against, handwashing with soap at key junctures and were carried out with both male and female caregivers of children under five years. Eight FGDs were conducted in eight districts.
- e. In-depth interviews:** These were conducted with influential people in the communities of the study; 36 in-depth interviews were carried out in eight districts.

2. School: The school setting targeted children in primary school. This approach sought to understand handwashing behavior in school. Previous research in Uganda and Tanzania laid a lot of emphasis on community. The study was conducted in 11 schools. The methods used included:

- a. Structured observations before and after soap placement:** This involved observing handwashing behavior after using the toilet.
- b. Focus group discussions:** FGDs were held with children to understand their way of life, perception of dirt, and attitudes towards handwashing.
- c. Behavior trials:** BTs exposed pupils to handwashing with soap within the school context and later assessed their experience. This was aimed at understanding how easy it is to adopt such behavior, and establishing the barriers that were in the way of such behavior adoption in the school context.
- d. Drawing:** This involved using drawings to identify perceived risky handwashing behavior among pupils in school.
- e. Social mapping:** This required mapping the children's social networks.
- f. Money game:** This was intended to identify what is of value and interest to the children. It involved giving the children a photocopy of a currency note and asking them what they would use it for.
- g. Diary:** This was intended to get an overview of a child's typical day.

¹Hutley, et al. 1997.

h. Teacher focus group discussions and in-depth interviews: These meant assessing the teachers' opinions on the campaign.

Qualitative data were analyzed using interpretative analysis through inductive and deductive logic. In addition, quantitative data were analyzed through SPSS² analysis package using descriptive statistics. Data have been presented in charts and tables.

RESULTS

Current Handwashing Practises

Kenyans have a strong culture of washing their face first thing in the morning. Defecation was found to be the first action after waking up. Therefore, handwashing after going to the toilet may have been driven more by the need to wash the face than the hands. Handwashing behavior was, therefore, looked into from the aspects of: a consistent behavior; any handwashing, and based on number of events observed.

- Fourteen percent of primary caregivers consistently washed hands at any risky juncture but only 5 percent consistently used soap at all the risky junctures.

Handwashing culture is relatively higher in Mombasa and Nyeri (13 percent and 12 percent consistent handwashing with soap) while other regions recorded 1–2 percent, except Machakos which recorded 4 percent. Unlike other regions, Nyeri had good access to water round the year. Mombasa is predominantly Muslim; hence religion may be a strong driver of handwashing.

Based on the events observed, caregivers are more likely to wash hands with soap when in contact with stool than when handling food.

- After suspected self defecation, 31 percent washed hands with soap.
- After other contact with stool, 37 percent washed hands with soap.
- After cleaning a child's bottom, 36 percent washed hands with soap.
- Before serving or handling food. 15 percent washed hands with soap.
- Before feeding or serving index child,³ 11 percent washed hands with soap.

Caregivers in Kenya are familiar with the concept of handwashing as indicated by any handwashing. Any handwashing in this study is defined as 'washing hands at least once at any risky juncture'. Primary caregivers recorded handwashing with or without soap at 92 percent, and handwashing with soap at 60 percent. Secondary caregivers recorded any handwashing with or without soap at 65 percent and 16 percent with soap. The importance of handwashing was emphasized by 94 percent of caregivers who believe that their family can be healthier if they washed their hands with soap.

Handwashing with soap in school is almost nonexistent—only 1 percent washed hands with soap and 28 percent washed hands in some way. Children are more likely to wash hands at home compared to school. Twenty-three percent of 515 defecation events observed at the community level washed their hands with soap. Out of the 635 events observed among school children at the household level before they ate, 56 percent washed hands but only 18 percent used soap.

Handwashing with soap takes low priority at the household level. It is ranked fourth after bathing; laundry and washing dishes are higher priority. Bar soaps have high usage in Kenyan households because of their multiple applications. Overall, 97 percent of the households have accessibility to soap. Women are the key decisionmakers on soap usage at the household level.

The concept of handwashing at both the community and school level is not separable from the concept of hygiene.

Awareness about the importance of handwashing with soap is high, especially after using the toilet. But awareness regarding the relationship between handwashing with soap and diseases, and how this affects the day-to-day lives of children and the entire community, is weak.

²SPSS (originally, Statistical Package for the Social Sciences) is among the most widely used programs for statistical analysis in social science. In addition to statistical analysis, data management (case selection, file reshaping, creating derived data) and data documentation (a metadata dictionary is stored with the data) are features of the base software.

³Index child: Child under five years old on which household selection criteria was based.

Motivators for Handwashing

At the community level, three motivators for handwashing emerged from this study: disgust, comfort and nurture.

- **Disgust:** The strongest motivator where there is strong smell and physical dirt. It is a strong motivator after using the toilet and when in contact with stool.
- **Nurture:** A strong emotional motivator to protect children from illness and see them grow to achieve the dreams parents have for them. Nurture is an effective motivator at junctures that relate to the child, for instance, feeding them or cleaning their bottom.
- **Comfort:** A motivator that gives a mother the flexibility and freedom to continue with her activities.

The motivators of handwashing in a school context were:

- **Justification:** Need to wash away germs that cause disease. This was drawn from the fact that handwashing is covered in the syllabus.
- **Fun:** Handwashing with soap was found to be fun and provided a form of play for the children. This is not a sustainable motivator in the long run but can work at the initial stages of the campaign.
- **Fitting in:** Washing hands after using the toilet is the accepted code of conduct in school. The presence of other children washing hands acted as a trigger to handwashing.

Facilitators of Handwashing

- Convenient access to soap and water came out strongly as a facilitator at both the community and school level.
- The role of teachers as a role model and reminder of the importance of washing hands facilitated the adoption of the behavior. Active participation by teachers in the campaign will be critical to adoption and sustainability of the behavior in schools. The reluctance of teachers to support health clubs in school has reduced the effectiveness of such clubs in promoting hygiene.
- Perfumed soap was a facilitator in schools.

Barriers to Handwashing

Barriers at the community level include:

- Lack of soap for handwashing. In poor households, the soap is reserved for high priority usage: laundry, washing dishes, and bathing. Further, poverty minimizes the perceived risk of not washing hands with soap, where the mother has knowledge. Caregivers have many other issues they have to deal with in their lives. This reduces weight given to risks of not washing hands with soap as other issues take priority in her mind.
- Poor placement of the soap. Most households keep the soap in places not convenient for handwashing after risky events. Preferred soap locations in rural areas include placing on a shelf in the kitchen or on top of a kitchen cupboard. In urban households, people living in single or two room houses keep soap under the furniture or behind the door. Therefore, soap fails to trigger handwashing behavior.
- Lack of a designated place for handwashing in the community. Most communities lack a specific place for washing hands.
- Distance between the toilet and source of water is far in most households. This leads to forgetfulness about washing hands after the toilet is finished.
- Perfumed soap. Some primary caregivers feel that the perfume of the soap will affect the taste of the food they handle.

Barriers at the school level include:

- Placement of the handwashing facilities. The facilities are either very far from the toilets or located in the opposite direction. Children forget to wash hands after the toilet or find it inconvenient to walk to the handwashing facilities.
- Level of handwashing facilities. Handwashing facilities in most schools are too high to reach, especially for children in the lower primary classes.

- Overcrowding at the handwashing facilities. There are limited handwashing facilities to cater for the school population leading to pushing around the facilities. This is a barrier for pupils in lower primary classes and for girls.
- Soap disappearance and wastage. Schools that had tried this initiative raised this as the greatest challenge that the initiative faced.
- Poor or lack of water drainage of handwashing facilities. This led to accumulation of dirty water in the trough and spilling around the handwashing site. As a result, the handwashing facilities become muddy and discourage children from washing hands. Bars of soaps fall into the muddy water or disappear in the trough.
- Lack of support from teachers. In some schools such an intervention is perceived as an additional workload for teachers who feel they are already overworked. After the introduction of free primary education, the workload for teachers increased drastically. Any additional tasks are likely to face resistance from teachers.

Current Channels of Communication

Overall, radio is the most commonly used and accessible source of information. Television (TV) accessibility is limited to urban areas. Health centers and community health workers are the most trusted channel of communication on issues to do with hygiene or health. Places of worship, market days, and informal women's group meetings are prime areas to capture the mothers' attention.

Access to media for children in rural areas is often limited to radio programs. Urban kids have greater access to TV. But children's exposure to any communication through radio and TV is limited to weekends and holidays. Teachers are the most trusted channels of communication in the school context.

Conclusions

- Handwashing behavior with only water is practiced, especially after contact with stool, but adoption of soap in handwashing needs to be scaled up.
- Level of handwashing for primary school children after defecation in school is lower than at home.
- Motivators and barriers to handwashing with soap in a school environment are distinct from those at the community level.
- Soap and water availability are key facilitators to HWWS. The presence of soap at the handwashing site is of critical importance.
- Washing hands with soap takes a lower priority in the hygiene hierarchy.
- Radio is the most important form of mass media for mothers. However, men control its listenership most of the time.

Recommendations

There is need for a community- and school-focused campaign. A school-based campaign should consider the following:

- Soap used in the school should be in liquid form.
- The project should partner with other stakeholders who can prepare dispensers that minimize soap wastage. Practical Action is in the process of developing dispensers that are designed for handwashing in school.
- Several other related programs are ongoing in schools. Teachers also relate to handwashing as part of hygiene. In schools children are also taught handwashing as part of the concept of hygiene. Therefore, the HWWS campaign cannot work in isolation; it requires to be integrated into the whole concept of hygiene in school and existing related programs, such as deworming.
- The campaign should adopt an integrated approach to incorporate the Ministry of Education, teachers, and parents. This will ensure that soap is incorporated in the school budgets or a provision is made where the parents can be encouraged to contribute. The parents would support this behavior at home.
- The communication program should be based on aspiration messages to connect with children and use peer group education. The existing clubs could be utilized to promote adoption of the behavior. However, measures

must be put in place to ensure vibrancy of the clubs. Strategies of keeping the clubs active could be borrowed from the Boy Scout or Girl Guide movement.

- The project should consider a reward system, which is not necessarily monetary, for teachers in charge of the campaign in school.
- For long-term impact, the campaign should seek to influence the design of sanitation facilities to incorporate appropriate handwashing facilities which are conveniently located.

The community-based campaign should consider the following:

- Radio and interpersonal communication methodologies will be key to reaching mothers effectively.
- The campaign could consider different execution messages which will promote handwashing behavior at different junctures.
- Messages should capture the aspirations and dreams that mothers have for their children.
- To reduce the incidence of forgetting to wash hands after the toilet, the campaign could utilize leaky tins which are placed next to the toilet.



SECTION ONE: Introduction

1.1 Research Background

The World Bank and development partners recognize handwashing as one of the most effective means of preventing diarrheal diseases, along with safe stool disposal, as well as safe and adequate household water supply and storage. Washing hands with soap at the right times can reduce instances of diarrhea by 35–50 percent. Evidence also suggests that handwashing with soap can reduce acute respiratory infections (ARIs) by 30 percent.

The government of Kenya, together with development partners, has developed a campaign to raise awareness of the importance of washing hands with soap. However, awareness generation alone is unlikely to change behavior among target consumers. For instance, some consumers do have some awareness of the health benefits of handwashing but do not practise it.

1.2 Justification of Research

A number of small-scale approaches have been undertaken in the past and though these have had an impact, they do not give a national picture. Additionally, information on current handwashing levels is hard to find: handwashing behavior is an emotive issue whose data can mainly be collected using observation techniques, yet most national surveys have been quantitative in nature, basing their reporting on claimed responses. This approach allows for neither the verification of a claim nor does it capture certain information critical to handwashing behavior, such as where were hands washed with soap, what was the source of the water, what was the method used for washing hands and what are the key times when hands are washed. It is also indicated that past sanitation activities in the country have focused mainly on provision of clean water and sanitation facilities, good water storage method, and water treatment. This is an indication that handwashing with soap as a preventive sanitation measure against diarrheal diseases has not been addressed in detail.

Therefore, a study was needed that would provide information on handwashing behavior in detail, by looking at the behavior practised with regard to handwashing with

soap (for instance: Has soap been used or not? Is the soap affordable? What kind of soap is used and why?), and factors that influence handwashing behavior (both barriers and motivators).

Similar studies have been carried out in countries such as Ghana, Tanzania, and Uganda. However, these studies placed a lot of emphasis on community handwashing practices. There was need for a Kenyan study with special focus on handwashing behavior in the school context.

The research findings will input into a national handwashing with soap (HWWS) campaign. In addition, the research forms a baseline to measure changes in handwashing behavior among target groups after the campaign.

1.3 Objectives of the Research

The overall objective of this study was to carry out a baseline survey on handwashing with soap in the community and in the school environment in urban and rural areas. The specific objectives of the study were to:

- Record the current rates of handwashing with soap among the target groups at key times:
 - After using the toilet;
 - Before eating or handling food; and
 - After cleaning a child (mothers or caretakers of children under five years of age).
- Obtain a deep understanding of the drivers and motivations of handwashing behavior.
- Establish barriers and facilitators of handwashing behavior.
- Determine the preferred and trusted channel of communication.

1.4 Methodology

The study used secondary and primary research data.

1.4.1 Secondary Research

The focus of secondary research was to review the existing literature that exist on handwashing practices in other countries, and establish initiatives that have been undertaken in Kenya towards handwashing with soap.

- Identify the knowledge gap and focus the study on important areas that were not fully addressed by these studies.
- Gain from the lessons learnt from similar surveys conducted in other African countries.
- Review the strengths and weaknesses of methodologies used and challenges encountered.
- Conduct a review of the instruments used.
- Build on the strengths of previous and ongoing research.

The findings of secondary research have been incorporated in the main report.

I.4.2 Primary Research

Primary research used two broad approaches: school approach and community approach. Each approach used multiple methodologies. Details on methodologies are covered under each approach.

I.4.3 Data Analysis Tools

Qualitative data were analyzed using interpretative analysis through inductive and deductive logic. Quantitative data were analyzed through SPSS⁴ analysis package using descriptive statistics. Data have been presented in charts and tables.

I.4.4 Field Work Dates

The study was carried out between March and May 2007. Data was collected in March 2007.

I.5 Field Challenges

The study experienced a few challenges in the field as described below.

Security. The observers in this study were all female. Some of the study sites had security concerns. Project management organized for escorts where necessary and observers were encouraged to move in groups.

Drop-outs in behavioral trials and household interviews. The study lost four behavioral trials out of the proposed 40. One primary caregiver could not be

traced following domestic violence. Three in Machakos dropped out on the basis of superstition that the soap was meant to bewitch them. At the household level, 20 primary caregivers dropped out on the day of observation, after confirming their availability the previous day. The study was extended to replace the households.

Lack of cooperation from school management.

During the time that this study was carried out, other donors were also carrying out activities in the same urban school. There was reluctance to participate in the exercise on the basis that it was taking too long without a direct benefit to the school.

The project ran out of water in a few schools during the last days of behavioral trials in school. The project team bought water to complete the exercise.

High rate of soap disappearance in schools. The soap had to be replaced every break time.

I.6 Project Learning

Following this project the following learning can be integrated into future projects:

- The study should over-sample behavioral trials and households to factor in drop outs.
- Future projects should budget for more soap.
- Future projects should identify secondary caregivers so as to study them as individuals rather than a group.
- Kenyans have a strong culture of washing their face in the morning. Therefore, washing hands after using the toilet first thing in the morning may be driven by this culture.
- Kenyans perceive the concept of handwashing as part of their general hygiene.

I.7 Report Structure

The report has been divided into three major sections:

- Background information;
- Community study; and
- School study.

⁴See Footnote 2.

2. Background Information

2.1 Background on Kenya

Kenya has an estimated population of 3.4 million people, of which 65 percent is rural and 35 percent is urban. The

country is divided into eight provinces. A brief background of each of these provinces is given in table 2.1.

