

IDEO.org Project Implementation Plan

November 28, 2012

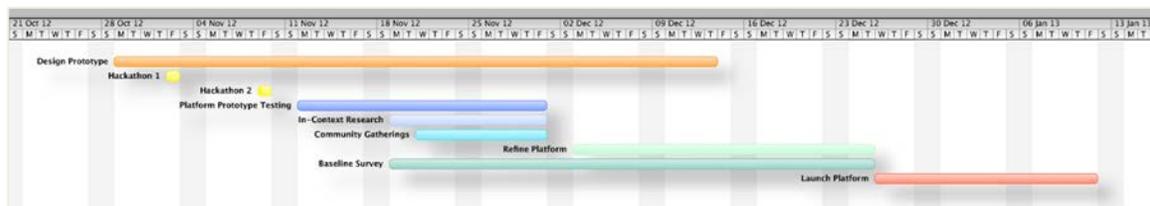
I. Summary

IDEO.org and Water and Sanitation for the Urban Poor (WSUP) are testing the hypothesis that a digital platform can recreate the success of Community Led Total Sanitation (CLTS) in an urban context. Through this pilot program, IDEO.org and WSUP will leverage existing technologies, such as online mapping, SMS, and social media tools, to create a prototype digital platform and use it to run a pilot CLTS program in Kumasi, Ghana.

IDEO.org utilizes the human-centered design process that is not entirely linear. The process is best thought of as a system of overlapping spaces, namely inspiration, ideation, and implementation. The number of revolutions through these spaces depends on the learning gained through early experiments. A prototype of the digital platform will be built and tested in Kumasi, Ghana in the first five weeks of the project. A second pilot phase will begin in January with the launch of a refined digital platform for WSUP's use in a larger CLTS program to continue through the remaining nine months of the project. Additional rounds of ideation and implementation may be required depending on the response and insight gained from both the prototype and pilot phases. In this way, the first half of the project will define the second while the continuous experimentation needed for innovation remains supported by the scaffold of regular reporting and evaluation milestones.

II. Timeline for Project Milestones

The first five months of the project are focused on designing, testing and launching the digital platform, as well as in-context research.



> Effective Date: 12 Sept '12

Final Impact Evaluation: 11 Dec '13 >

III. Project Milestones

Milestone 1: Design Digital Platform Prototype

The first iteration of the digital platform is a prototype developed for the in-context research phase in Kumasi, Ghana (Milestone 2). Following this in-context immersion, a second iteration of the platform will be produced and launched for use in the pilot of WSUP's larger urban CLTS program.

Digital Platform Prototype

The prototype platform emerged from secondary research and two gatherings of subject matter experts and technologists conducted in a hackathon format. Hackathons are a way to achieve rapid leaps forward in terms of design, concept and technical development. WSUP contributed remotely while IDEO.org secured partnerships to secure quality attendees, including Ushahidi, Social Coding 4 Good and VMware (a private-sector cloud computing and software engineering firm). IDEO.org was also able to draw on the strength of the San Francisco technology community to attract other notable participants, including volunteers from Cisco, Wikipedia, Code for America, Living Goods and many other local technology, design and social sector organizations.

Going wide with concepts

Our first hackathon convened over fifty minds in two Bay Area locations, including IDEO.org's San Francisco office and VMware's campus in Palo Alto. The IDEO.org team set the context for the ensuing eight-hour hackathon. The team led the attendees through a presentation on the state of sanitation in urban Ghana and provided a hands-on CLTS demonstration. A representative from Ushahidi also talked about distributed mapping projects. The six teams of hackathon participants were assigned to make complete platform concepts satisfying the following framework:

Collect: How might we gather information about open defecation?

Understand: How do we present open defecation in a way that drives action?

Act: What action do people undertake against open defecation in order to *Achieve* an open defecation free neighborhood reached through collective action.

This scaffolding was presented alongside a design constraint that part of the system be deployed on an open-source digital platform.

Clean Kumasi Platform

The IDEO.org design team distilled the best aspects of the six concepts that came out of the first hackathon into a composite prototype with the working title, Clean Kumasi. Three technical components underpin the Clean Kumasi platform: SMS, Facebook App and API/infrastructure. A fourth work stream focuses on visual identity, brand and messaging.

SMS: The SMS component serves at the direct dialogue with residents contributing their reports to the Clean Kumasi platform. The SMS component considers how certain messages will lead to others and how the IDEO.org / WSUP team can test different tones in communication from judgmental to highly positive to humorous (all in 160 characters or less). Other considerations within the SMS component include determining which mobile carriers and billing arrangements are the most advantageous for the user base in Kumasi.

Facebook App: The Facebook app component displays map visualizations of the sanitation status for various landmarks selected as part of the Clean Kumasi prototype. Importantly, the Facebook app also provides a community-building functionality with around these individual landmarks, each of which have their own Facebook page. The Facebook app weaves together conversations from SMS and social media to form an ad hoc public contributing to Clean Kumasi, a

public that can be convened for in-person CLTS facilitation and solution-oriented collective action. The Facebook app also serves as an outreach mechanism for those with a regular Internet connection, such as decision makers in government ministries or private sector leaders. Another emergent motivation for the use of the Facebook app is that smartphone service providers are partnering to offer Facebook on cellphones without data fees in Ghana.

API / Infrastructure: API/Infrastructure ties the SMS and Facebook components together. A key feature of the joined components is the ability to send messages to all contributors who have submitted mapping data to a related landmark. In this way, it is intended that disparate groups of people will be activated around improving the sanitation of important locations despite the heterogeneous mix of urban neighborhoods.

Communications Design: The communications design stream is concerned with the visual, brand and messaging design for the Clean Kumasi prototype and pilot. Based upon previous experience in the sanitation sphere in Ghana, IDEO.org and WSUP hold the development of a trustworthy brand as a major factor that will increase the likelihood of community participation in Clean Kumasi.