Table 2.1: Population and Poverty Incidences across the Study Provinces

Province	Total population according to 1999 Census	Poverty incidence
Central province	3,724,159	Ranks as the least poor province, with most locations exhibiting a poverty incidence of less than 40 percent. Thika district accounts for 43 percent of the urban poor in Central province, while Nyeri accounts for another 21 percent.
Nairobi province	1,153,828	Nearly 880,000 people live below poverty line.
Coast province	2,487,267	A rural poor population of roughly 909,000. Two-thirds of the rural poor in Coast province are found in Kilifi and Kwale. The urban poor population is estimated at around 400,000 persons, of which two-thirds is concentrated in Mombasa town.
Eastern province	4,61,779	Has a rural population of approximately 2.5 million people. The rural poor population is concentrated in Kitui, Machakos, Makueni, and Meru North districts. Nearly 133,000 urban poor living in Eastern province.
Nyanza province	4,392,196	A rural poor population of 2.4 million people. It exhibits very high poverty levels across most divisions and locations. Bondo is the poorest district.
Rift Valley	6,987,036	An estimated 2.7 million rural poor and 450,000 urban poor in this province.
Western province	3,358,776	Nearly 1.8 million poor people.

2.2 Under-Five Mortality and Incidences of Diarrhea Cases

According to the Demographic Healthy Survey, 2003, the under-five mortality (per 1,000 live births) is 115. The mortality is higher in rural areas compared to urban areas (117 rural and 94 urban). It is high among the poor compared to the rich (149 for the lowest wealth quintile and 91 for the highest wealth quintile). Central province has the lowest under-five mortality at 54, followed by Rift Valley at 77. Under-five mortality is highest in Nyanza (206); this is followed by Eastern and Western (163 and 144, respectively).

World Health Organization statistics, 2006, records that diarrheal diseases caused 16 percent of deaths among children under five years of age in 2002–03. Prevalence of diarrhea among children under five years, measured by the incidence of diarrhea in the last two weeks, was recorded at 16 percent in 2003. Coast and Western provinces recorded the highest prevalence at 23.1 percent and 21.9 percent, respectively. Central had the lowest prevalence at 7 percent.

2.3 Kenyan Soap Market

Soap has proved to be an essential commodity that individuals cannot do without. It also demonstrates the value of hygiene as far as human beings are concerned—it is ranked the third-most essential need after water and food. In the Kenyan market, consumers have a wide range of choice depending on the preference, perception, and prices. There are various types of soaps in the market, for instance, powdered, bar, toilet, and liquid soaps.

Bar soaps are the most preferred type of soap. They are sold either as bars or small pieces; the latter is preferred

by urban and rural poor people. The preference for bar soaps is driven by their wide application at the household level to accommodate different needs and low household budgets. Bar soap usage cuts across all the socioeconomic classes in Kenya, with heavier usage in the rural areas and among urban poor people. Powder soaps are preferred for laundry and used mainly by the middle and upper class. Liquid soap is mainly used by the upper class. The leading soap manufacturers in the Kenyan market are Unilever and Bidco Company.

Table 2.2: Main Soap Brands in the Market and Pricing

Detergent	Weight	Price (in KES) ⁵
Bar soaps		
Ushindi	200 g	21
Sunlight	200 g	22
Omo	200 g	23
Whitestar	800 g	58
Panga	1 kg	59
Kwanga	1 kg	54
Toilet soaps		
Imperial Leather	200 g	49
Geisha	250 g	48
Active	140 g	44
Lux	125 g	45
Protex	200 g	80
Pamolive	125 g	37
Dettol	200 g	86
Flamingo	225 g	43
Powdered soaps		
Omo	500 g	78
Gental	500 g	69
Ariel	400 g	63
Soaftle	1 kg	159
Power	500 g	59
Sunlight	500 g	60
Liquid soaps		
Nivea body wash	250 ml	345
Protex	250 ml	280
Revlon	200 ml	197
Fa body wash	300 ml	302
Biogel handwashing	500 ml	94
Hovid quick clean handwashing	120 ml	299



⁵ US\$1 = KES 68.75 (as of August 30, 2008). Conversion rates are from http://coinmill.com/KES_USD.html; all conversions in the text are approximate. (KES stands for Kenyan Shillings.)

SECTION TWO: Community Study

The community study sought to understand handwashing behavior using qualitative and quantitative parameters. The study targeted women who are primary caregivers of children aged five years and above. The study was conducted in all the eight provinces. One district was selected in each province.

3.0 Methods Used in the Community Study

A summary of the methods used to collect data is described in table 3.1:

a) Behavioral trials: This is the process of introducing individuals to a behavior and assessing their experiences with trying to carry out that behavior over a period of seven days. This exercise gave insights on how easily the new behavior would be adopted, motivators of the behavior, and barriers to adoption of the behavior.

In the trials, physical barriers to behavior adoption were controlled in order to unveil other underlying adoption barriers. Respondents were given soap and encouraged to use it to wash their hands at key times, that is, before handling food and after possible contact with feces. After seven days the interviewer visited the participants and carried out an in-depth interview on their experiences between the two visits. The aim of the process is to determine compliance with the behavior and barriers hindering compliance.

Forty trials (five in each district) were conducted with caregivers of children aged less than five years in the households. The households selected were within the

target communities and districts. All behavior trials were conducted in villages different from the ones where household interviews were conducted, but they were within the same sub-location. Participants were selected at random using a recruiting questionnaire.

After recruitment, the respondent was given the soap and asked to use it at key junctures. However, the respondent was also free to use the soap in any other way. Interim visits were made after three days and more soap was placed where necessary. A debrief was conducted after seven days.

b) Focus group discussions (FGDs): The FGDs focused on handwashing with soap (HWWS) at key junctures, that is, after contact with feces and while handling food. They sought to establish existing behavior, motivations, and barriers at the functional and emotive levels. Each focus group had eight to 10 respondents. Discussions lasted about one-and-a-half hours.

c) In-depth interviews: In-depth interviews were conducted with key informants who included:

- Public health officers;
- Community health workers;
- Nongovernmental organizations (NGOs) dealing with sanitation;
- Assistant chiefs; and
- Influential women group leaders.

d) Structured observations: The objectives of structured observation were to establish the proportion of times the following occurred:

- Caregivers wash hands with soap (WHWS) after using the toilet.

Table 3.1: Summary of Study Methods

Method	Target population	Sample size	Study districts
Structured observations and household interviews	Caregivers of children below five years	802 (about 100 per province)	Nyeri, Nairobi, Kisumu, Bungoma, Mombasa
Behavioral trials	Primary caregivers of children below five years	40	Five in each district
Focus group discussions	Caregivers of children below five years	8	One in each district
In-depth interviews	Community leaders	36	Four in each district

- Caregivers WHWS after cleaning up index child.
- Caregivers WHWS before feeding a child.
- Caregivers WHWS before handling foods (taken raw).
- School-age children WHWS after using the toilet at home.
- School-going children WHWS before eating.

Structured observations were conducted in eight provinces. These are all provinces in Kenya, except North Eastern province. North Eastern province was left out because of logistic problems in carrying out the research. Villages in North are far apart. In addition, accessibility of villages very early in the morning as required in this study is a challenge due to security concerns. One district was selected in each province using simple random sampling. Two sub-locations (smallest administrative unit in Kenya) were selected using the probability proportion to size (PPS) method.

A listing of villages was obtained in each sub-location. The interviews were spread across several villages in the same sub-location. Systematic random sampling was used to select households that participated in

household and primary caregiver as well as to book an appointment for the following day. The study objectives were discreetly thought out interviewer visits and interaction with the respondents. The study was introduced as one that would be studying family life, to avoid bias. During the recruitment the primary caregiver and index child were identified. All participating households had a child aged less than five years. The interviewers arrived at the household at 5.55 am and strategically positioned themselves to observe handwashing behavior at key junctures. All observations started at 6.00 am, except where the household woke up late, and ended at 9.00 am. The observations also captured the handwashing behavior of secondary caregivers and school-going children at the household level. Table 3.2 summarizes the junctures observed.

e) Household survey: The objective of the household survey was to get the views of community members on hygiene practises, sources of information and communication channels, cost of soap and handwashing agents, and gather demographic data of the study respondents.

Table 3.2: Summary of Junctures and Persons Observed

Juncture	Person observed		
	Primary caregiver	Secondary caregiver	School-going children
After using the toilet	√	×	√
After cleaning up the bottom of index child	√	√	×
Other contact with stool	√	√	×
Before feeding the index child	√	√	×
Before handling food (taken raw)	√	×	×
Before eating	×	×	√

√ *Juncture was observed.*

× *Juncture was not observed.*

the study - this was done by choosing every fourth household on the list of those with children under five years of age.

The interviewer visited the participating house one day before to seek consent from the head of the

The respondents who participated in the structured observations were the same sample for household survey. Household interviews were conducted with the primary caregivers immediately after observations. A total of 802 interviews were achieved.



4.0 Results

4.1 Baseline on Handwashing

Observations at the household level captured primary caregivers, secondary caregivers, and school-going children. This section presents the findings related to handwashing practises at the household level by secondary and primary caregivers. The results related to school-going children have been reported under the school study in Section Three.

The study established that primary caregivers were, in most cases, the first people to wake up in the household. There was a high incidence of using the toilet first thing after waking up and washing the face immediately after. In Kenya there is a strong culture of washing one's face first thing in the morning. Therefore in such cases the motivators of handwashing may not be driven by the juncture but the need to wash their face. This Section presents baseline of handwashing at three levels, that is, consistent handwashing, any handwashing, and handwashing based on incidences.

4.1.1 Consistent Handwashing by Primary Caregivers

Consistent handwashing in this study is defined as 'washing hands always at any risky juncture'. It determines the proportion of caregivers who have fully adopted this behavior and have made it a habit. A consistent handwasher washes hands at every risky juncture. This is what handwashing programs aim to achieve. The recommended way to wash is to rub both hands. When

calculating consistent handwashing, the study eliminated those who washed only one hand. Table 4.1 summarizes the findings of those who consistently washed hands the correct way.

Overall, 14 percent of primary caregivers washed hands with or without soap at all risky junctures. However, only 5 percent of primary caregivers washed hands with soap at all risky junctures. Handwashing behavior is relatively stronger in Mombasa and Nyeri compared to other regions. Handwashing culture is exceptionally low in Kisii. Unlike other regions, Nyeri had good access to water round the year. Only 12 percent said they had experienced water scarcity. Mombasa is predominantly Muslim. Religion may be a strong driver of handwashing in Mombasa.

Note:

- Percent of primary caregivers who consistently washed hands with or without soap, or washed hands with soap at all risky junctures across the region (N = 786).
- Consistent soap use excludes those who washed only one hand.
- Consistent handwashing behavior of secondary caregivers was not calculated since secondary caregivers in the household were not differentiated.
- Observations were carried out over a duration of three hours. The study therefore may not objectively establish consistent handwashing behavior across junctures.

Table 4.1: Consistent Handwashing

	Consistent handwashing	Washed one hand only	Consistent and correct soap use	Number of primary caregivers
Nyeri	34%	6%	12%	98
Mombasa	27%	16%	13%	99
Trans Nzoia	11%	8%	1%	101
Kisumu	10%	1%	2%	99
Bungoma	10%	22%	2%	100
Machakos	9%	4%	4%	98
Nairobi	7%	3%	2%	96
Kisii	3%	0%	1%	95
Overall	14%	8%	5%	786

4.1.2 Any Handwashing Behavior by Primary and Secondary Caregivers

Any handwashing in this study is defined as 'washing hands at least once at any risky juncture'. It helps to determine the proportion of people who are familiar with the concept of washing hands but who may or may not have put it into practise. Overall, primary caregivers recorded 92 percent of any handwashing with or without soap, and 60 percent handwashing with soap. On the other hand, secondary caregivers recorded 65 percent of any handwashing with or without soap and 16 percent with soap. It is apparent that primary caregivers are more likely to wash hands than secondary caregivers.

Trans Nzoia recorded the highest incidence of HWWS. This may indicate the impact of community education campaigns on handwashing with soap which are being carried out in Bungoma and Trans Nzoia. At the time of this study there was a sanitation and hygiene campaign, being conducted by the Ministry of Health, at the community and school level triggered by a cholera outbreak in Bungoma. According to interviews with key informants in the area, handwashing with soap had increased compared to what the community was exposed to. However, the behavior has not been fully adopted since only 2 percent of caregivers in Bungoma and 1 percent in Trans Nzoia are consistent handwashers, as indicated in Table 4.1.

According to this study caregivers in Kenya are familiar with handwashing. Therefore, the challenge of this program will be to get them become consistent handwashers with soap.

Note:

- Percentage of primary and secondary caregivers who washed hands with or without soap, or washed hands with soap at least once at any risky juncture across the region.
- The base of primary caregivers is the respondents. There was only one primary giver in the household.
- The base of secondary caregivers is events in each household since the secondary caregivers were not differentiated.

4.1.3 Handwashing Based on Events Observed

A total of 3,387 events (of risky junctures) were observed with primary caregivers and 566 with secondary caregivers. Out of the total junctures the incidence of handwashing with soap is at 25 percent and 57 percent for handwashing with or without soap for primary caregivers. Secondary caregivers recorded 29 percent handwashing with soap and 61 percent handwashing with or without

Table 4.2: Any Handwashing by Primary and Secondary Caregivers across Regions

	Primary caregivers (N = 786)			Secondary caregivers (N = 353)		
	Any HW	Any HWWS	No. of primary caregivers	Any HW	Any HWWS	No. of households with a secondary caregiver
Overall	92%	60%	786	65%	16%	353
Trans Nzoia	100%	72%	101	71%	29%	38
Nyeri	97%	59%	98	25%	17%	12
Mombasa	95%	54%	99	83%	30%	47
Nairobi	94%	67%	96	73%	15%	55
Bungoma	94%	74%	100	77%	11%	61
Kisumu	91%	62%	99	68%	11%	56
Machakos	90%	52%	98	46%	14%	50
Kisii	78%	37%	95	32%	3%	34

- Note:**
- Percentage of primary and secondary caregivers who washed hands with or without soap, or washed hands with soap at least once at any risky juncture across the region.
 - The base of primary caregivers is the respondents. There was only one primary giver in the household.
 - The base of secondary caregivers is events in each household since the secondary caregivers were not differentiated.

soap. Caution must be taken when comparing secondary and primary caregivers because of the differences in the number of events observed. Comparing all the regions, handwashing is commonly practised in Mombasa and Nyeri. Handwashing with soap is exceptionally low in Kisii, followed by Machakos.

Table 4.4 summarizes handwashing behavior of primary and secondary caregivers across the junctures: both primary and secondary caregivers are more likely to wash

hands when they come into contact with stool compared to when handling food.

Frequency of handwashing with soap by primary caregivers at key junctures in Kenya is much higher compared to other countries such as Uganda, as indicated in Table 4.5. However, caution must be taken when comparing the Uganda and Kenyan studies directly, because the two studies analyzed the data differently—while Kenya used events, Uganda used respondents.

Table 4.3: Handwashing with or without Soap Based on Events Observed across regions

	Primary caregivers (N = 3,387)			Secondary caregivers (N = 566)		
	Washed hands with/without soap	Washed hands with soap	Events	Washed hands with/without soap	Washed hands with soap	Events
Total	57%	25%	3387	61%	29%	566
Nyeri	70%	30%	337	74%	50%	34
Mombasa	69%	29%	370	75%	33%	75
Bungoma	66%	30%	570	77%	33%	78
Trans Nzoia	63%	31%	419	55%	22%	58
Nairobi	56%	22%	440	66%	29%	95
Machakos	51%	19%	354	60%	32%	77
Kisumu	48%	24%	441	53%	26%	99
Kisii	36%	11%	456	24%	4%	50

Table 4.4: Handwashing with or without Soap Based on Events Observed across Junctures

	Primary caregivers			Secondary caregivers		
	Washed hands with/without soap	Washed hands with soap	Events	Washed hands with/without soap	Washed hands with soap	Events
After cleaning child's bottom	71%	36%	507	62%	33%	165
After other contact with stool	67%	37%	490	73%	39%	163
After suspected self defecation	61%	31%	917	N/A	N/A	N/A
Before handling food	47%	15%	811	N/A	N/A	N/A
Before feeding or serving index child	46%	11%	662	52%	18%	238

N/A Juncture was not observed.

Table 4.6 summarizes the proportion of events where primary caregivers washed hands with soap across regions. Across all junctures, Kisii records very low incidence of soap usage. Although Mombasa has a strong handwashing culture, use of soap is not very strong.

Table 4.5: Handwashing with and without Soap by Primary Child Caregiver in Uganda

Event	Any HW (%)	WHWS any soap (%)
After self defecation (N = 333)	57%	14%
After cleaning child's bottom (N = 285)	52%	19%
After other contact with stool (N = 169)	38%	11%
Before feeding or serving index child (N = 343)	41%	6%
Before handling food/drink (ready to eat) (N = 297)	34%	8%
Before eating (N = 181)	68%	8%

Note: N = 500.

Source: Uganda Formative and Baseline Survey Handwashing Report. 2007.

4.1.4 Soap used for Handwashing

Bar soaps were the dominant cleansing agent with 70 percent usage except for Mombasa (22 percent) and Nairobi (48 percent). There was usage of medicated and perfumed or scented soaps in Mombasa and Nairobi. The use of bar soaps in rural areas is almost universal. The dominance of bar soap is further emphasized by the fact that, out of 338 households which had a cleansing agent at the handwashing site, 76 percent had bar soaps. The preference for bar soap is driven by its multiple applications in the household and by its affordability. During behavioral trials the soap placed was used not only for handwashing but also for washing clothes, body washing and, in a few cases, washing dishes. Therefore, bar soaps are most appropriate for handwashing campaigns at the community level.

4.2 Procedures of Washing Hands

If hands are not washed properly, there is a risk of contamination. It is recommended to wash both hands with soap under running water and dry them with a clean piece of cloth. After the observations, the primary caregiver was asked to wash hands the way she normally would. The study established that nearly all primary

Table 4.6: Handwashing with Soap by Primary Caregivers Based on Events Observed across Junctures and Region

	Total	Kisii	Nyeri	Mombasa	Kisumu	Trans Nzoia	Machakos	Nairobi	Bungoma
After other contact with stool (N = 490)	37%	18%	37%	44%	42%	45%	35%	40%	33%
After cleaning child's bottom (N = 507)	36%	18%	47%	30%	48%	38%	27%	24%	54%
After suspected self defecation (N = 917)	31%	16%	35%	36%	28%	39%	25%	30%	33%
Before handling food (N = 811)	15%	6%	11%	23%	12%	21%	8%	12%	23%
Before feeding or serving index child (N = 662)	11%	5%	21%	18%	6%	11%	7%	8%	16%

Note: N = events observed.

caregivers washed hands. However, 10 percent used recycled water, 50 percent dried hands with the clothes they had on and 26 percent preserved the water for later use. This indicates risk of contamination after washing hands. The campaign should also sensitize the community on the proper way of washing and drying hands.

4.3 Perception of Important Junctures of Handwashing with Soap

The study sought to establish community perception about when people think it is important to wash hands. Washing hands with soap after using the toilet (71 percent) and before eating (55 percent) had the highest mention, both top-of-the-mind recall and overall. Most communities in Kenya have a number of dishes which are eaten using the hands, which may explain the high priority of washing hands before meals. Physical dirt and strong smells trigger handwashing with soap, indicated by the need to wash hands after contact with sticky or smelly material, after coming back from the garden, and after eating. The campaign should seek to increase awareness of handwashing with soap at other key junctures.

4.4 Sanitation Environment in Community

Pit latrines are the most common types of toilets in Kenya. This implies that the community must get out of the house to go to the toilet. This applied also for those who shared the flush toilet. It is important to note that there are 2 percent households that did not own any toilet and therefore had to go far from their houses to defecate. This was encountered in Mombasa (8 percent), Trans Nzoia (2 percent), Bungoma (2 percent) and Machakos (3 percent). Most households' toilets are located at an estimated distance of 20 to 50 meters from the handwashing sites.

An observation of toilets in the 802 households visited revealed that 59 percent were dirty. This implies that over half of the household do not prioritize hygiene of the toilet. It also indicates high chances of contamination after using the toilet. Toilets in Bungoma had the highest mention of poor hygiene.

Sources and Availability of Water

In the HWWS behavioral campaign, access to water is critical. Most households fetch water from outside the compound except in Nairobi, Mombasa, and Nyeri, where water is conveniently available in the compound.

Table 4.7: "What Do You Think are the Key Times When You Must WHWS?"

N = 802	1st mention	2nd mention	3rd mention	Total
After toilet	37%	22%	12%	71%
Before eating	30%	15%	10%	55%
After contact with sticky, oily, smelly material	9%	14%	14%	37%
After coming from the field/garden/work	5%	8%	16%	29%
First thing when you wake up	4%	1%	3%	8%
After eating	3%	13%	8%	24%
After cleaning up a child	3%	7%	7%	17%
Before cooking food	3%	6%	4%	13%
Before breastfeeding	1%	2%	3%	6%
Before feeding a baby	1%	2%	6%	9%
Before serving food	0%	2%	3%	5%
After touching animals	0%	2%	3%	5%
Before saying prayers	0%	0%	1%	1%

When the people were asked whether they had experienced water shortage one year before the survey—to an extent of limiting use or recycling water—34 percent responded in the affirmative. A further review

Table 4.8: Toilet Facilities at the Household Level

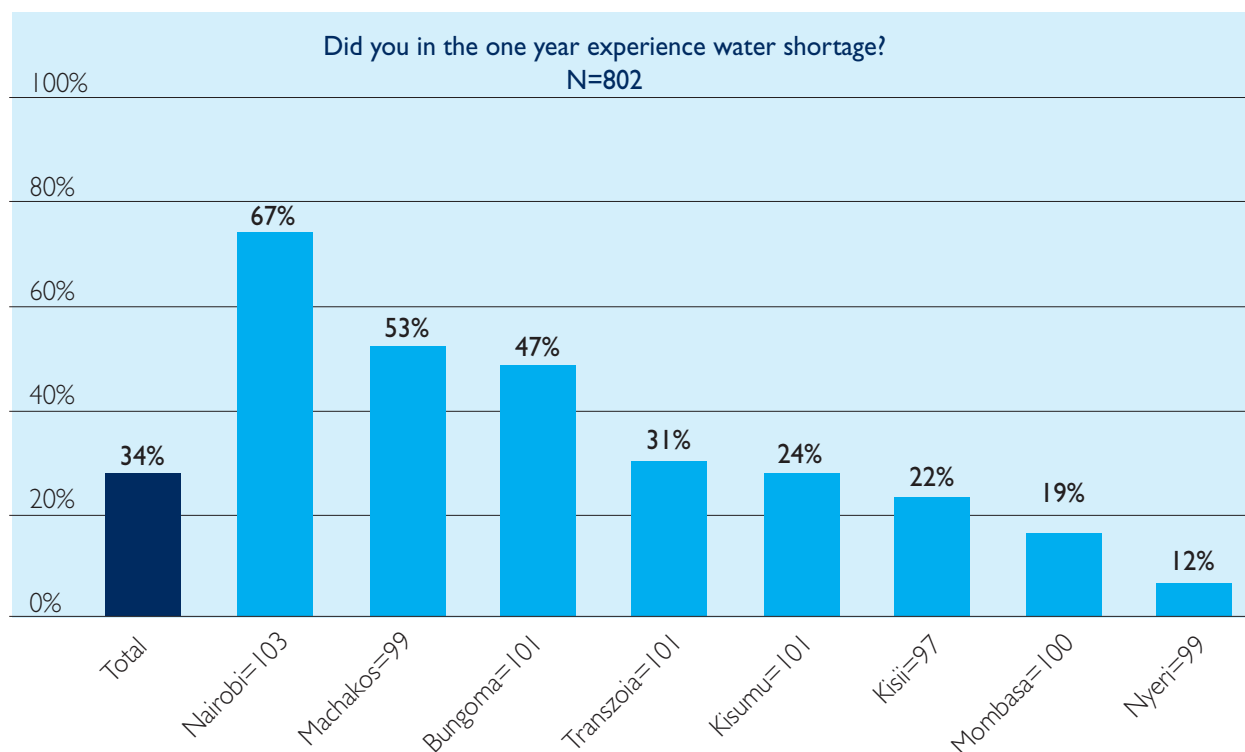
Type of toilet	
Uncovered pit latrine	32%
Covered pit latrine: private	23%
Covered pit latrine: shared	22%
Flush toilet: shared	11%
Flush toilet: private	9%
Public toilet	3%
Bush	2%
Condition of the toilet	
Clean	31%
Somewhat dirty	44%
Dirty, feces visible, some smell	14%
Very dirty, overflowing, very smelly	1%
No need for observation	6%
Not mentioned	11%
Note: N = 802.	

of this scarcity across the region reveals that not all regions are affected equally. Water scarcity is severe in Nairobi, Machakos, and Bungoma. Water scarcity may have a relationship with sanitation in the area. As mentioned in the previous Section, most toilets in Bungoma were found to be very dirty. Water scarcity was also found to be prolonged with 84 percent of those who experienced water shortage claiming that it took two months or more for water to be available.

Table 4.9: Main Sources of Water

Wells, springs, rivers, dams	30%
Tap in the yard	26%
Communal tap	18%
Tap or piped water in the house	8%
Bore hole	8%
Vendor	5%
Well in the yard	3%
Rain water	2%
No response	2%
Note: N = 802.	

Figure 4.1: Proportion of Households that Experienced Water Shortage in the last One Year



4.5 Background of Respondents

4.5.1 Demographic Characteristics

The range age of primary caregivers with children less than five years are young mothers in the range of 18–35 years (82 percent). Forty-eight percent have not gone beyond primary school, while 19 percent have little or no formal education. Most (80 percent) are married. The campaign should be designed to also cater for those with little or no formal education.

4.5.2 Values and Aspirations of Primary Caregivers

Values: The caregivers' core values are family based, with emphasis on family unity. The day-to-day activities are therefore family centered. Their nurturing instincts play an important role. Nurturing is defined as ability to give children a quality life; educate and discipline them (morally upright children). They need to be protected from alcohol and drug abuse, diseases, and other society vices.

- "I really fear a kind of situation where children turn up rude and undisciplined even towards me; and towards society such that no one will want to be associated with them." (Bungoma district)
- "Recently, there has been an increase in rape cases... every time you are afraid for their safety especially when you know you cannot be with them all the time." (Nyeri district)

According to the focus group discussions, women enjoy nurturing their children in addition to doing daily household chores. Hygiene maintenance plays a great role. Religion plays a major role in mothers' lives

- "I like taking care of my children, even though they don't go to school, I have charts, I sit and teach him ABC—'A' is for apple, 'B' is for banana... and they are usually happy... when you meet them you will think they have started school!" (Mombasa district)

Aspirations: Caregivers' aspirations revolve around their children and family. They aspire to have financial freedom in order to contribute to the family's welfare and guarantee their family a good quality life. They aspire to have well educated, disciplined, and socially acceptable children.

4.5.3 Challenges Caregivers Experience

Poverty, HIV/AIDS, family strife, irresponsible husbands, and moral decadence in society are the main challenges that caregivers face. Poverty and HIV/AIDS were the most threatening. Most mothers are afraid of contracting HIV/AIDS, leaving their children orphans—and therefore not able to escape the clutches of poverty. This was explicit in all regions, but mentioned more in Mombasa and Kisumu districts. These challenges inhibit their ability to nurture the children to the best of their ability. Religion plays an important role in helping these women cope with their challenges and nurture their children.

Table 4.10: Demographic Characteristics

Age of the consumers	
Less than 18	1%
18–24	30%
25–30	29%
31–35	23%
36–40	8%
41 and above	6%
No response	2%
Highest education level attained	
Never attended school	3%
Did not complete primary school	16%
Completed primary school	29%
Did not complete secondary school	13%
Completed secondary school	23%
Beyond secondary school	13%
No response	2%
Marital status	
Married	80%
Single	13%
Widowed	2%
Cohabiting	2%
Divorced or separated	1%
No response	2%

Note: N = 802.

Table 4.11: Summary of Mothers' Aspirations

Dream	Dreams of mothers (Focus Group Discussion participants)
Best education for their children	"I would like to see my children clean and in good health." (Machakos district)
High paying career	"I do not have land so I pray my children get a good education and uplift my living standards. Also I want them to be acceptable in society, and not be despised." (Bungoma district)
Quality lifestyle, for instance, health	"I want my first-born to have a good certificate with a marketable career." (Nairobi district)
Children to become responsible citizens	<p>"My dream is to educate my kids, to get jobs, because once they start working, if I am alive then I will also benefit." (Mombasa district)</p> <p>"I fear early marriages, as they always do not work out. Should my daughter get married; the husband would not be able to support [her], and she will be forced to come back home. Or she might leave you with the children to bring them up, yet I am unable to support her and her child." (Bungoma district)</p>
Personal (women's) financial independence	<p>"I want to have money, so that my children can get a good education, and get jobs; and God [will] bless them so they can take care of me in [my] old age." (Bungoma district)</p> <p>"I want to have a sufficient amount of money so that I can support my son on my own." (Nairobi district)</p>
Support spouse	"I want to have a progressive business where I can join a merry-go-round so that my child can go to a boarding school." (Nairobi district)
Improve quality of life	"Our husbands tell us not to do business. They don't want us to do anything but be a housewife... you cannot sell potatoes because the husband will say that you are shaming him... most of the time they beat you up... most of the time they make us angry and when the heart is angry doing something is hard." (Mombasa district)

4.6 Knowledge and Attitudes towards Handwashing

4.6.1 Perception and Attitudes towards Hygiene as a Practise

Based on insights from community focus group discussions and in-depth interviews with community leaders, hygiene is a holistic concept which is associated with the personal, psychological, and physical environment's cleanliness and health. Handwashing falls under the broad concept of

hygiene but is perceived to be important from the health perspective.

Personal care: This is about personal grooming (short nails, clean clothes, bathing, short hair, and so on).

Psychological: This has to do with purity and peace of mind. Those observing hygiene are perceived to be people of virtue, and enjoy a good quality life as a result.

Physical environment: It is about hygiene in the general environment (including sanitation in homes). It has

Table 4.12: Summary of Barriers and Biggest Fears to Realization of Dreams

Barriers	Description
Poverty	<ul style="list-style-type: none"> • Inability to provide basic needs for children. • Retrenchment or unemployment. • Lack of start up capital. • Denied permission by husbands to be employed or do business.
Family problems	<ul style="list-style-type: none"> • Single parenthood as a result of death of partner; or by choice. • Face marital strife, which brings instability in the home and lack of focus. • Have irresponsible husbands, for example, drunkards.
HIV/AIDS	<ul style="list-style-type: none"> • Children become orphans or are left with no one responsible to nurture them. • Infidelity of spouse.
Permissive society	<ul style="list-style-type: none"> • Children are exposed to societal vices such as early marriages, drug abuse, rape, crime, and so on.

to do with daily observation of sanitation issues, especially cleanliness in the compound (or playground), and cooking and dining areas. ‘Freshness’ is the emotional trigger for a clean environment.

- “Hygiene requires that you keep yourself clean, your house, children’s beddings, my beddings and clothes should be clean. The compound... and my husband [also should] be clean.” (FGD: Bungoma district)
- “To me cleanliness in general... [is] from your body to your environment.” (FGD: Kisumu district)

Health: Strongly associated with freedom from germs and diseases. Health is directly linked to the diet, consuming clean water, cleaning hands after toilet, and before and after meals.