Milestone 2: Platform Prototype Testing, In-Context Research, and Community Gatherings

IDEO.org's design team will join international and local WSUP staff in Kumasi, Ghana for two weeks to prototype the initial digital platform and conduct community gatherings to launch the CLTS process.

The Clean Kumasi prototype as designed in San Francisco will need to be localized to the current device, carrier and social media ecosystem in the trial neighborhood. Light hardware purchase and setup must be done in country, as well as adapting other elements of the prototype as needed.

Neighborhood selection criteria

The Clean Kumasi prototype will be small-scale and run in a single neighborhood. IDEO.org and WSUP will explore several types of neighborhoods, including urban and peri-urban districts. WSUP's local office is based in Kotei, while nearby Santasi has also been suggested as a possible option. Ultimately, the team will review four main criteria as it selects a site:

1. Visible open defecation
2. Possibilities exist for sanitation solutions (existing public latrines, building new pit latrines)
3. Existing lines of communication with the community
4. Relatively high adoption of technology (SMS, smartphone and Internet)

Working with local groups and natural leaders

CLTS initiatives require participation from youth, children, women and men of varying income levels. In rural CLTS, triggering decisions are weakened when gatherings don't reflect the breadth of the community. The intention of the Clean Kumasi platform is to

solve for heterogeneous mixed urban neighborhoods by creating new ad hoc communities through crowdsourcing and communications links joined by SMS and social media. The program team will also be activating existing ties with existing on-the-ground groups relevant to the neighborhood ranging from community-based organizations to the Kumasi Metropolitan Authority (KMA.)

Establishing landmarks

The approach will be to establish a community-wide map of open defecation using the sanitation profiles of landmarks (such as schools, monuments, and existing sanitation facilities) selected in advance of the neighborhood launch. The reasons for using this approach are twofold. First, if open defecation is a common problem that is comparable in ubiquity to litter, then it makes it difficult to track specific instances. Utilizing this method, the system will test whether it is more feasible to solicit crowd input on the cleanliness and state of sanitation at a community landmark, such as a school, market, water source or church, rather than a generalized call to document open defecation generally. Second, landmarks assist with map literacy as most people continue to navigate by them rather than labeled roadmaps.

The team will lead multiple community visits with organizations described in the previous subsection. Multiple explorations will be undertaken to build a set of 15-20 landmarks that reflect the neighborhoods varied social dimensions.

Broader launch

Larger neighborhood meetings called to soft launch the prototype will follow these smaller, targeted meetings to set the landmarks. WSUP will lead these meetings, as these same local staff will be the ongoing relationship builders and pilot administrators. After the prototype runs for several days, another community meeting will be called to test the ability of leveraging the platform to assemble a cross-section of the community for CLTS triggering and follow-up activities related to improving the sanitation profile of landmarks, and by extension, the neighborhood.

Milestone 3: Refine Platform and Conduct Baseline Research

The initial in-context immersion in Kumasi, Ghana (described in Milestones 2 above) will allow the team to reassess what online and offline components need to be overhauled or enhanced to maximize community participation as the prototype scales to a pilot.

During this refinement stage, partnerships with local mobile developers and carriers will continue to be explored by IDEO.org and WSUP to ensure a sustainable pilot in regards to SMS bulk pricing. Understanding that WSUP's local staff will be administering Clean Kumasi, IDEO.org will also design and refine the digital platform for the staff's ease of use. This means testing and refining the system to hide its complexity behind easy to use, open and familiar technologies, such as Google Forms, Google Maps and Facebook.

IDEO.org and WSUP will also launch program evaluation during this part of the project. IDEO.org and WSUP will evaluate the program with hybrid qualitative and quantitative methodologies. The research will focus on behavior change for key program metrics. IDEO.org and WSUP will conduct an in-depth qualitative study with a cohort of up to ten

households whose knowledge, attitudes and behaviors related to sanitation will be tracked longitudinally for the year of the program. As part of our baseline research, we will also conduct quantitative observation on the volume of open defecation incidences in the community and the use/non-use of available sanitation facilities. Platform analytics will be used as the third measure to evaluate the digital inputs against offline behavior change and change in the sanitation profile of the community.

Milestones 4 to 7: Launch Platform, Conduct Ongoing Monitoring and Evaluation, and Complete Project Reporting

Following the refinement phase, the nine-month pilot phase will begin no later than January 12, 2013 with the launch of a refined digital platform for WSUP's use in a larger CLTS program to continue through the remaining nine months of the project.

Triggering ODF status

WSUP will trigger the pilot CLTS campaign, which will involve mobilizing the previously organized community groups, both through additional activating and campaign promotional materials, and rolling out the refined digital platform. The main expected outcome is a strong preliminary understanding of the urban CLTS program's potential to drive health outcomes, such as the maintenance of sanitation facilities, hand washing behavior, and investments in improved sanitation.

Ensuring community ownership and ongoing sustainability of the pilot CLTS campaign

WSUP will ensure sufficient community ownership over the campaign such that WSUP can then begin supporting it remotely and with the local team in Kumasi. IDEO.org will monitor the digital platform for participation and provide light online community management to support those participating. WSUP will have as-needed calls with local leaders to understand progress of the campaign on the ground and troubleshoot around any off-line components of the campaign that are not working as expected.

Revisiting milestones and outcomes

The first five months contain the bulk of milestones with ongoing support and monthly informal reports as WSUP runs the main pilot. During the nine-month pilot, IDEO.org and WSUP will collect data to identify opportunities to improve the campaign and understand whether or not milestones and outcomes are being achieved.

Based upon these findings, WSUP will determine whether or not to seek additional funding to further develop and scale the platform, based upon the effectiveness of the pilot program. IDEO.org and WSUP will complete a final report on the program that includes results and plans for further developing and scaling the program.

Distribution of open-source platform and learnings

Handbooks and trainings represent the aid community's efforts to codify and promote rural CLTS, while the digital platform created herein has the potential to represent a similar input for viral adoption of urban CLTS. IDEO.org aims to be constantly mindful of designing for and promoting reusability with the aid community. With this in mind, we will package our learnings and the digital prototype into an open-source format for the aid community to further develop, implement, and test the program. As one example, the

digital platform prototype has been developed as free and open source software (FoSS) drawing on other projects in the space of distributed mapping.

WSUP will maintain an informal network of leaders of urban CLTS campaigns that use the platform and will aggregate lessons learned from this program in order to advance the platform and its adoption. IDEO.org will also liaise with CLTS adopters and potential adopters to help them implement the program.

Clean Kumasi: Digital Platform Prototype Design (Milestone 1b)

Testing a Digital Platform's Ability to Recreate the Success of "Community-Led Total Sanitation" in Urban Communities

Purpose:

This document is in partial fulfillment of IDEO's contract with USAID (Grant No AID-OAA-F-12-00009) to test a digital platform's ability to recreate the success of "Community-Led-Total-Sanitation (CLTS) in an urban area.

Contents:

1. Synopsis of platform design
2. Description of hackathons
3. Platform design specs
4. Images and screenshots of final prototype

1. Synopsis of Digital Platform Design

The prototype platform emerged from secondary research into what has enabled and prevented success of past CLTS campaigns. The platform that emerged updated and digitized the best aspects of CLTS, including the ability to bring people together and mapping. The platform was designed and built from two gatherings of subject matter experts and technologists conducted in a hackathon format. On the technical architecture side, IDEO.org supplemented their team with a specialized mobile developer from [Hi Def](#). IDEO.org team of three designers developed user scenarios, refined the concepts and created the components of the system from signs to apps to community meetings that became known as Clean Kumasi.

2. Hackathons

Hackathons are a way to achieve rapid leaps forward in terms of design, concept and technical development. WSUP contributed remotely while IDEO.org secured partnerships to secure quality attendees, including Ushahidi, Social Coding 4 Good and VMware (a private-sector cloud computing and software engineering firm). IDEO.org was also able to draw on the strength of the San Francisco technology community to attract other notable participants, including volunteers from Cisco, Wikipedia, Code for America, Living Goods and many other local technology, design and social sector organizations.

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Hack to build

Our second hackathon brought together 30 people with a greater emphasis on building components of a complete system.

3. Description of platform design:

Three community-facing touch points comprise the Clean Kumasi system: Physical signage, Voice/Text Messages, Facebook Map App.

a. Signage: Signs were posted at community points of interest with an emphasis on unofficial dumping sites, including mosques, churches, public toilets and dumping sites. Signs solicited people to report via text message whether they saw human waste. We later revised the signs into local languages where human waste became the Hausa words *kashie* and *bangida*, and “toilet,” which is widely used euphemistically to refer to feces.

b. Voice & Text Messages: The voice and text message component serves at the direct dialogue with residents contributing their reports to the Clean Kumasi platform. Residents either send in a text message or call the number on the signs. Text messages get dynamically populated on the map and receive an automated response telling people how many others are talking about that site and referring them to the Facebook application. For now, calls are returned directly by a Clean Kumasi team member. Messages to gather for community meetings are sent across the voice and text message system.

c. Facebook App: The Facebook app component displays map visualizations of the sanitation status for various landmarks selected as part of the Clean Kumasi prototype. Importantly, the Facebook app also provides a community-building functionality with around these individual landmarks, each of which have their own Facebook page. The Facebook app weaves together conversations from SMS and social media to form an ad hoc public contributing to Clean Kumasi, a public that can be convened for in-person CLTS facilitation and solution-oriented collective action. The Facebook app also serves as an outreach mechanism for those with a regular Internet connection, such as decision makers in government ministries or private sector leaders. Another emergent motivation for the use of the Facebook app is that smartphone service providers are partnering to offer Facebook on cellphones without data fees in Ghana.

4. Images and screenshots of final prototype:

a. Signage

- Example of a sign, in this case posted at a dumping site near the Sakafiya mosque