- “It is... when you wash your hands before handling any food and keeping the kitchen clean.” (FGD: Kisumu district)
- “You see if there is no hygiene, there will be many worms... the kid gets worms... typhoid.” (FGD: Nyeri district)
- “Hygiene begins with our bodies, then [in] the environment, which we live in”. (FGD: Trans Nzoia district)
- “After using the toilets you have to wash your hands before preparing food—that is hygiene.” (FGD: Kisii district)

- “We have what I call hygiene of the heart... you might be living together, yet one of us has not cleaned their heart. Every time you do a good deed, one goes behind your back. So hygiene has to be in everything... we use and we deserve fresh air... So hygiene is to be observed everywhere, even in the environment we live.” (FGD: Mombasa district)

The main perceived benefits of observing hygiene standards are:

- Preventive measures against diseases, therefore, save on hospitalization fees and increase one’s productivity as a result.
- Safeguards and ensures growth of future generations. Growth of future generations is important in African culture.

4.6.2 Beliefs and Knowledge Relating to Handwashing

Overall there is positive attitude towards handwashing: 82 percent of all caregivers believe that their family would be healthier if they washed hands with soap all the time. Awareness of handwashing is high as indicated by the following:

- 92 percent of caregivers know that hidden germs cause diarrhea;
- 77 percent have been told that it’s important to

wash hands with soap;

- 91 percent know that there may be unseen contamination on their hands; and
- 94 percent know that diarrhea can kill.

However, there is a need to increase the depth of knowledge about handwashing as indicated by the following misconceptions.

- 43 percent feel that a child cannot avoid getting diarrhea. It is a normal part of growing up;
- 50 percent do not see any connection between handwashing and children missing school;
- 26 percent do not know that if a child is ill less often, he or she will grow to be strong and healthy; and
- 21 percent can tell if their hands are free of germs just by looking at them.

Most primary caregivers know that it is good to wash hands with soap but find it is always not possible to do so.

4.7 Motivators and Barriers to Handwashing with Soap ('Why?')

A review of literature from previous studies in Uganda, Tanzania, and Ghana revealed seven potential motivating factors: disgust, fitting in, purity, comfort, status, attraction, and nurture. This hypothesis was presented to caregivers in a focus group session. Presentations in the form of illustrated drawings, representing the motivating factors, were used to elicit their perceptions and understand motivators and barriers. The definition of each factor as used by the facilitators is shown in Table 4.13.

Each group was exposed to these motivators and an individual ranking was obtained. Table 4.14 presents an individual ranking of the motivational concepts by participants. These rankings are based on head count and hold no statistical meaning, but rather enhance understanding the positioning of motivational concepts in the mind.

Table 4.13: Motivating Factors

Factor	Description
1. Disgust	Dirt, contamination, smells—the things people find revolting, horrible, unappealing, and so on.
2. Purity	Cleanliness, spiritual purity, feeling untarnished.
3. Comfort	How you feel and how your hands feel when they're clean.
4. Status	Moving up in the world, being admired and respected.
5. Attraction	Attracting future partners, being attractive to your current partner. Looking good.
6. Nurture	Doing the best for my children, putting them first—rewarding them, teaching them, helping them develop.
7. Fitting in	Being part of the community, being seen to fit in, belonging, doing what others do.

Table 4.14: Individual Rankings of Handwashing Motivations by Female Focus Group Discussion Participants

Motivator	Ranked	No. of people ranking (64)
Nurture	1	22
Comfort	2	12
Disgust	3	10
Fitting in	4	8
Status	5	5
Purity	6	7
Attraction	7	2

4.7.1 Nurture

Box 4.1 has quotes about “nurture and how it relates to handwashing”. Most caregivers relate strongly to nurture, as children are their primary concern now. Other factors contributing to this include:

- Children (under five years) are more prone to infections than adults.
- The society values children.
- From a religious perspective, most caregivers believe children are a gift from God.
- Handwashing (with soap) as a practise is perceived to be a preventive measure against diseases.
- Most mothers have financially and emotionally invested in their children (to help improve quality of life in future).

Based on the quotes in Box 4.1, it is clear that handwashing is related to nurturing when feeding and handling a child



under five years. Handwashing at other key junctures did not come through strongly, suggesting a gap in knowledge.

Box 4.1: Nurture and Handwashing

The following are quotes from focus group discussions:

- “Children are my priority even though I do not have the money, but at least I wake up, make porridge for them, and tell them to go to school while I search for food... I care a lot about my children.” (Mombasa district)
- “My children are my pride and joy. I wash my hands to protect them.” (Machakos district)
- “The picture is telling me that I have to clean my hands for me to be able to attend to my children. They are my pride and joy and I have to be clean before doing anything for them because they are a blessing from God... children come from far and you struggle to have them. You must pray to God when you see your child looking fine.” (Nairobi district)
- “I could do anything for my children to protect them.” (Nyeri district)
- “If you do not have a baby, you are not a person; in a family you must have a baby. It is very important so it is necessary, you protect and make sure you feed her well and make sure she is in good health.” (Kisii district)
- “Because when you bring up a child from birth, the child needs to be taken care of and all my attention is usually on the child, for example, washing, feeding, and so on.” (Mombasa district)
- “I chose nurture because when it comes to diseases children are prone to diseases, because when my child fell sick, I could not sleep the whole night thinking about the illness.” (Mombasa district)
- “I chose nurture because if you touch a child with dirty hands the child can get diarrhea.” (Kisumu district)
- “I chose nurture because I am a parent. I believe I have to be clean to protect my child. There are diseases like worms because... if I touch food without washing my hands, then my child will be infected, it becomes my problem, thus... I must wash hands to protect them from disease as cholera; vomiting is mostly a result of dirt.” (Mombasa district)
- “Both you and your child must be clean. As for us, we share the toilet where we live. Every time your child leaves the toilet, you must wash his hands.” (Nairobi district)

4.7.2 Comfort

Box 4.2 has quotes about “comfort and how it relates to handwashing”. This came second after nurture.

Comfort is associated with mothers keeping their hands clean most of the time. This gives them flexibility to perform multiple tasks such as cooking, handling the baby, or even eating. It instills feelings of freedom and ability to perform tasks that require high personal hygiene without fear. Again, it shows that one adheres to religious beliefs.



Box 4.2: Comfort and Handwashing

The following are quotes from focus group discussions:

Positives

- “You cannot give comfort if your hands are not clean or even if you want to do other things that are important, like cooking... it is a must that you wash your hands. You touch almost every thing with the hands, even when you want to eat; you eat with your hands so you must wash your hands.” (Bungoma district)
- “My hands do not feel comfortable until I have cleaned them.” (Kisumu district)
- “From the words written there, I understand that personally I have to be clean. You know, when the hands are dirty you cannot eat anything. I must also love myself first to be able to love others. My hands have to be clean for me to be comfortable while eating and serving others. There will be fear of contracting diarrhea.” (Machakos district)
- “I can also be [doing things] in the house even if am alone, I touch money, even that money is dirty. So I am not comfortable when I have not washed my hands.” (Nyeri district)
- “That picture which shows that we should wash our hands has touched me. There was a time I had traveled to a certain place and because I was hungry I bought a fruit and ate without handwashing... I was sick afterwards, I had stomachaches.” (Trans Nzoia district)

Negatives

- “Stains may even remain in between your fingers and [when] you start chopping vegetables you will see the stains on the vegetables.” (Bungoma district)

4.7.3 Disgust

Disgust is highly associated with germs. This came third after nurture and comfort. However, disgust was a very strong motivator for handwashing where there is strong smell or after defecation. Factors contributing to most people associating germs with feces include:

- Most households lack proper toilet facilities. In urban towns, there is communal sharing, with no proper drainage and water system; in rural areas the facilities are lacking and most use the bush.
- Cultural issues, like men (head of household) being the only ones with access to the toilet are still practised, especially in Kisumu and Bungoma districts.
- Muslim religious practices on “cleansing self with water, and not using tissue” after a visit to the toilet.
- Germs from the toilet are believed to be the most dangerous and are likely to cause diarrhea, a killer disease amongst children.

Disgust relates to both personal and physical cleanliness. There is a high association of handwashing with this motivational attribute, as it is a key driver to handwashing with soap. Just like comfort, 'disgust' is likely to increase occasions for handwashing with soap.



Box 4.3: Disgust and Handwashing

The following are quotes from focus group discussions:

Positives

- “I have seen my neighbor... when her children come from the school they start eating directly without handwashing and even the utensils are not clean after being used.” (Trans Nzoia district)
- “I feel very bad if I come out of the toilet and I do not wash my hands. I feel like I am smelling just like [the] toilet.” (Nyeri district)
- “I really feel disgusted when my hands are not clean because I cannot greet my friends, neighbors, you can't touch your vitambaa's in the house... I feel very comfortable when handling food for my baby and my husband... you know you cannot do such things if your hands are dirty. You cannot caress your husband when your hands are dirty.” (Bungoma district)
- “I choose disgust this is because as a mother, when you start being clean I also enforced it on my children, but if you forget doing that then I am bound to even forget my child. That thought disgusts me when I think back of what I have done, like not practising cleanliness... it really disgusts me.” (Mombasa district)
- I chose that one because most diseases come and have no cure... There are many diseases... I should protect [our family] from this. We should wash our hands with soap after visiting the toilet, and also make sure it is clean.” (Kisii district)

4.7.4 Fitting In

Box 4.4 has quotes about “fitting in and how it relates to handwashing”. This came fourth after nurture, comfort, and disgust. Fitting in is associated more with being attractive, admired, and respected within the community. Women have a strong need to feel loved and appreciated by their husbands and the larger community. Again, they



serve the community in different areas, such as the church and at functions.

Fitting in also has to do with one having a sense of being respected, recognized, attractive; a sense of belonging, being a hard worker, religious and independent—being “less dependent on others”—and being able to afford the necessities of life, such as soap.

As it relates to handwashing, fitting in appears to be a weak motivator. It is a motivator to more visible elements of hygiene. In addition, caregivers feel that some factors beyond their control, such as poverty, make this a less persuasive motive. It has to do with hygiene maintenance at a physical and personal level.

Box 4.4: Fitting in and Handwashing

The following are quotes from focus group discussions:

Positives

- “I would be ashamed if people said I am dirty. Clean people are admired and respected in the community.” (Kisumu district)
- “You should be clean always... when you are clean you will appeal to everyone but when you are dirty people will avoid you.” (Bungoma district)
- “The picture is telling me that I must be a hardworking woman and not an idler so that I do not have to visit people all the time and start [saying]: help me with this and that.” (Machakos district)
- “I am not well [off], so at times I find myself with no money to buy soap. Sometimes I am forced to use porridge flour and a scrubbing sponge to wash off banana stains [and] I feel pain... But [since] I have no way out I try to bear the pain until the dirt comes off.” (Mombasa district)
- “The story I have is about a certain time we had gone to church. My church is Salvation Army, and we all dress in white. We had visitors in the church, we sang in the choir; the visitors we had were politicians. There was one lady whose dress was discolored, the politician stood up and said that all those whose dresses were sparkling white [should] come and receive some money... the woman with the discolored dress was left with nowhere to fit. It left me feeling that when you are clean you will get respect and you will appeal to people, but when you are dirty, you will just feel odd.” (Bungoma district)

Negatives

- “There are times we lack soap and you still have to bathe, or wash your baby’s clothes, and when I have soap I also use it to do all those things. So when I use water only, [only a] little dirt will come out and it will not be as dirty as it was... [but] when I use soap the dirt comes off completely.” (Bungoma district)
- “Not everyone here belongs to the same social class, and I can’t force myself to fit into someone else’s living styles.” (Bungoma district)
- “I cannot wash my hands because someone else has [already] washed.” (Kisumu district)
- “That shows that you do not have your own way of doing things and you just do things because friends are doing the same, yet they may not be doing [it] in the right way.” (Nairobi district)

4.7.5 Status

Box 4.5 has a remark about “status and how it relates to handwashing”. This was fifth after nurture, comfort, disgust and fitting in. Status gives one freedom to interact with others in society. It is closely related to fitting in.

Box 4.5: Status and Handwashing

The following is a quote from focus group discussions:

- “I have chosen this one of a woman washing her hands, because I like... washing my hands when I come from anywhere... even when I greet somebody I come and wash hands.” (Nyeri district)



4.7.6 Purity

Box 4.6 has remarks about “purity and how it relates to handwashing”. This was sixth after nurture, comfort, disgust, fitting in, and status. Purity has to do with physical and spiritual cleanliness. It gives one peace of mind, allows one to relax, knowing one is immune from diseases.

As far as handwashing with soap is concerned, purity has to do more with physical, personal, and spiritual cleanliness. This is in harmony with respondents' definition of hygiene. However, the relationship with handwashing is not direct. This motivational factor is important only as far as it highlights secondary benefits to washing hands with soap.



Box 4.6: Purity and Handwashing

The following are quotes from focus group discussions:

Positives

- “I have to clean not only my body but also my clothes so that my heart can also be pure and... cleanliness is next to Godliness and when you live well with the community, it does you a lot of good.” (Machakos district)
- “Being clean on the outside can make you feel clean on the inside.” (Kisumu district)
- “...when I am clean outside, even inside I feel clean, even within my spirit and my mind.” (Bungoma district)
- “This picture relates directly to my Christian way of life. It shows that the outside portrays what is on the inside for a Born-Again Christian like me. It befits the Christian of life.” (Bungoma district)

Negatives

- “At times I may sweat. Just taking a bath will not completely change the real me.” (Bungoma district)

4.7.7 Attraction

Box 4.7 has remarks about being “attractive and how it relates to handwashing”. This was seventh after nurture, comfort, disgust, fitting in, status, and purity. It related more to personal care, for example, bathing, changing clothes, and so on, after a hard day’s work; as well as being attractive to your partner.

As far as handwashing with soap is concerned, attraction has to do with keeping hands clean to attract the opposite gender. However, this is perceived to be pseudo, as it is not a true reflection of the degree of cleanliness at the personal, physical, and spiritual levels.



Box 4.7: Attraction and Handwashing

The following are quotes from focus group discussions:

Positives

- “There was a time when I was going through a rough time and I was separated from my husband for some time. I found myself begging too much. So now that we are back together, I have seen the importance of taking care of him.” (Nairobi district)
- “The job which my husband does involves coming into contact with meat and, at times, [it is] meat that is just about to go bad.” (Nairobi district)
- “It shows that these two people have a good relationship because if the man left in the morning while they were not on good terms, when he came back in the evening the wife would not have extended her hands towards him.” (Nairobi district)
- “You are the one who has washed your hands. So you are the clean one, that man is not clean, so he would not know if you are clean or not to attract him.” (Bungoma district)
- “The baby you have, it is the husband who gave you. It is good to look clean to your husband so that both of you can get children.” (Kisii district)
- “One day I was sitting outside with a friend. A man came where we were, then I left. Later my friend told me the man asked: ‘Who was this woman sitting with you? Her clothes are clean. Where does she work?’ Then my friend told him, ‘This woman does not work with a mzungu (white man), she just likes to be clean... she just stays in her house’...” (Kisumu district)

4.7.8 Overall Motivational Concept Ranking

Based on the above insights, emotional benefits have to do with purity, fitting in, status, and comfort. These are further related to one having “peace of mind, knowing that by washing hands with soap, they are contributing to the well-being of their family (preventing diseases)”. Also when “clean”, one feels “attractive, acceptable, recognized, confident, and earns respect from the community... you look rich... many people think you need money to be clean,” said someone in Kisii district. Another comment was: “At times you might attend a baraza (community meeting); when you are clean and tidy, you will be recognized and you are even given a chance to serve visitors.” (Mombasa district)

On the other hand, functional benefits are related more to “disgust”. Toilets are believed to have the most germs. As a result one needs to maintain high hygiene standards to prevent infections. Water and soap are core tools. The use of soap is seen as a preventive measure (disinfecting). For instance: “It will be easy to keep diseases away and the expenditure on treatment will be low. Also, if you get visitors you get the required respect from them and you will definitely get first priority in many things.” (Mombasa district)

“I am reminded mostly of shopkeepers who do not wash their hands despite the kind of job they do. I remember a time when I had gone to buy biscuits from the shop near [my] home. When I got to the shop the owner was not at the counter and two or so minutes [later] she appeared. When she was giving me the biscuits I realized she had feces on her hands. In disgust I asked her why she did not wash her hands even after using the toilet. Then she asked me who told me she had visited the toilet. I did not buy the biscuits.” (Machakos district)

4.8 Barriers to Handwashing

A wide variety of barriers to the practise of handwashing with soap came through from the behavioral trial interviews and in-depth interviews of key informants. Some barriers to handwashing are discussed below.