SAKAFIYA

**DO YOU SEE
KASHIE, TOILET,
BANGIDA, SHIT?**

Text **YES SAKAFIYA**
or **NO SAKAFIYA**
to **0544-703024**

MTN users = 4 Gp | Non-MTN = 6 Gp

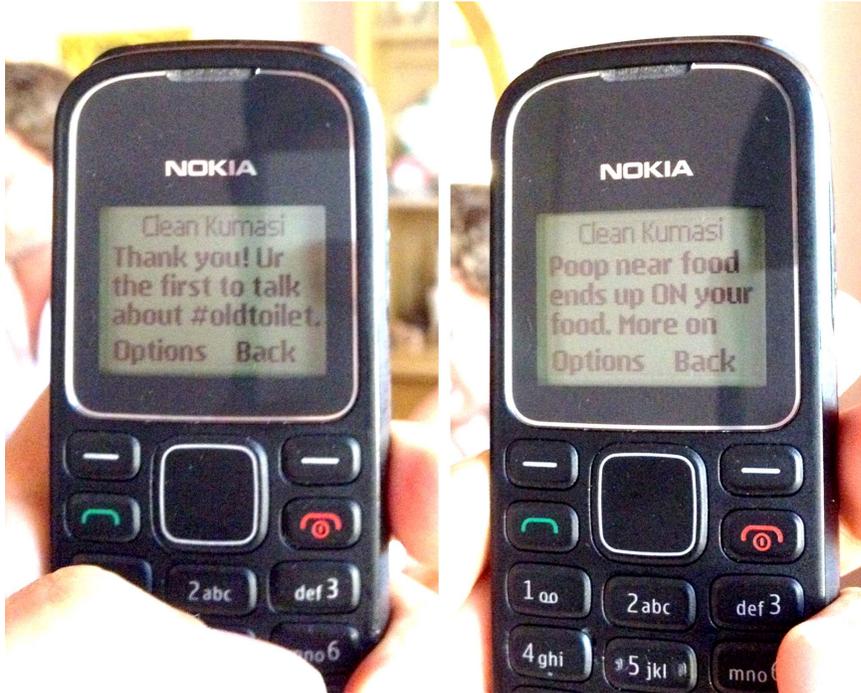


bit.ly/CleanKumasi



<p>LASTSTOP</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES LASTSTOP or NO LASTSTOP to 0544-703024</p>	<p>DUMP</p> <p>DO YOU SEE KASHIE, TOILET, BANGIDA, SHIT?</p> <p>Text YES DUMP or NO DUMP to 0544-703024</p>	<p>DUMP</p> <p>IS THERE BANGIDA AROUND HERE?</p> <p>Text YES DUMP or NO DUMP to 0544-703024</p>	<p>MASASA</p> <p>DO YOU SEE KASHIE, TOILET, BANGIDA, SHIT?</p> <p>Text YES MASASA or NO MASASA to 0544-703024</p>
<p>CENTRALMOSQUE</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES CENTRALMOSQUE or NO CENTRALMOSQUE to 0544-703024</p>	<p>SAKAFIYA</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES SAKAFIYA or NO SAKAFIYA to 0544-703024</p>	<p>SAKAFIYA</p> <p>DO YOU SEE KASHIE, TOILET, BANGIDA, SHIT?</p> <p>Text YES SAKAFIYA or NO SAKAFIYA to 0544-703024</p>	<p>STATION</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES STATION or NO STATION to 0544-703024</p>
<p>BOLATONGO</p> <p>DO YOU SEE KASHIE, TOILET, BANGIDA, SHIT?</p> <p>Text YES BOLATONGO or NO BOLATONGO to 0544-703024</p>	<p>ZIKO</p> <p>IS THIS PLACE DIRTY WITH KASHIE?</p> <p>Text YES ZIKO or NO ZIKO to 0544-703024</p>	<p>CLOSEDTOILET</p> <p>IS THERE BANGIDA AROUND HERE?</p> <p>Text YES CLOSEDTOILET or NO CLOSEDTOILET to 0544-703024</p>	<p>TAPS</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES TAPS or NO TAPS to 0544-703024</p>
<p>CHURCH</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES CHURCH or NO CHURCH to 0544-703024</p>	<p>BOLATONGO</p> <p>IS THIS PLACE DIRTY WITH TOILET?</p> <p>Text YES BOLATONGO or NO BOLATONGO to 0544-703024</p>		

b. SMS message



c. Facebook

WORKING TOGETHER FOR A CLEAN KUMASI

Use this map to educate your neighbors and promise to take action to clean up Kumasi!

FACTS
Stay healthy, share with your friends.

Uncollected human waste flows into water & causes deadly illnesses.

PROMISES
Join your neighbours and take action.

- I would like the people of Ayigya to be in cleanness. 1 week ago
- I will educate people to care about their health. 1 week ago

station
Aboabo Station, T-junction by Tafasoft Cafe

REPORTS
1 Dirty

FOLLOWERS
2 people like this. Be the first of your friends.

COMMUNITY TALK
Discuss, organize, solve.

LOCAL PROMISES
Join your neighbours and take action.

I would like to educate the public on how to keep the surroundings clean. 1 week ago

COMMUNITY TALK
Discuss, organize, solve.

- 3 comments
- Micheal Yenbil - Accra, Ghana**
Please people of Ayigya Zongo, let us try our best to keep the society clean reduce the spread of diseases around the society. keep Ayigya Zongo neat.
November 28 at 8:23am
 - Abdul Latif Faiz Robinho - Asanteman**
people of Ayigya try to keep the community.
November 28 at 8:26am
 - Nuhu Abdul Rahman**
pls people of Ayigya zongo try to keep the community clean. our health is important and our health is our everything.
November 28 at 8:22am

Clean Kumasi: Digital Platform Prototype Design (Milestone 1b)

Testing a Digital Platform's Ability to Recreate the Success of "Community-Led Total Sanitation" in Urban Communities

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Contents:

1. Original user-experience scenarios illustrating use of platform
2. Description and images of final platform prototype
3. Photos of concepting, deployment, community testing, and community meetings

* * *

1. Original user-experience scenarios illustrating use of platform:

The scenarios were designed in an early concept stage, based on concept work in the first hackathon and served as a basis for development in the second hackathon. These user scenarios have been rendered obsolete based on final platform design as detailed in section 2.

See attached pdfs:

- 2a_User_Experience_Scenario_INSIDER.pdf
- 2b_User_Experience_Scenario_SMS.pdf
- 2c_User_Experience_Scenario_FACEBOOK.pdf

2. Description and images of final platform prototype:

Three community-facing touch points comprise the Clean Kumasi system: Physical signage, Voice/Text Messages, Facebook Map App.

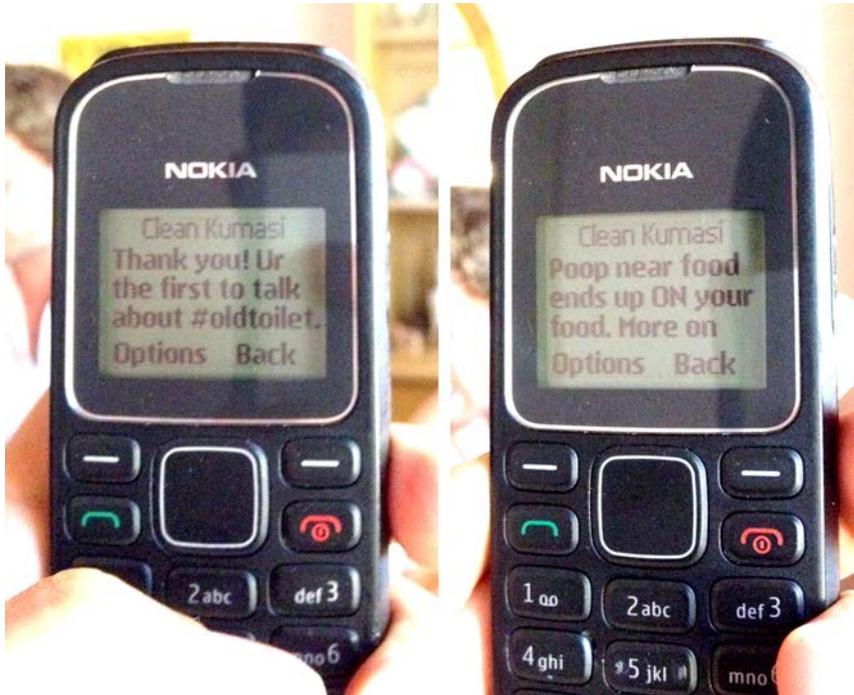
a. Signage: Signs were posted at community points of interest with an emphasis on unofficial dumping sites, including mosques, churches, public toilets and dumping sites. Signs solicited people to report via text message whether they saw human waste. We later revised the signs into local languages where human waste became the Hausa words *kashie* and *bangida*, and “toilet,” which is widely used euphemistically to refer to feces.

- Example of a sign, in this case posted at a dumping site near the Sakafiya mosque
- 14 signs deployed across 11 points of interest/landmarks



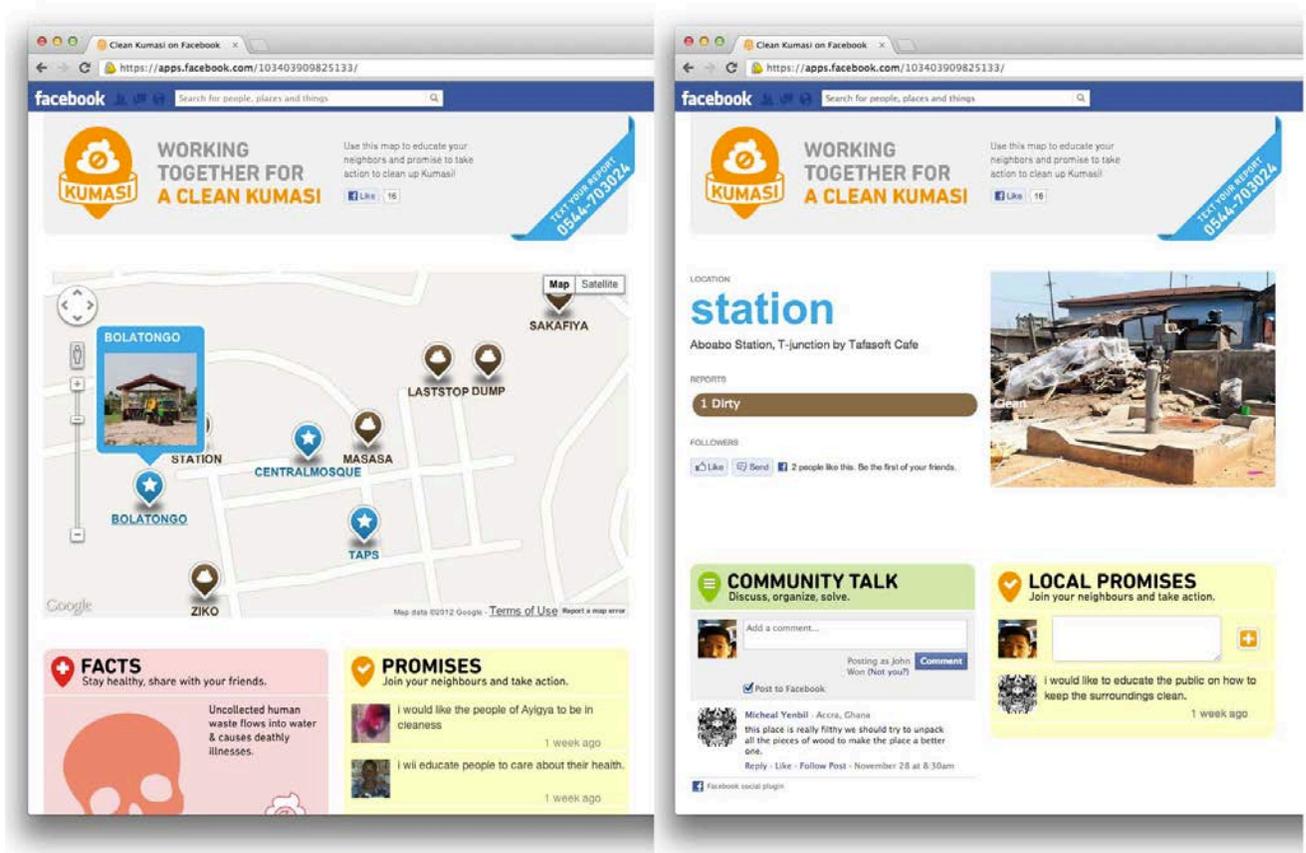
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- Response screens to test SMS message, featuring receipt acknowledgment and health fact related to water and sanitation



c. Facebook App: The Facebook app component displays map visualizations of the sanitation status for various landmarks selected as part of the Clean Kumasi prototype. Importantly, the Facebook app also provides a community-building functionality with around these individual landmarks, each of which have their own Facebook page. The Facebook app weaves together conversations from SMS and social media to form an ad hoc public contributing to Clean Kumasi, a public that can be convened for in-person CLTS facilitation and solution-oriented collective action. The Facebook app also serves as an outreach mechanism for those with a regular Internet connection, such as decision makers in government ministries or private sector leaders. Another emergent motivation for the use of the Facebook app is that smartphone service providers are partnering to offer Facebook on cellphones without data fees in Ghana.