Physical barriers

(a) Poor sanitation infrastructure

Overall, there is poor sanitation in most regions. Core

issues affecting sanitation include few toilets or latrines, poor or no sewage systems, and poor flow of water leading to use of water believed to be contaminated. Some comments in this regard were:

- “Toilets must be put up and this has been a directive from the Chief.... everyone who has a home or is planning to put up a home must build a toilet. If they do not have a toilet the premises will be pulled [down]. The Chief has been discouraging flying toilets.” (Women’s leader, MYWO, Kisumu district)
- “The digging of rubbish pits—people have not done it well.” (Maendeleo ya Wanawake Organization leader, Trans Nzoia district)
- “The main barrier is the shortage of water..” (Chief, Trans Nzoia district)
- “There is need for sensitization on hygiene in the community... The dogs should also be well taken care of as they have a tendency of entering the kitchens often...” (Assistant Chief, Nyeri district)
- “We do not have septic tanks... dirty water comes from this compound, goes to the roads... what they have not taught us is that each person should have a hole dug in his compound to act like a septic tank to tap dirty water...” (Women’s group leader, Kisii district)

Absence of enough toilet facilities has led to sharing of the limited toilets or others opting to use the bush, which are far from the households. Further, water shortages limit the use of water. This makes behavior change a challenge, as more people are likely to wash their hands with soap when it is convenient.

(b) Water shortages

Some areas, as noted earlier, experience prolonged shortage of water. In Machakos, water is a precious commodity and people walk for long distances to fetch water. Others have to buy it from vendors in the prevailing economic hardships. Therefore, usage of water for handwashing is considered a waste; recycled water is used. As one comment shows: “You might have soap and lack water for use, this might become a hindrance to you... One cannot afford to buy soap although they may have water...” (Behavioral trials, Bungoma district)

(c) Convenience

Convenience of accessing soap and water is important in handwashing. Lack of convenience may arise due to location of soap, water shortages, location of toilets in the households, and the site where the risky juncture occurs.

• Location of soap

Again, the BHT interviews and observations revealed that there is no specific location for keeping soap for handwashing purpose in most households, as these examples illustrate:

- “At first I kept it inside a polythene bag on top of my box in the bedroom. After it became smaller I removed it from there, I got a small plate that I do not use and I kept it on top of a wooden shelf in the bedroom so that the children do not make it dirty. I kept it on top of the box so that I am the only one who could reach it.” (BHT, Nairobi district)
- “It stayed in the polythene bag for three days because first I used it for bathing, then I washed the baby so it stayed there for a long time but from yesterday I removed it and kept it on the plate. The plate is waterproof and other people can easily reach it but I do not want the children to misuse it.” (BHT, Nairobi district)

According to the observations during this study, especially during behavioral trials (BT), the soap is kept in places which are not visible, such as under the bed or other furniture (for people living in one-room houses in urban areas) and on shelves above eye level for people living in rural areas. This creates a barrier to washing hands with soap.

HWWS adoption requires presence of soap and water to act as stimuli. During the BT interviews, it was evident that the presence of soap and water increased incidences of usage. This was even more evident during the key junctures (after a visit to the toilet and before eating). Analysis of observations at handwashing sites revealed that primary caregivers who washed hands were likely to have water and soap at the handwashing site. The presence of soap at the handwashing site facilitates HWWS.

• Location of toilets in households

Most toilets in rural areas are located at a distance from the main house. Handwashing sites in most households were outside the kitchen or main house. Distance reduces the chances of handwashing after using the toilet.

• Lack of water and soap at site of risky juncture

In rural areas most mothers carry children under five with them to the farm. They change diapers and feed children at the farm. At such junctures there is no water or soap at site. Therefore, even when the mother knows it is good to wash her hands she may not be able to do so due to lack of water and soap where she is. In other cases, mothers also change diapers at night. Consider the following comments:

- “Yes, there were times when I am in the shamba (farm) with Pati and he defecates... I wipe him and continue digging... Nothing much... I felt guilty for sometime... I have been given soap to wash my hands but I keep forgetting. But after a while I got

Table 4.15: Access to Water and Cleansing Agents

		Soap users	Non-soap users
Was water available at the handwashing site?			
	Yes	64%	52%
	No	33%	45%
	No observation	3%	4%
Was there a cleansing agent at the handwashing site?			
	Yes	51%	24%
	No	47%	75%
	No observation	2%	2%

used to it.” (BHT, Nyeri district)

- “In my case, I may have changed the baby during the night and I did not wash my hands so the only time I can do it is when I wake up.” (BHT, Kisii district)

Psychological barriers

(a) Cultural beliefs

Communities in Western Kenya (Kisumu, Bungoma, and Kisii) have taboos that restrict sharing of toilets by adult male and females. Physical toilet facilities are restricted to males (head of household). As a result, most children and mothers end up using the bush. Distance from the bush to handwashing facility results to higher incidences of forgetfulness.

(b) Value attached to soap

Broadly, across all regions, soap is a valued commodity. Use of soap for handwashing takes less priority. Soap is preserved for household chores (washing clothes and utensils) and personal care (bathing). Handwashing is most important before meals and after toilet use to a lesser extent. People are likely to use water only in such cases. For example, “Let me say it was a hard habit to pick up because I was not used to washing hands with soap at all times. Many times I forgot to use the soap but the one I rarely forgot was after using the toilet because... I am used [to that], though I washed with water only. But as days went by I got used to washing with this soap.” (BHT, Nyeri)

Again, more households are compelled by the need to “protect the soap” from wastage, damage (excessive heat from fire or sun) and demand. Many end up hiding the soap (“under the table”, “on the window sill”, or “on top of a tree trunk”), which makes access difficult. Some other comments encountered were:

- “[It was] kept on top of the cupboard to avoid wastage... [otherwise] children play with it.” (BHT, Kisumu district)
- “It was the only soap in the bathroom, so I had to remove it to prevent wastage... many people have bathed with it... it has washed many dishes and clothes.” (BHT, Kisumu district)
- “There was always someone touching it.” (BHT,

Nyeri district)

- “[It was] kept in very special places... like where visitors sit.” (BHT, Nyeri district)
- “Soap is for a different social class.” (BHT, Nyeri district)

(c) Perfumed soap

Some women felt perfumed soap was a turn-off for men; they therefore did not participate with the rest of the family in the handwashing activity. Perfumed soap is discouraged while handling food or handwashing before eating. As one woman said, “My husband does not like soaps that smell, so he did not use it.” (BHT, Nyeri district)

(d) Lack of commitment by community leaders

Previous campaigns on public handwashing that involved community leaders showed lack of commitment by leaders as well as lack of transparency in management of behavior change promotional materials. Consider this example: “After the visitors came with the promotion on hygiene, the people of Kaisagat were not happy because there were some conflicts of interest amongst those people, especially the leaders. The other challenge is that when the promoters came with some materials, like soap which were to be distributed equally to all households, a few leaders took them to their homes and sold [them]... which was not fair. But I liked the promotion because I remember even last year they constructed a very nice toilet for me. They were constructing toilets for some households.” (MYWO leader, Trans Nzoia district)

(e) Beliefs

Some believe handwashing is time consuming and expensive; while others believe that harmful germs are acquired from dirty physical surfaces, such as “soil, charcoal, feces, hands, toilet walls, brooms, hoes, and so on” (mentioned across all regions).

Some believe that aloe vera, ash, sand, and stone can substitute soap. For instance, “They say aloe vera has anti-bacterial benefits that are useful when bathing.” (Nyeri district)

There is also a perception that handwashing is only important after a long call. For instance: “It is not a must to

wash hands after a short call. Men are the ones who must wash hands after short call; they easily come into contact with many things, but women squat and don't necessarily need to wash hands." (BHT, Bungoma district)

Some mothers also believe that the stool of their children is not harmful to the mother. For instance: "The stool of a child has never killed the mother." (Nyeri primary caregiver)

Poverty

Some respondents believe that handwashing with soap is a preserve of the rich. The overall majority (97 percent) of households had soap. However, 6 percent of respondents in Bungoma had not used soap the previous day due to lack of money. In addition, soap is prioritized for bathing, laundry and washing dishes. As this comment puts it, "Poverty is also another barrier because due to lack of money one cannot purchase soap. Most people... depend on the contracts to buy food and not soap." (BH, Nairobi district)

4.9 Communicating with the Community

4.9.1 What Channels are Effective?

Both informal and formal communication channels are effectively passing information to the communities.

Radio, health centers, and community health workers are the most credible channels of information on hygiene.

Radio has the widest reach among primary caregivers in case of national campaigns. Radio listenership is quite high: 78 percent claimed to have listened to radio the previous day; 84 percent claimed to own a working radio at the time of the interview. However, it is important to note that according to the field observations, the radios were owned by men and they controlled the channel listened to. This makes it essential to use other channels which are effective in reaching female caregivers.

Overall TV viewership was 31 percent—going by previous day activities. TV viewership was mainly concentrated in the cities (Kisumu, Nairobi, and Mombasa). Only 36 percent claimed to own a TV.

Informal channels that the campaign can consider using, especially in the rural areas, are (a) peer influencers; (b) religious institutions; (c) women's groups; and (d) authorities through barazas. Market places, places of worship, and hospitals are prime areas to reach caregivers

A campaign carried on in schools can trickle down to the community—17 percent of the women claimed that school children are a source of information. This was high in Trans Nzoia and Bungoma where the Ministry of Health has initiated a hygiene and sanitation program in schools.

Table 4.16: Communication Channels

Media vehicles	Within the community	Outside the community	Immunizations	Hygiene
Friends and neighbors	65%	46%	26%	21%
Radio	49%	60%	48%	44%
Place of worship	44%	28%	29%	27%
Health centers	33%	13%	48%	65%
Chief	32%	25%	20%	10%
Village elders	32%	20%	11%	7%
School children	31%	19%	23%	14%
Women group meetings	26%	22%	15%	22%
Television	19%	24%	21%	20%
Community health workers	16%	8%	31%	33%
Market vendors	13%	13%		

4.9.2 Appropriate Campaign Language

The study established that best spoken language is dependent on region. According to the study, 24 percent claimed that Kiswahili was their best spoken language while the rest were split across their mother tongues.

Only 4 percent claimed that English was their best spoken language. At the national level, Kiswahili is the best campaign language to use—98 percent claimed that they can understand Kiswahili. It caters for tribal differences and illiteracy levels. However, the campaign could also consider local languages for informal channels and vernacular FM stations.



SECTION THREE: The Schools' Study

5.0 Sanitation and Hygiene in Kenyan Schools

5.1 Background

Following the implementation of Free Primary Education (FPE) in 2003, sanitation and school infrastructures have been severely constrained. According to the Economic Survey, 2006, school enrollment increased from 5.4 million children in 2001 to 7.6 million in 2005. The expansion of facilities has been slow compared to this growth in enrollment. Existing school infrastructure has also been suffering from a lack of investments over a number of years. Most schools have overcrowded classrooms and inadequate water and sanitation facilities. The requirement for additional investment in primary school infrastructure is particularly acute in urban slums and the poorest areas in Kenya

The school toilet standards are way below the recommended international standards. A rapid assessment in public schools in Nairobi, Machakos, Kajiado, and Kiambu districts in 2004 revealed a toilet ratio of 1:64. The toilet ratio in Mombasa Municipality public schools is 1:333. This is way below the international standard of 1:25 for girls and 1:35 for boys (with urinal).

According to discussions with members of the School Infrastructure Management Unit (SIMU), there is a lack of comprehensive data on the number of schools in Kenya with running water and handwashing facilities. However, an audit of the 1,041 schools revealed that only a negligible proportion had handwashing facilities (possibly as low as 5 percent). The rapid assessment mentioned above revealed that over 90 percent of schools in rural Kenya lack a source of safe water and do not have any handwashing facility. According to the Mombasa Municipality, less than 50 percent in Mombasa are connected with piped water system while 20 percent must use water from contaminated wells. This is despite the fact that the UNICEF Kenya office has been working with the city council to improve sanitation in schools.

Other than the fact that toilet facilities are inadequate and overstretched, most are dirty. An observation of schools where this study was carried out revealed the pathetic conditions of the toilets (see photographs in Appendix C). The toilet floors were soiled with feces and wet with urine. Most girls' toilets and urinals had a strong stench. Some had urine collecting in the corners, other had feces on the walls. This poses a serious health risk for children considering that some children in rural areas go to school bare-footed.

The government has come up with the School Infrastructure Improvement Grant (SIIG) in which 1,041 schools were identified as beneficiaries (100 schools per district). The selection of schools was based on current poverty constituency indices compiled by the Central Bureau of Statistics (CBS) and physical infrastructure conditions and enrollment statistics from the Ministry of Education (MoE). Handwashing facilities have been incorporated in the infrastructure.

Some schools, as in Kirinyaga district, have water but poor sanitation. They have received funding from JICA to improve the facilities. WHO and UNICEF are currently in the process of providing water facilities to selected schools. CARE is also working in Nyanza to improve access to water in schools.

According to the MoE, handwashing falls within the scope of sanitation and hygiene. It needs to be packaged as such for acceptability, especially amongst MoE stakeholders. Therefore, handwashing campaigns in schools need to be integrated with other existing programs, such as deworming.

5.2 Handwashing Initiatives in Schools

Network for Water and Sanitation (NETWAS), UNICEF, and African Medical and Research Foundation (AMREF)—in partnership with other stakeholders such as the Ministry of Health—have established initiatives in schools. These initiatives are, however, not specific to handwashing but to hygiene in general, and have been implemented through

the formation of WASH and Hygiene clubs in schools. The organizations also coordinate seminars for leaders of these clubs and teachers. Their initiatives include (a) using leaky tins in areas with a shortage of handwashing facilities; and (b) asking children to carry water in the morning to cater for water shortage in schools. However, handwashing with soap (HWWS) has not been emphasized, except in Olympic Primary School which did try the initiative but discontinued it in the face of challenges.

A review of the initiatives provides the following lessons:

- Such an initiative should consider soap in liquid form rather than as a bar or powder.
- There is need for improvised soap dispensers to reduce wastage of soap.
- There is need to involve the Ministry of Education to recognize HWWS in schools as an important step towards safeguarding the health of the children. Currently, the Ministry has undertaken other initiatives, such as deworming, which has an association with handwashing.
- HWWS cannot work in isolation; it requires to be integrated into the whole concept of hygiene.
- Teachers and school administrations need to buy into the idea in order to continuously promote the initiative.
- Teachers supporting the initiative should receive recognition, not necessarily monetary. Currently the effectiveness of the clubs is decreasing due to

a lack of support by teachers who perceive it as an addition to their workload.

5.3 Justification of the School Study

Primary school-going children were considered a special target group in this study. Since habits acquired while one is young are likely to be carried over to adulthood, intervention in handwashing behavior would have a ripple effect for future generations. Handwashing with soap is part of the concept of hygiene, which forms part of the social studies syllabus in primary schools. Children spend most of their active hours in a school environment and may also have different motivators and barriers to handwashing. The study, hence, sought to understand their handwashing behavior in the school environment.

5.4 Objectives of the School Study

The objectives of the school study were to:

- Obtain a baseline of current handwashing practices in schools;
- Understand children's perception of dirt;
- Understand the risky hygiene practises of children;
- Learn from a small trial of handwashing in schools;
- Identify motivators and barriers to handwashing with soap; and
- Determine how best to communicate handwashing messages to them.