- Facebook app page featuring map of community
- Point-of-interest page featuring community conversation and promises by individuals
- Example comments on a POI page





COMMUNITY TALK

Discuss, organize, solve.

3 comments ▾



Micheal Yenbil - Accra, Ghana

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[Reply](#) · [Like](#) · [Follow Post](#) · November 28 at 8:23am



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3. Photos of concepting, deployment, community testing, and community meetings

Concepting





Signage installation





User testing and feedback





Community meeting



Clean Kumasi: Digital Platform Prototype Design (Milestone 1b)

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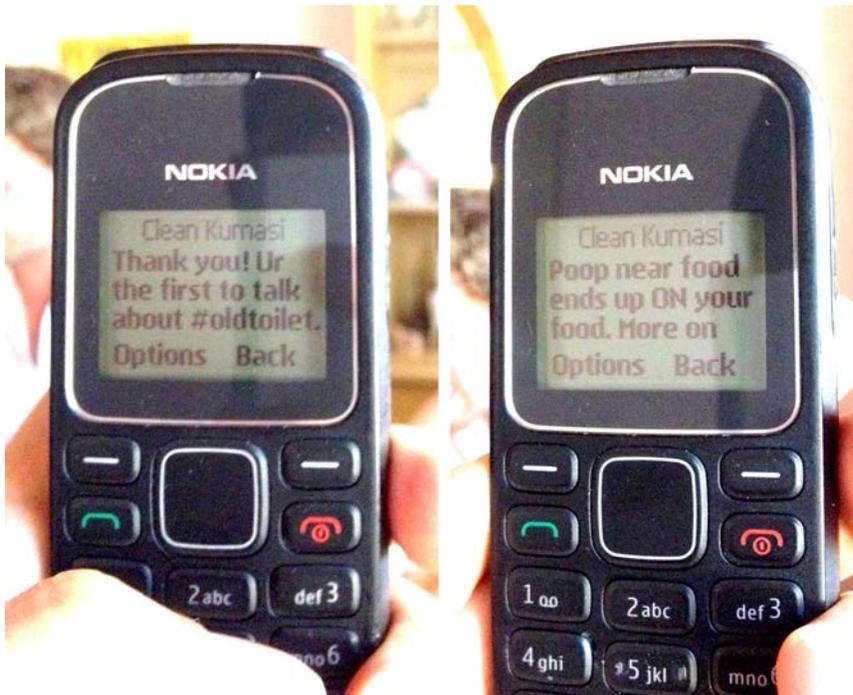
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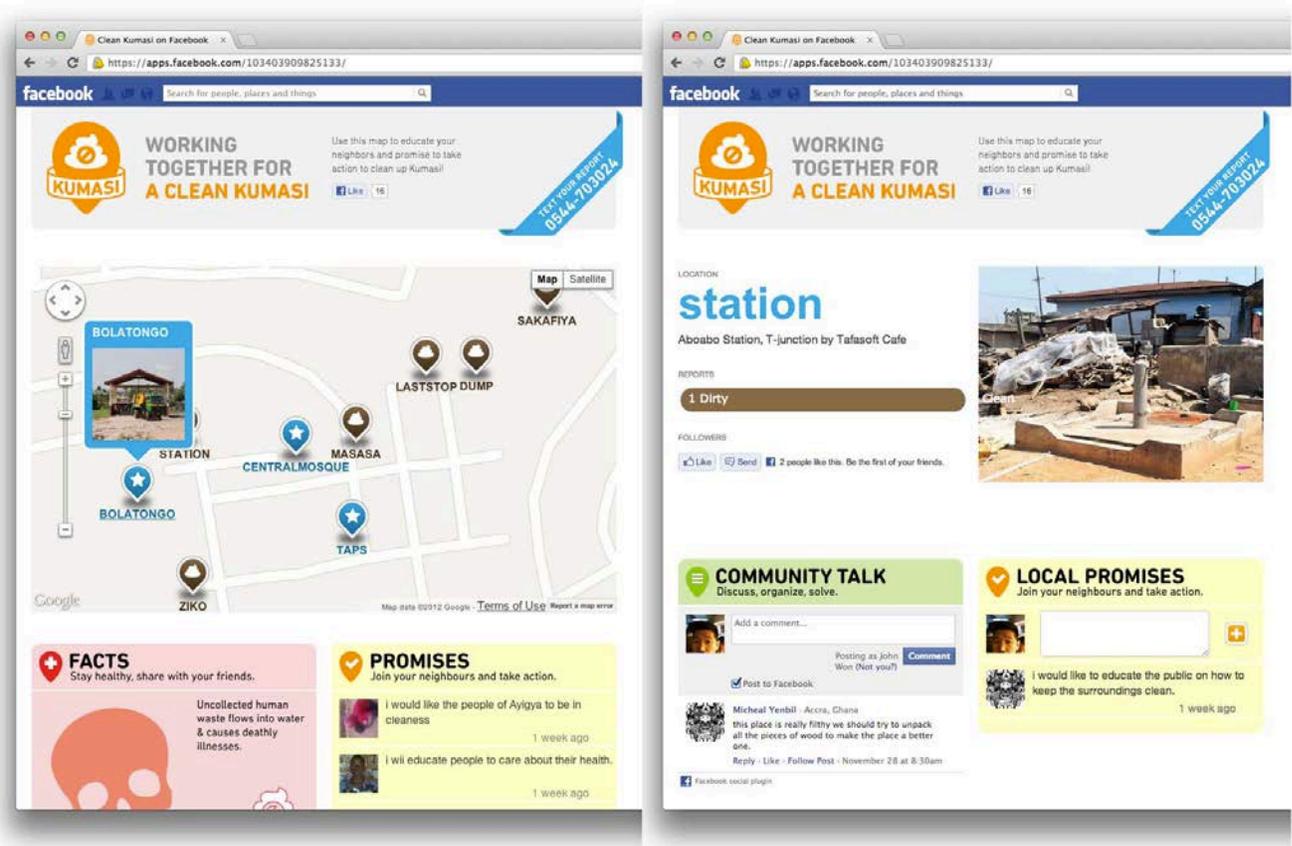
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3. Photos of concepting, deployment, community testing, and community meetings