6.0 Methods Used in the School Study

6.1 Overview of Methods

The study utilized both primary and secondary data across several methodologies. The study borrowed heavily from the methods used in the Uganda study (Formative and Baseline Survey on Handwashing with Soap, 2007). A summary of field methods utilized in this study are listed in Table 6.1.

6.2 Selection and Description of Schools for Study

The school study was carried out in 11 public schools in the districts selected for the community study. Each district had one school, except the cities which had two schools. The rationale for two schools in the cities was to represent both the middle class and the lower class. The selection of schools was based on availability of water and handwashing facilities. (See Appendix A for a description of the schools targeted.)

Table 6.1: School-Based Study Methods

Method	Sample	Description	Data
Participant observation	Eight researchers	Two observers (one male and one female) were attached to one school; their special focus—observe the behavior of children and adults, as well as document school facilities, materials, and instruction practices.	Field notes (N = 8)
Structured observations before placing the soap	First 20 boys and 20 girls observed on one day per school	Two observers (one male and one female) observed the handwashing behavior of children after toilet use during break time on their first day in the schools.	Observation sheets (N = 22 × 20 = 440)
Structured observations after placing the soap	First 20 boys and 20 girls observed on the last day after placing the soap	Two observers (one male and one female) observed the handwashing behavior of children after toilet use during break time on their last day in the schools.	Observation sheets Pre = 380 Post = 376
Focus group	Three groups per school	Focus groups were conducted with children in the study classes to understand their values, aspirations, perception of dirt, and handwashing in the hygiene hierarchy.	FGD transcripts
Baseline on student	The whole class in upper primary	A simple one-page questionnaire was administered to the whole study class in upper primary.	
Behavior trials	Whole school but with special focus on the study classes	Soap was placed for the whole school for one week. Three different types of soap were placed: perfumed bar; non-perfumed bar; and powder soap.	Debriefing notes, teacher FDG transcripts
Drawing	One whole lower class	Children were asked to draw pictures of risky hygiene practices; then 10 individuals of each sex from each class were selected for debriefings to explain the pictures.	Drawings, debriefing notes (N = 80)
Money game	Four children per school (two boys and two girls from upper class)	Each child was given a photocopied KES 1,000 ⁶ (US\$14) note and was asked to write, on a form, how they imagined they would spend it; then a group debriefing was held to talk about the different articles.	Money form, debriefing notes (N = 48)
Social mapping	Upper and lower study classes	A focus group with only one objective of grouping the social networks.	Social maps and debrief notes

⁶US\$1 = KES 68.75 (as of August 30, 2008). Conversion rates are from http://coinmill.com/KES_USD.html; all conversions in the text are approximate. (KES stands for Kenyan Shillings.)

7.0 Results

7.1 Baseline Behavior of Children in School

The majority of the students observed (72 percent out of 380 students) did not wash their hands. Only one school in Nairobi had soap. The students who carried soap to the toilet were mainly girls. Handwashing with soap in this school was influenced by WASH clubs' initiatives. Similar initiatives also existed in Bungoma and Trans Nzoia. However, handwashing in these schools was with water only. In Mombasa, there is a strong handwashing culture after using the toilet, based on Muslim religious practices. None of the kids washed their hands at all in Machakos, Nyeri, and Kisii.

Table 7.1: Handwashing Behavior in Schools before Placing the Soap

	Total	Girls	Boys	Bungo	Kisii	Kisumu	Macha	Msa	Nbi	Nyeri	Tran
Did not wash hands	272 (72%)	114	158	2	40	74	40	19	34	40	23
Washed with water only	101 (27%)	58	43	20	0	5	0	18	44	0	14
Rinsed one hand with water only	5 (1%)	2	3	3	0	0	0	2	0	0	0
Washed hands with soap and water	2 (1%)	2	0	0	0	0	0	0	2	0	0
Total	380	176	204	25	40	79	40	39	80	40	37

7.2 Handwashing in the Community versus Schools

The levels of handwashing with soap after defecation at home are higher at home than in school, as indicated in Table 7.2. These findings are a reverse of practices in Uganda where the level of handwashing was higher in school than at home. The finding is explained further by the fact that 75 percent of children in upper primary claimed that they washed hands with soap more times at home than in the school environment. This did not change after behavioral trials with 75 percent claiming the same.

The findings suggest that children may be facing unique barriers to handwashing in schools compared to the home environment. Therefore, there is a need for a school-focused campaign to raise the levels of HWWS in the school environment.

In the community, out of the 635 events observed with school children before they ate, 56 percent did wash their hands but only 18 percent used soap.

Table 7.2: Handwashing After Defecation in the Community and School Environment

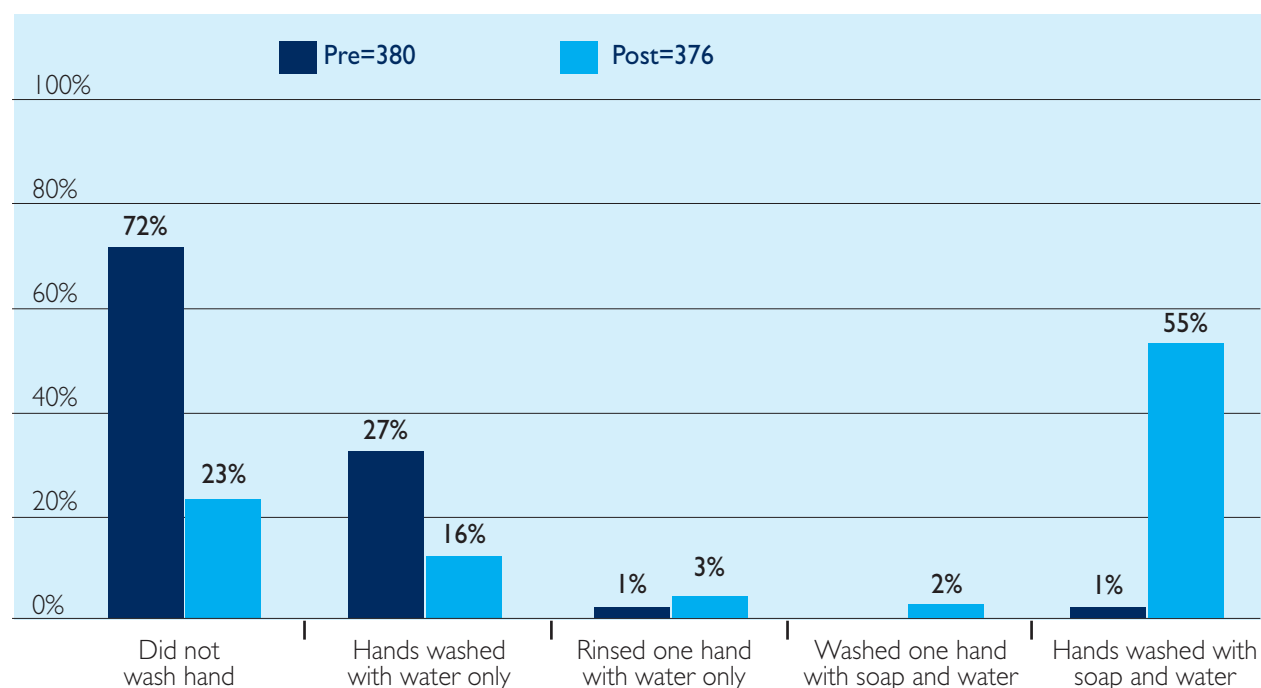
	School	Community
Did not wash hands	272 (72%)	259 (53%)
Handwashing with water only	106 (28%)	131 (25%)
Handwashing with soap and water	2 (1%)	125 (23%)
Total	380	515

7.3 Effect of Placing Soap in Schools

Unlike in Uganda, where soap and handwashing facilities were provided to the two study classes, this study provided the soap to the whole school. No special arrangement was made for study classes. This was based on the fact that the behavior needed to be studied in a natural environment. Soap was placed in the existing handwashing facilities for the whole school. This approach revealed some barriers to adoption of the behavior that would not have been identified otherwise. The behavioral trials in schools generated a lot of excitement among the children—some washed their clothes! Overall, handwashing improved to 55 percent from 1 percent. This may indicate that such behavior is easy to adopt in the school environment if access to water and soap supply is maintained.

During the exit interviews, the head teachers reported a positive response towards the campaign, stating that more children were washing hands after using the toilet

Figure 7.1: Handwashing Before and After Placing Soap



and before eating. The following comments are indicative of the children's attitude:

- "Before you came it was not very explosive as it is now... in the sense that children are now doing it with a lot of vigor." (Head Teacher, Kisumu district)
- "I have been observing how the children are behaving... I find all they want is to wash hands even after eating... even before they handle their books... the children you picked began to inspire others." (Head teacher, Mombasa district)
- "I have never seen something like this before, it was the first time... I thought of better hygiene for our children... they were more attentive to the visitors... something implemented here is likely to be practised at home." (Trans Nzoia and Machakos district)
- "It was an improvement because of the way our children have been brought up... some of them are not exposed to washing hands with soap... it was a new idea [in] the school... initially I was skeptical it would not work, then day by day I saw the children using [it]... especially those in lower classes." (Bungoma district)
- "Nowadays when the lower primary [children] go to the toilet, they really try to ask for soap... more kids wash hands than before." (Nairobi district)

There was a feeling that the practice of HWWS in school is likely to trickle down to the community. During the debriefing after the study in the school, the pupils reported that they had asked their parents to provide soap for handwashing at home after using the toilet. That the community will benefit is echoed in the following comments:

- "The school will spread the behavior to the community and back home." (Trans Nzoia district)
- "They will help the community... improve [it]; by practising handwashing with soap... we will have a healthy community." (Bungoma district)
- "They will not forget what they have been taught as they have done it practically... the children are likely to be role models at home. The practical part of it was good... will have an opportunity to practice it in school... however at home it may be difficult as the soap is kept away for other purposes. It will make the children become more in control of their hygiene, and agents of change." (Mombasa, Kisumu districts)
- "... I can see even the windows are now being cleaned... activity has supported what the UNICEF came and taught the community." (Nairobi district)

7.4 Knowledge, Perception, and Attitude towards Hygiene and HWWS

7.4.1 Children's Perception of Dirt and Use of Soap

From the children's perspective, dirt is "physical contact with germs or bacteria which are invisible to the naked eye". Surfaces where germs are likely to be present are: dirty surfaces, for example, toilet walls, floors (dust or mud); dirty objects, such as brooms, mops, cash notes, writing stationery, or contact with feces; working environment, for example, on farms; poor personal hygiene standards, for instance, long nails, dirty hands; and dirty water or food.

Given the definition of dirt, situations where one is likely to wash hands with soap are numerous.

Soap is associated with germ removal as it contains "some chemicals with ability to remove germs". Medicated soaps are top on the list. Other means for germ removal include use of insecticides "to kill insects that carry germs", and boiling or treating water.

"They say that you should get rid of germs after using the toilet, and avoid taking in germs before eating."

Despite the high association between soap and the removal of "germs from the toilet", soap is used more for hygiene maintenance (personal and physical environment), but not for handwashing. Warm water or scrubs (such as sand and stone) are perceived to be a substitute for soap by a few people.

7.4.2 Attitude towards Hygiene

Behaviors associated with hygiene maintenance include bathing daily (urban) or washing legs and the face (rural); good eating habits; drinking clean water; and a clean environment, for example, airing beddings (which gives "protection from lice").

Spontaneously, handwashing is not top-of-the-mind and, where mentioned, is associated more with "after visits from the toilet and before eating" (which is practiced by a few people in urban towns, especially girls).

The core driver towards daily observation of hygiene is to be acceptable to one's peers and to the rest of the school community. For example, a child says, "Bad odor can make people avoid you... it is good to avoid smelling [of] sweat and [avoid] other children laughing at me."

The outward indicator as to whether one is observing hygiene is being well-groomed, that is, "wearing clean clothes, maintaining short nails and hair."

On the other hand, the driver towards handwashing is to get rid of disease-causing germs, "though some children still eat while inside the toilet to avoid sharing with friends." (Toilets are believed to have the most germs.)

Insights

For children, motivators for hygiene maintenance are related more to attraction, status or fitting in. Handwashing with soap is associated more with its functional benefit, that is, removal of germs.

This finding is a true reflection of a child's personality—at their age, they are seeking recognition, identity, and acceptability. Communications and campaigns on washing hands with soap should emphasize this need.

7.4.3 Knowledge and Attitude towards HWWS

Children were asked to respond to 'Yes' or 'No' statements before and after the behavioral trials. This was intended to assess their knowledge and attitudes towards handwashing. Figure 7.2 summarizes the statements before and after placing the soap.

Although there was little practice of HWWS in schools, knowledge about handwashing was very high. There was a slight improvement in children's attitudes towards handwashing after the behavioral trials. However, handwashing is perceived to be practised more at home than in the school, despite the fact that children spend most of their active hours in school as compared to the home environment. This indicates that promotion of HWWS in schools is important.

Figure 7.2: Knowledge and Attitude Before and After Placing Soap

7.5 Motivators for Children Washing Hands

The motivations for children's handwashing can be determined by examining their debriefing forms after the behavior trials, focus group discussions (FGDs), and drama enactments. The attitude statements which were discussed further in focus groups also highlighted some handwashing motivators, which are discussed below:

Justification: The need to wash off germs that cause disease was the greatest motivator to wash hands, especially after using the toilet. This was drawn from the scenario presented in focus groups where children noted that those who did not wash hands are likely to fall ill or get worms. In addition, a child leaving the toilet was said to have a lot of germs on her/his hand. About 80 percent or more are aware of the importance of handwashing and that soap removes germs that cause diseases, even unseen germs, after using the toilet. Handwashing is covered under hygiene in social studies syllabus in all lower primary classes and pre-units.

Fun: Washing hands with soap was found to be fun and provided a form of play for the children. Children also washed their clothes with the soap, driven by the

excitement! According to the debriefing forms, after behavioral trials 81 percent indicated that handwashing with soap is not a boring activity. Although this is not a sustainable motivator in the long run, it could work at the initial stages of the campaign to introduce such behavior in schools.

Fitting in: Washing hands after using the toilet is the accepted code of conduct in school. The presence of other children washing hands acted as a trigger to handwashing. This was raised during the debriefing with children after behavioral trials. In addition, 84 percent of the children indicated that they admire clean people, implying the need to fit in. According to the group panels, children highlighted that they asked their friends whether they had washed hands after using the toilet.

Status: Clean and smart children are generally admired in the school, according to the social group mapping. This need to be liked is transferred to handwashing which is seen to fit into the concept of hygiene.

Habit: Some children, especially in urban areas, claimed to have picked up the habit of washing hands from parents or elder siblings at home. This is mainly a driver to washing hands before eating food and not after using the toilets. Sixty-eight percent of the children indicated in the pre-evaluation forms that parents reminded them to wash hands with soap.

Table 7.3: Children's Views on Practising Handwashing with

	Total	Nairobi	Mombasa	Kisii	Nyeri	Kisumu	Macha	Bung
Likes								
Free from bacteria or germs	166	27	24	16	9	50	15	25
Makes hands clean	142	14	29	10	12	17	4	56
Enjoys washing hands after using the toilet	39	7	7	13	0	6	6	0
Prevents many diseases	35	9	1	12	2	7	3	1
Leaves a nice smell on my hands	14	6	3	2	0	3	0	0
Just likes using such kinds of soap	14	1	2	0	0	7	4	0
Makes me excited after using it	11	4	0	1	2	4	0	0
Feels fresh	6	3	1	0	1	0	1	0
The soap softens the skin	4	1	1	0	0	0	2	0
Like the liquid soap	3	3	0	0	0	0	0	0
Makes hands shiny	3	1	1	0	1	0	0	0
Soap was given to use for free	2	0	0	0	1	0	1	0
Removes odor	2	0	2	0	0	0	0	0
Removes stubborn stains	1	0	0	1	0	0	0	0

Soap (by District)

Motivators for handwashing at school are emotional and functional. Functional motivators relate to germ removal and prevention of diseases as well as having clean hands.