Concepting

Two eight hour hackathons were held with about 80 members people from the San Francisco technology community, including representatives from Ushahidi and corporate partnership with VMware. In the build portion, user scenarios were developed to describe the platform from a human-centered approach, while small teams worked on individual components of the overall story. Boards with who was doing what and instant photos kept the individual teams organized and allowed them to synch up with participants.







Signage installation

Signs were placed at 11 of these points of interest, or defecation/dump areas (some of which shared both features) to engage people with using the digital platform, and initiate community discussion about addressing poor sanitation conditions. Participants then received an automated SMS response telling them how many others had reported the conditions at the site, a brief message about sanitation and health, and a link to the Facebook application. The Facebook application showed each of the locations on a map, with the number of others that had also reported the sanitary conditions at that site.





User testing and feedback

During the first four days of running this system, the team simultaneously collected initial feedback. This included informal conversations with individuals, community leaders, and small groups, including those who had texted or called the number on the signs, and two group feedback sessions were setup at two Internet cafes in the neighborhood. In order to test the system, we asked residents to use the system in front of us, i.e. we asked them to read the signs and tell us what it meant, text message the system and tell us what the reply meant, and upon attending a meeting, we asked how could we improve the system, or how should it change? Feedback on the platform continues with the ongoing capture of usage metrics, as well as follow-on interviews with an expanded sample as part of the baseline monitoring plan (BMP.)





Community meetings

Community meetings were held to announce the platform and map the neighborhood with residents (11/23), organize the community and launch an immediate action (11/29) and plan meetings with city and community authorities about the emerging resident-driven campaign (12/1). Small- and medium-sized meetings happened in an ongoing fashion through the live prototype as signs were installed, interviews conducted and clean ups undertaken.







MILESTONE 3B

BASELINE SURVEY REPORT

Testing a Digital Platform's Ability to Recreate the Success
of Rural Community-led Total Sanitation in Urban Communities

Table of Contents

1. Introduction: Baseline for Testing a Digital Platform	3
1.1 Pilot Status: prototype testing, in-context research and community gatherings	3
2. Approach and Scope of the Baseline Report	3
3. Qualitative Findings	5
3.1 Interviewee Profiles	5
3.2 Sanitation Conditions and Behaviors	6
Reasons for not using public toilets	7
Handwashing	8
3.3 Attitudes Towards Sanitation	8
3.4 Health Knowledge	9
3.5 Knowledge of the System	10
System usage statistics	10
Calls and text messages to the system	10
4.0 Summary of Findings by Baseline Indicators	12
5.0 Conclusions	13
Appendix 1: Photos of Sites and Annotated Map	14
Appendix 2: Interview Template and Participant Profiles	19
Appendix 3: Photographs of the Community	29

1. Introduction: Baseline for Testing a Digital Platform

IDEO.org and WSUP are testing the hypothesis that an innovative information communication technology (ICT) platform can be used to recreate the success of Community Led Total Sanitation in an urban context. Thereby, the team is exploring how a digital platform can infuse demand for sanitation and facilitate community action to increase use of improved sanitation and hygienic behaviors, and decrease open defecation. To accurately assess the ability of a digital platform to achieve these results, a Baseline and Monitoring Plan (BMP) has been developed to track sanitation conditions and behaviors. In fulfillment of the BMP, and partial fulfillment of Milestone 3, this document provides a baseline of existing sanitation conditions and behaviors in Ayigya, a low-income neighborhood in Kumasi where the pilot begins. It summarizes the initial reaction to and engagement with the platform, by which to measure changes induced by this pilot.

1.1 Pilot Status: prototype testing, in-context research and community gatherings

In November 2012, the team completed Milestone 2 of the pilot with testing a prototype platform, in-context research, and community gatherings in the selected community of Ayigya, Kumasi. In accordance with the criteria identified in the Project Implementation Plan (PIP), this community was selected based on the presence of open defecation, existing sanitation solutions, and sufficient penetration of technology (mostly mobile phones and some Internet access). The team initiated community engagement by identifying relevant stakeholders and leaders for consultation and permission to proceed.

To launch the pilot, a small community meeting was held to explain the objective, the functionality of the platform prototype and recruit community members to identify places of importance in Ayigya upon which to base the digital platform. The sites identified included both areas used for open defecation, dumping feces in bags and general solid waste, as well as mosques, churches and water points (where open defecation was sometimes also visible). Signs were placed at 11 of these points of interest, and served to engage people by asking if feces were seen there, instructing people to text “yes” or “no” with the location name as identified on the sign. Participants then received an automated SMS response telling them how many others had reported the conditions at the site, a brief message about sanitation and health, and a link to the Facebook application. The Facebook application showed each of the locations on a map, with the number of others that had also reported the sanitary conditions at that site. Photos of these sites and an annotated map are included in Appendix 1.

During the first four days of running the prototype, the team simultaneously collected initial feedback. This included informal conversations with individuals, community leaders, and small groups, including those who had texted or called the number on the signs, and a formal community meeting about next steps. These discussions led to some initial language adjustments on signs, and the more significant redesign of the system. They also informed the design of the BMP, and this baseline study to characterize existing sanitation conditions and behaviors.