At the emotional level, soap provided excitement and an opportunity for fun and enjoyment in washing hands. It also had an effect on the overall hygiene of the students: in some schools children washed their heads, sweaters, shirts, handkerchiefs, and socks after the soap was placed for three days. The behavior was triggered by the need to be clean overall. The smell of perfumed soap was also a trigger and motivator to wash hands

Other motivators to washing hands with soap in schools include role played by teachers, sensitization campaign by organizations such as UNICEF, and religious practices.

Role of Teachers

Head Teachers and other teachers are the main champions of handwashing with soap in the school environment. Teachers act as role models; they also provide leadership in hygiene related issues within the school.

- “We are putting a number of fountains for drinking, and for washing hands after [using] the toilet.” (Head teacher, Mombasa district)
- “When they have played and soiled their hands we tell them to clean them before they go to their various classes.” (Head teacher, Bungoma district)
- “There are four handwashing points near the classrooms and the students are not allowed to eat before they wash their hands.” (Teacher in charge of cleanliness, Nairobi district)
- “Hygiene is taught from Class I and is emphasized in the Sciences’ subject.” (Head teacher Kondele Primary School, Kisumu district)
- “I insist on washing hands even in front of Class 8... I would never eat before I wash my hands. They know I [am the first to] wash hands.” (Head teacher, Utange Primary School, Mombasa district)
- “Teachers act as examples by washing their hands so that the children may follow.” (Head teacher, Nyeri district)

Hygiene Interventions

Interventions by organizations such as UNICEF and AMREF, through the formation of WASH or HEALTH clubs have psychologically prepared the school community to adopt high hygiene standards. This is likely to encourage high adoption for handwashing with soap.

- “I believe in it myself. I once attended a course which was done by UNICEF and we were told that we can reduce diseases by 50 percent just by washing hands. Therefore I insist on that.” (Head teacher, Utange Primary School, Mombasa district)
- “At times UNICEF comes and takes the children for hygiene seminars.” (Teacher in charge of cleanliness, Nairobi district)
- “There are drawings on the walls in the school that demonstrate how to improve hygiene status.” (Teacher in charge of cleanliness, Nairobi district)

Religious Practices

Muslims are specifically encouraged to wash their hands after using the toilet.

- “Muslims do not use toilet paper so it means that they use their hands... and this means [that] they need to wash their hands with soap. It ensures that we are also clean. Apart from removing germs and bacteria it ensures that we are coming out of the toilet clean. When we wash our hands it is a sign of cleanliness and it also smells good.” (Head teacher, Kisauni Primary School, Mombasa district)

Broadly, urban schools are more likely to practise handwashing with soap compared to rural schools. It is also important to note that religious practise plays a great role in Mombasa.

- “...the culture of handwashing is inside them, and it is part of our religious traditions.” (Head teacher, Mombasa district)

The core drivers towards handwashing during the campaign were availability of soap, involvement of peers, practicability, and availability of water:

- “We always tell them in Home Science, but in the real sense we do not practise it... presence of water encouraged the students.” (Head teacher, Kisumu district)

Insights

The insights from teachers further support findings from the children. Communication strategies should involve teachers as they are children's role models. Teachers champion handwashing by agitating for the construction of handwashing facilities; providing leadership through example; and teaching the curriculum, which includes hygiene.

Religion is also an influencer of adoption of the habit (especially in Islamic communities).

There is need for consistence supply of soap and water (to act as stimulus) for the behavior to be sustained.

Peer pressure is also a motivator.

7.6 Barriers to Handwashing with Soap in Schools

The barriers to handwashing can be deduced from reasons why children in study classes refused to wash hands with soap. Overall, 81 percent of 587 children in the study, in upper primary classes, claimed that they used soap after placement while 19 percent did not use the soap. This indicates a positive change towards the practises of HWWS. However, there was a notable

difference between children in rural areas and those in cities. The major cities, Nairobi and Mombasa, had a lower uptake of handwashing with soap that was placed in schools (37 percent of children in each school did not adopt the behavior).

Barriers to handwashing with soap in schools can also be derived from debriefing forms, interviews with the head teachers and focus group discussions with teachers and drama sessions. Table 7.4 summarizes the dislikes in the debriefing forms. The barriers to adopting the new behavior were inadequate handwashing facilities, soap disappearance, lack of sustainable supply of soap, water shortage, lack of convenience, lack of support by teachers, and resistance to change.

Management of Soap: Disappearance and Wastage

This was a major challenge in the research and soap had to be replaced every now and then. A previous study by AMREF in schools had highlighted this as a challenge that had led to Olympic Primary discontinuing provision of soap. The use of a soap dispenser had been recommended, and Practical Action is working on a design that could be used for this purpose.

Table 7.4: Children's Dislikes on Practising Handwashing with Soap (by District)

	Total	Nairobi	Mombasa	Kisii	Kisumu	Machakos	Bung
Dislikes							
Bad smell	56	16	3	3	5	2	27
Soap was dirty or placed on a dirty surface	54	10	9	4	20	11	0
Overcrowding or conflicts due to sharing	32	16	5	7	4	0	0
People who don't wash their hands with soap	28	5	2	2	11	8	0
Smell of soap remains on hands	22	11	2	0	6	3	0
Washing with dirty water	16	1	0	10	3	2	0
Soap was not enough	11	4	0	0	7	0	
WHWS consumes a lot of time	11	5	1	1	4	0	
Becoming dirty even after washing	8	1	1	2	2	2	
Shortage or disappearance of soap	6	1	0	2	2	1	
Some people misuse it	5	0	2	0	3	0	
Water can sprinkle on books	3	0	0	3	0	0	
N =	587	129	119	62	117	44	
Note: N = Number of respondents							

- “One of the problems we encounter is that once soap is exposed there, some children tend to take it away.” (Teacher in charge of cleanliness, Bungoma district)

Physical Environment of Handwashing Area

There was overcrowding at the handwashing area due to inadequate facilities, since the population of public schools in Kenya is very high and the handwashing facilities are limited. There was a lot of pushing during break times, and this may have discouraged some children from washing their hands.

In addition, the poor maintenance of handwashing facilities is likely to cause accidents because of slippery surfaces. Most handwashing areas were muddy with poor drainage, especially in the rural areas. The soap also got dirty.

- “The number of children is high... there is congestion at the taps.” (Head teacher, Kisumu district, and Head teacher, Kilimani, Nairobi district)
- “It could be slippery and therefore dangerous if they (children) happen to step on it.” (Kilimani Primary School, Nairobi district)

Lack or Cost of Soap

Soap is perceived to be expensive and not catered for in the school budget allocations. Currently, parents believe that primary education is free and it would face a challenge to ask for contributions from them. This is in spite of the fact that parents also attach value to soap as indicated by 58 percent of the children (source: pre-evaluation forms) who said that parents remind them to take care of soap because it is expensive.

- “It is expensive... sometimes you may not be able to afford [it]. Sometimes the handling of soap is a problem if any amount is put at the water point.” (Head teacher, Mombasa district)
- “Lack of finance... we have poor parents, if you tell them to buy [then] only a quarter of them will comply, the rest will think that it is a way teachers have devised to get money from them.” (Head teacher in charge of cleanliness, Mombasa district)
- “If the children do not get soap this practice will die easily.” (Teacher, Kiarithaini Primary School, Nyeri district)

Lack of Consistent Water Supply

Most schools do not have a consistent water supply.

Other chores are thus likely to take precedence over handwashing because of such a scarcity. Some schools rely on water supply from vendors, whose source is not trusted. In instances where diesel-powered water tanks are used, the constant supply of fuel becomes a challenge.

- “We have no money to buy more containers...” (Trans Nzoia district)
- “We are dealing with 600 students...” (Mombasa district)
- “We need someone to lend us money to dig boreholes.” (Trans Nzoia district)
- “We need washing basins to avoid wasting time.” (Kisumu District)
- “Water is a problem... for example, as far as drinking water is concerned, we have to go to the plumber to come and repair it as it has broken down.” (Head teacher in charge of cleanliness, Utange Primary School, Mombasa district)

Resistance by Teachers

The behavior trial experienced resistance by some teachers and head teachers in some schools, especially in the cities. In other schools teachers reserved the right to keep the soap for their use. Some headmasters were not in favor of the idea of soap introduction as they felt it would be a waste of time. Resistance by teachers was driven by their perception of this being an addition to their workload and possible challenges in sustaining the supply of soap in school.

Positioning of the Handwashing Area and the Toilets

Handwashing facilities in most schools are located far from the toilets, sometimes even in the opposite direction. This led to some pupils forgetting to wash hands; they would rush to class immediately after using the toilet.

Perception of Handwashing as a Bother

During the debriefing, a few children felt that handwashing is inconvenient because it takes a lot of time. This was complicated by the queues at the handwashing area. This sentiment was also echoed during focus group discussions where the children said that at times they are too hungry to walk to the handwashing area to wash their hands before eating. They prefer to eat their food without washing hands. Handwashing is also not considered when the children are running against time, for example, during

break time (after using the toilet) and lunch time (before eating lunch).

Adoption of New Behavior: Challenges

It may take a while for children to fully adopt handwashing with soap. This is because of many reasons. One is existing preconditioned behavior where handwashing is done in a hurry.

- "...a culture of just touching the water with the fingertips, then the children go and eat, is hard to break" (Head teacher, St. Marks Nyabera, Kisumu district)

In addition, germs are perceived to be not only on the hands but on other objects, such as pencils and paper, as well. Children 'eat or chew' these objects. The children's habit of buying snacks and eating them on their way home from school is also likely to pose a challenge.

- "They eat paper and biro pens which carry a lot of dirt." (Head teacher, Nyeri district)
- "They sneak and buy snacks at the fence with no supervision and they chew a lot of sugarcane on their way to or from home where they have not washed their hands." (Teacher in charge of cleanliness, Kisii district)
- "Whatever has been practised at school will not be practiced at home as a result of soap not being there." (Head teacher, St. Marks, Kisumu district)

Parents as role models do not support teachers when it comes to educating children on the importance of washing hands with soap. This does not apply only to handwashing but to general hygiene and healthy issues. Such resistance is experienced mainly in rural areas. After the introduction of free primary education in 2003, most parents are hesitant in contributing towards any project in schools. Some head teachers in rural schools raised challenges they are experiencing in getting parents to cooperate in current health programs such as deworming, providing sanitary care for girls, fighting jiggers, and so on. They also fail to provide the basics for children, such as school uniforms and shoes, among other things.

- "Sometimes parents are not cooperative... there are some children who come to school from Monday to Friday without even bathing." (Nairobi district)

Insights

From the behavior trials and focus groups in schools, we have established that a participative learning environment

is most preferred. This should include the local and school communities. For such a campaign to work, endorsement by the Ministry of Health is vital. There is also a need to construct more handwashing facilities and have a system of maintaining them. This includes provision of soap.

According to headmasters, mobilizing parents to provide soaps in schools may be a challenge. This is due to the parents' belief that education is free; hence the government is responsible for providing all the facilities required. Therefore, consistent supply of soap in schools may require intervention by the Ministry of Education.

7.7. Communication with Children

7.7.1 Life of a Kenyan Child

During school days, day-to-day activities focus on personal hygiene, studies, and helping in light household chores such as fetching water and washing utensils.

During leisure time, more rural children are involved in household chores in comparison to children in urban areas where television and playing are prevalent. Most rural children play outdoor games compared to urban children who have more indoor games.

In addition, rural children are more involved in farm work such as looking after livestock and milking, especially boys. Children engage in religious activities over the weekend (Saturday madrasa classes for Muslims; Sunday school for Christians). Rural children are more likely to be engaged in daily observation of religious activities compared to urban children.

Insights

Given the above profile, we can easily conclude that socialization of children into adopting hygiene practices is passed on through practical chores. Based on findings from this study, it was found that girls in upper primary school have a higher tendency to wash hands with soap compared to boys (as evidenced in Mombasa, Nairobi, and Kisii).

7.7.2 What Drives the Kenyan Child?

Children's Role Models

Children identified their role models and, from the

reasons they gave, we were able to identify their values which include: popularity, success, and modernity; ability to impact positively on other peoples' lives; and to be loved or nurtured unconditionally.

Tangible Values (What money can buy)

Children were given a photocopy of KES 1,000⁷ (US\$14) and were asked to list what they would buy with the money. The objective of the exercise was to understand tangible values. Based on the findings, tangible values range from basic to luxurious. Urban children's values are skewed towards a luxurious lifestyle.

- **Basic values (functional benefits)**

These are items related to the basic necessities of life, which include: household items such as utensils and food; educational items such as stationery; to do with the house (that is, pay rent), source of

income (land or livestock).

- **Luxury values (emotional benefits)**

These are items such as new clothes (uniforms and shoes), toys, electronic or computer games, computers, ornaments and jewelry (Nairobi, Mombasa, and Nyeri), fancy wear, and automobiles (cars and scooters), and bicycles. These items depict an image of being "successful", that is, showing that "poverty has been conquered".

Broadly, the above tangible values enhance intangible values associated with role models. The core theme is the need to conquer poverty.

7.7.3 Perceptions of 'Cool'

Based on insights from focus groups with children, and through the money game, a definition of 'being cool' was

Table 7.5: Children's Role Models

Role models	Attributes admired
Media personalities (for example, Swaleh Mdoe)	Depict civilization, western lifestyle, represent success and dress in trendy manner (Nyeri and Mombasa districts). "Big house, car", sophistication... expensive furniture and electronics, toys", exposure "through lots of travel... education".
Politicians (for example, Raila Odinga and Obama)	Command attention, have high social standing.
Administrative officers (for example, D.O., Chiefs)	"Always the first people to know what is happening in the community".
International football stars (for example, Zinedine Zidane)	Command attention, have high social standing.
Professionals such as doctors, teachers, engineers, policemen, lawyers, religious leaders	Impact positively on other peoples' lives. Protects or defends the people—"it is a good job when you help reduce death". "Education changes the lives of others... teachers like seeing their students excelling in exams and making it in life... They dress smartly, are always clean, teach difficult subjects, live in good houses, and have power to control children" (rural children).
Advertisement models (for example, models in Omo, Sunfill, Dettol, and Jik), for the role played by the mother and child in the advertisements	Nurturing role of the mothers and happy children (urban children).
Parents, other siblings, and relatives	They show love and affection. "Helping each other with difficult sums, for example"; "are generous, polite, understanding, knowledgeable, and strong".

⁷ US\$1 = KES 68.75 (as of August 30, 2008). Conversion rates are from http://coinmill.com/KES_USD.html; all conversions in the text are approximate. (KES stands for Kenyan Shillings.)

formulated. 'Being cool' has to do with good personality (intelligent, strong, well groomed), good personal and health care, being materially successful, high interpersonal skills, and an outgoing nature, especially in games.

For urban children, the definition of 'cool' is derived from advertisements, especially the ones aired on television.

Table 7.6 summarizes the findings.

Rural children's definition of 'cool' is derived more from the school environment. It includes excelling in studies, having great interpersonal skills, and looking smart. Also 'cool' is behaving in a morally good way, for instance, avoiding alcohol or not going to discos.

Advertisements that portray 'cool' include Omo, Milo, Jik, Nakumatt, Power tab, Kimbo, Dettol, Blueband (urban children). Children's perceptions of various advertisements are illustrated below:

- Detergents (Omo, Ushindi, Toss, and Jik): Perceived to be solutions for dirty and stained clothes.

- Antiseptic soaps (Dettol, Protex): Ability of the soaps to remove germs after playing.
- Dental care (Colgate and Close Up): Sensitive to children's hygiene.
- Margarine (Blueband): Healthy product to consume as it has vitamins for active children.
- Cooking fat (Kimbo): Good food.
- Mosquito management (Supa net, Power Tab and Doom): Health management.

Insights

'Cool' has to do with a personality that is intelligent, well groomed, has high interpersonal skills, and good health care management. Soap plays an important role in bringing about this image (though this is more at a personal care level as opposed to handwashing). Antiseptic soaps are perceived to be 'cool' to use. This follows an emphasis on Dettol Cool communication, especially in Nairobi and Mombasa.

Table 7.6: Perception of 'Cool'

Attribute	Definition
Intelligent in studies	"In Maths and English".
High interpersonal skills	Express yourself and mingle with other children.
Respect	Achievements in sports, class.
Positive personality	Being generous, helpful, treats people equally.
Ability to defend yourself	In a fight, especially when fighting bullies.
Wealth	"You don't have to depend on anyone... have own bedroom with toys, video games, computer... good furniture... expensive toys... a car, motorcycle, bicycle... winning lottery".
Clean, well groomed, smart, and neat	Boys: "...being well dressed in new clothes that are well fitting and always ironed... wearing suits..." (Kanzu). Girls: "...wearing trendy clothes such as hipsters, one sleeved- or bare-back blouses... wearing jewelry" (more urban). Nairobi and Kisumu: trendy/fancy wear. Mombasa: modest, that is, long hijab, buibui, low-heeled shoes, well-kept hair, polished shoes, clean teeth "gives one confidence", new uniform.
Active or outgoing personality	Participating in sports and athletics (football for boys), dancing.
Healthy eating habits	Eating a balanced diet.

The school social mapping echoes similar findings.

7.7.4 Social Mapping in School

The social mapping exercise broadly revealed a school community that is segmented along personalities. Segmentation is along attributes such as pride, intelligence,

discipline, comradeship, and sporty—which are admired. On the other hand, negative personality traits such as greed, selfishness, a do-not-care attitude, and lack of respect for other peoples' property are least valued. Children fitting into different segments also tended to form friendship groups. Table 7.7 illustrates this.

Table 7.7: Summary of Social Mapping

Pride	<p>They are like peacocks, “beautiful, neat, tidy and clean”, show offs, confident about themselves, want to be noticed, tend to wear trendy clothes, and eat expensive snacks. They love lifestyle items (music, trendy clothes or food).</p> <p>Their pride is not a reflection of their true self as they are “pretenders... for example, befriending prefects because they are afraid to get into trouble”.</p> <p>Some are not serious in studies, tend to play more, and do things to get noticed, especially in class. “They walk with a swagger... make noise in class... eat in class... hit desks like drums... sing and laugh in class... have don't-care attitude”.</p> <p>For others, pride is the result of being gifted, for instance, they may be good in sports or intelligent.</p> <p>Within this group, one is likely to have separate groups for boys and girls.</p>
Intelligence	<p>These bright students, at the top of their class, enjoy studying and are liked by teachers.</p> <p>They also enjoy reading, traveling, and sports. To them, being ‘cool’ is working hard in class and celebrating good performance. They are also health conscious. They like sharing knowledge; are therefore referred to as “educators”.</p> <p>They have a calm personality and are generally helpful and merciful.</p>
Bully	<p>They are anti-social, arrogant, rowdy (“make bad jokes”), and physically strong. They enjoy aggressive games such as wrestling.</p> <p>Tight friendship exists amongst them. They were described as behaving like an army, criminals, or “like the Armenian brothers”.</p> <p>They are also perceived as being abnormal. They exhibit a stronger tendency of being selfish, mean, and secretive.</p>
Sporty	<p>They are good in games, are physically fit, and eat well. Their definition of ‘cool’ is derived from their love for sports.</p>
Buddy	<p>They have a strong sense of friendship and loyalty. The play groups are not gender sensitive. They protect each other, and enjoy studies and sports. Their definition of ‘cool’ is derived from enjoying their good performance.</p>
Thief	<p>They steal from others, even school stationery; they lack keenness in class.</p>
Greed	<p>They are also known as hyenas or gluttons. They like eating and playing, and are dirty students.</p>
Selfishness	<p>They are also referred to as beggars. They are mean and secretive, and eat in class.</p>
Discipline	<p>They are obedient and religious.</p>
Fat	<p>They are bright and clean but fat.</p>
Dirty	<p>They are also referred to as “forgotten ones”. They are not presentable, are ill mannered, and have poor hygiene standards (“don't brush their teeth”).</p>

ALWAYS WASH YOUR HANDS



SECTION FOUR:

Conclusions And Recommendations

8.1 Conclusions

- Handwashing behavior with only water is practised, especially after contact with stool, but the adoption of soap in handwashing needs to be scaled up.
- Awareness regarding the importance of washing hands with soap, especially after using the toilet, is high. There is, however, a weak relationship between handwashing with soap (HWWS), diseases, and their effects on the day-to-day lives of children and the entire community.
- In Kenya there is a strong culture of washing the face in the morning. HWWS in the morning after defecation is also combined with washing the face. Incidences of washing hands after using the toilet later in the day may be lower.
- Overall, 97 percent of the households have accessibility to soap.
- Washing hands with soap takes low priority at the household level. It is ranked fourth after bathing, washing the laundry, and washing dishes.
- Women are the key decisionmakers on soap usage at the household level.
- Ninety-four percent of caregivers believe that their family can be healthier if they washed hands with soap.
- Level of handwashing for primary school children after defecation at school is lower than at home.

Motivators

- The motivators and barriers to washing hands with soap in a school environment are distinct from the community level.
- Disgust, nurture, and comfort are the motivators of handwashing at the community level. Justification, fun, and fitting in are the motivators in the school environment.

Facilitators of Handwashing

- Convenient presence of soap and water came out strongly as a facilitator in both the community and school context.
- The role of teachers as a role model and reminder

of the importance of washing hands facilitated the adoption of the behavior. Active participation by teachers in the campaign will be critical to the adoption and sustainability of the behavior in schools. The reluctance of teachers to support the health clubs in schools has reduced the effectiveness of such clubs in promoting hygiene.

- Perfumed soap was a facilitator in schools.

Barriers to Handwashing

Barriers at the community level include:

- Lack of soap for handwashing. Due to poverty, soap is reserved for high priority usage: bathing, laundry, and washing dishes. Further, poverty minimizes the perceived risk of not washing hands with soap where the mother has knowledge.
- Lack of a designated place for handwashing in the community.
- Distance between the toilet and source of water.
- Perfumed soap.

Barriers at the school level include:

- Placement of the handwashing facilities in schools. The facilities are either very far from the toilets or located in the opposite direction.
- Size of handwashing facilities. They are too high for children in the lower primary classes.
- Overcrowding at the handwashing facilities. There were limited facilities to cater for the school population. This discouraged lower primary school children and girls from washing hands.
- Soap disappearance and wastage. Schools that had tried this initiative raised this as the greatest challenge the initiative faced.
- Poor, or lack of, water drainage of handwashing facilities. This led to accumulation of dirty water in the trough and spilling around the handwashing site.
- Lack of support from teachers. In some schools such an intervention is perceived as an addition to the workload for teachers who feel they are already overworked.

Potential Challenges in the Campaign

At the school level the foreseeable potential challenges are:

- Maintaining a consistent supply of water.
- Obtaining a consistent supply of soap.
- Managing soap.
- Maintaining a high level of interest in the new behavior until it becomes a habit.

At the community level, the potential challenges are:

- Ensuring the campaign is based on the day-to-day challenges that mothers face
- Facing resistance to change.

8.2 Recommendations

There is need for a community- and school-focused campaign. A school-based campaign should consider the following:

- The project should partner with other stakeholders who can prepare soap dispensers that minimize soap wastage. Practical Action is in the process of developing dispensers that are designed for handwashing in schools.
- The handwashing with soap campaign cannot work in isolation; it requires to be integrated into the whole concept of hygiene in school and existing related programs, such as deworming.
- The campaign should adopt an integrated approach to incorporate the Ministry of Education, teachers, and parents. This will ensure that soap is incorporated in the school budgets or a provision is made where the parents can be encouraged to contribute. The parents would support this

behavior at home.

- The communication program should be based on aspirational messages to connect with children and use peer group education. Existing clubs could be utilized to promote adoption of the behavior. However, measures must be put in place to ensure vibrancy of the clubs. Strategies of keeping the clubs active could be borrowed from the Boy Scout or Girl Guide Movement.
- The project should consider a reward system for teachers in charge of the campaign in school, which need not necessarily be monetary.
- The soap used in school should be in liquid form.
- For long-term impacts, the campaign should seek to influence the design of sanitation facilities to incorporate appropriate handwashing facilities which are conveniently located.

The community-based campaign should consider the following:

- The campaign should also promote the recommended way of washing and drying hands.
- Radio and interpersonal communication methodologies will be key in reaching mothers effectively.
- The campaign could consider different execution messages which will promote handwashing behavior at different junctures.
- Messages should capture the aspirations and dreams that mothers have for their children.
- To reduce the incidence of forgetting to wash hands after using the toilet, the campaign could utilize leaky tins that are placed next to the toilet.

Appendix A: Background Information on Schools in the Study

Districts	Schools	Total	Number of	Water source
Mombasa	1. Kisauni Primary	population 1,510: 771 girls, 739 boys	toilets 20: 10 for girls, 10 for boys	One working water tap, utility connected. Rationing can leave school without water for two or three days. Tank stores up to one day's water supply. Shares same compound with Mlaleo. Sanitary facilities in better state.
	2. Utange Primary	649: 369 girls, 310 boys	8: 4 for girls, 4 for boys	One working water tap, utility connected. One nonfunctioning borehole, which had been used during periods of water rationing. Security of source is an issue as surrounding community has little water and school compound is not fenced. Rural surroundings.
Kisumu	3. Kondele Primary	1,600		Has running water from a borehole with an electric pump. Unless the pump breaks down, the water runs 24 hours.
Nyeri	4. Kiarithaini Primary			The school had running water from a neighboring coffee factory water project. The taps are spoilt and water runs.
Bungoma	5. Masaba Primary	782: 401 girls, 381 boys	10: 6 girls, 4 boys	Located at the foot of Mt Elgon, the school has running piped water from Cheskaki water project. The school has 24-hour supply as it depends on gravity.
Kisii	6. Amosogo Primary	702: 394 girls; 398 boys	20: 10 boys; 10 girls	The school has two Roto tanks of 920 liters; one is strategically located at the end of the building, near the toilets. They depend on rain water but there is sufficient water due to rains.
Trans Nzoia	7. Gosete Primary	340: 160 girls; 180 boys	10: 6 girls; 4 boys	A larger Roto tank has been installed and depends on rain water. Pupils bring water on a daily basis in turns and empty in the tank. There is water on a daily basis.
Machakos	8. Katine Primary School	314	11: 5 girls; 6 boys	One tap in compound. Small break in pipe leading from tank occurred three days prior to the school audit and has rendered tap inoperative. School has funds to pay for repair and local repairman has been consulted with; work expected soon. The school has unrestricted access to working tap on adjacent S.A. Church compound. Water source for both taps is borehole on church compound.

Appendix B: Physical Observations of Hygiene Standards

A physical check of the sanitation conditions in the school environment revealed poor sanitation and low levels of hygiene. There were inadequate facilities to cater for the student population. Schools in Kisumu and Bungoma experience flooding during the rainy season, leading to deterioration in sanitation facilities.

(a) Mombasa

Kisauni: The toilets are not clean and have a foul smell. The handwashing facility has clean running water even though there is only one tap. The facility is next to the toilets “on the outside”. Children tend to crowd during break time, mostly to drink water and to wash their heads which cools their bodies because of the heat.

Utange: The toilets were under repair at the time of study. There is a tap outside the toilet with clean water supplied from a tank. There is no specific water drainage system, and water spills all over the ground.

(b) Kisii

Masaba DEB: The girls' toilets' floor and wall are not well made; they are made of 'unfinished' wood, which is not covered. Feces is visible and the toilets are wet with urine. The boys' toilets have mud walls and have a foul smell. Leaky tins are used for washing.

(c) Nyeri

Kiarithani Primary: The urinals are dirty but the toilets are clean. There are two handwashing facilities: one near the toilet and another near the kitchen. The one located near the toilet is too high for children in the lower classes. Further, it is wet and muddy, and has poor drainage. The taps are faulty and water runs throughout the day. Although there is no water shortage in this area, children use the dirty water in the reservoir to clean classrooms.

(d) Machakos

Katine Primary: The toilets are well maintained as far as cleanliness is concerned, but have no lids. The toilets are made of cement and are painted. The handwashing area has only one tap in the school with a small drainage space.

(e) Nairobi

Olympic School: The toilet is filthy and the stench

unbearable. The floor is clean, though the bowls are stained and broken; there is no water for flushing in the toilets. The handwashing facility is outside the toilet but there is only one functional tap fitted with a pipe that drains the water in a drum.

Kilimani School: The toilets are relatively clean as they are washed twice per day. There is no water in the taps so the students wash their hands outside at a facility near the canteen.

(f) Bungoma

Amasago School: The toilets are divided into cubicles without doors and have an open roof. Some toilets are dirty; with feces on the walls and urine on the floor. The boy's toilets do not have a roof and emit a foul smell. The school has two handwashing areas: one tap is located next to the head teacher's office while the other is next to the staff room. They are functional, but used by the teachers more. The location of the handwashing areas acts as a barrier to handwashing by children.

The school has leaky tins which were introduced following a cholera outbreak in the area. Handwashing with only water is practised in the school.

(g) Trans Nzoia

Goseta School: The situation of the toilet construction is fairly done as the floor is cemented, the walls are made of bricks, and the roof made of iron sheet. The boys' toilets are not clean. Most opt to urinate outside the latrines, leading to a strong stench. The school has one plastic tank that rarely has water and therefore students bring water from home.

(h) Kisumu

Kondele School: The toilets are very dirty and the stench is strong—such that it “can be felt 50 meters away”. The floor is dirty and wet with feces and urine. There is no clean water for handwashing (except for the dirty, murky water in a tank), which some students dip their hands in.

St. Mark School: The toilets are dirty and wet. Most students urinate outside the urinals (sometimes girls too urinate outside the toilets). This makes the toilets smell foul. The handwashing area, which is near the toilets, always lacks water.

Appendix C: Photographs of Conditions in Schools

References

- Central Bureau of Statistics (CBS) Kenya, Ministry of Health (MoH) Kenya, and ORC Macro. 2004. *Kenya Demographic and Health Survey 2003*. Calverton, Maryland: CBS, MOH, and ORC Macro.
- Central Bureau of Statistics (CBS) Kenya, Ministry of Planning. Economic Survey (2006).
- Curtis, V. C., and S. Cairncross. 2003. 'Effect of Washing Hands with Soap on Diarrhea Risk in the Community: A systematic Review.' *The Lancet Infectious Diseases* 3: 275–281.
- Environmental Health Project. 2004. Activity Report 128. *Planning Tools for the Nepal Public Private Partnership for Handwashing Initiative*.
- Hutley, S., S. Morris., and V. Pisana. 1997. 'Prevention of Diarrhea in Young Children in Developing Countries.' *WHO Bulletin* 75 (2): 163.
- Ministry of Education, Government of Kenya. 2006. Kenya Education Sector Support Program: School Infrastructure Technical Handbook. School Infrastructure Management Unit. Version One.
- Public Health Department, Municipal Council of Mombasa and UNICEF (Kenya Country Office). 2006. *Proposal for the Improvement of Facilities in Mombasa Municipality Public Primary School*.
- World Bank (WSP) and Steadman Uganda. 2007. *Baseline and Formative Research on Handwashing with Soap*. Unpublished research.
- World Bank and TMS International. 2006. *Understanding the Tanzanian Consumer in Respect to Hand washing with Soap*. Unpublished report.



WSP-Africa Region Office

World Bank, Hill Park Building, Upper Hill
P.O. Box 30577-00100, Nairobi, Kenya

Tel: +254-20-3226334

Fax: +254-20-3226386

wspaf@worldbank.org

www.wsp.org



REPUBLIC OF KENYA