2. Approach and Scope of the Baseline Report

As prescribed by the BMP, this Baseline Study was completed through qualitative analysis of semi-structured interviews with different types of community members. One group of 11 interviewees was selected to take part in a longitudinal study beginning with this baseline interview, and continuing through the duration of the pilot. Another group of interviewees included toilet and dumpsite attendants who are close observers to behaviors around public toilet use, open defecation and dumping of feces in bags and other solid wastes. Some individuals were selected from among those who had called or texted into the system, while

other were selected at random from the community. A summary of participants targeted for the study are summarized in the table 1 below, and the reasoning for the methodology is detailed in the BMP.

The semi-structured interviews for the longitudinal study sought to identify the sanitation options available, attitudes toward these options, hygiene practices, barriers/motivation to public toilet use, and stress posed to women, children and the elderly/disabled by existing sanitation conditions. Some of this information was obtained through direct questions on personal and household practices, and some through indirect questions about neighbors and the community at large. Interviews also sought to assess the level of participants' basic knowledge of health risks that arise from exposure to excreta. Finally, interviews inquired about participants' engagement with the digital platform and their perceptions about it. The template for the semi-structured interview is provided in Appendix 2, followed by interviewee profiles summarizing their behaviors, knowledge, and attitudes. Photos of the participants are included in Appendix 3.

All of the baseline interviews, in combination with the team's observations and information obtained through the initial prototype feedback process, have been synthesized to give a complete picture of baseline sanitation conditions and behaviors in the community. However, in order to measure longitudinal change in individuals over the course of the pilot (as prescribed by the BMP), the disaggregated interviewee profiles in Appendix 2 will become more crucial in future monitoring reports. Thus the monitoring report structure will shift from a synthesized discussion around baseline indicator areas, to highlight changes to individual's perspectives on sanitation, and personal behaviors.

Although the information collected for this report is felt to reflect as accurate as possible a picture of existing conditions in the community, important methodological caveats are as follows:

- Given the need to use qualitative rather than quantitative research methods, the findings cannot be extrapolated as proportionally indicative of the wider community.
- Some bias must be acknowledged from those participants selected by their texts or calls to the system as "self-selecting" for their concern about sanitation.
- This self-selection and existing concern about sanitation may reduce the potential to induce personal change during the pilot. For this reason (and the known challenges in self-reporting) their perception of change in the wider community and their neighbors will be increasingly important.

Despite these caveats, the baseline study provides important insight into the general sanitation conditions and behaviors, by which to measure changes influenced by the pilot.

Table 1: Groups of people targeted for the study

Groups of People	Numbers
Community leaders	Chief and council members of Ayigya town 2 Community committee members
Consultative team	Identification of point of interest areas: 2 Men 4 Women
Community members	11 via purposive sampling which included: 4 Adult women 1 Child (girl) 2 Disabled/ elderly(both women) 1 Self-professed open defecators (male) 3 Patrons of the platform (all men)
Sanitation workers	4- Toilet attendants 2- <u>D</u> umpsite attendants

3. Qualitative Findings

3.1 Interviewee Profiles

Eleven people were purposively sampled for the longitudinal study of the baseline and monitoring plan. Within this group, the age ranged from a 17 year-old teenager (who was accompanied by a ten year-old), six adult women (38-76 years) and four men (28-55 years) who had lived in Ayigya for a minimum of two years, and a maximum of 60 years. The dynamics in age/gender targeted different range of respondents to enable the acquisition of data from a large variety of sources and their perceptions to be heard. See Appendix 2 for individual profiles of longitudinal participants.

Among the participants, five had no formal education while five had completed junior high school and one had some form of tertiary education. The majority of the respondents were unemployed, petty traders or retired; only two people stated they had regular income. Most lived in densely populated households, and were sometimes unable to give the accurate number of the others in the compound. Nine participants were renters while two owned their homes.

Many lived in old and dilapidated houses and attributed the lack of infrastructural development to their landlords, including the absence of a toilet. Ownership of wealth indicator proxies revealed general variation in income levels. The majority had electricity, TV, radio, a fridge/freezer, and a mobile phone, with the exception of two participants who did not have mobile phones (one of the oldest and one of the youngest females). About half owned livestock, one participant owned a motorbike and another owned a car.

The four toilet attendants, whose responses also inform this synthesized picture of existing conditions and behaviors, worked at the following locations: the affordable housing toilet (also near the informal dumpsite near the school), the market toilet, the new Masasa toilet, and the old Ziko toilet. All were male, and two lived outside of Ayigya (though one of these had formerly lived in the community). Masasa, the old Ziko toilet and the market toilet are all owned by individuals, and the attendant interviewed at the market toilet is the private owner. The market toilet and the old Ziko toilet were developed through a Build Operate Transfer

(BOT) scheme in cooperation with a private contractor. The government as part of the nearby school property owns the toilet near the affordable housing area.

3.2 Sanitation Conditions and Behaviors

Ayigya, like many of the sprawling urban settlements in Kumasi, suffers from very poor sanitary conditions, with visible evidence of open defecation and feces in plastic bags dumped around the community. The older toilets in the community are dilapidated and poorly maintained (e.g. lack of light, fly larvae, offensive smells, and unclean), and the toilets available were inadequate until the recent construction of four large, modern toilets. Respondents widely agreed these newer toilets have improved the access to acceptable toilets in Ayigya. Yet, general sanitation in the area still remains very poor, with evidence of open defecation and feces dumped in bags throughout the community. All interviewees were unhappy with the current state of sanitation in the community and did not hesitate to express their frustrations.

It became apparent from observations and interviews that sanitation is closely linked to solid waste management in Ayigya. Many people who practice open defecation use the waste dumpsites or mix up bagged feces with general waste for dumping, and gutters were clogged and stagnated with solid waste and bags of feces as well. There is only one official dumpsite for the whole of Ayigya, and although a privately owned truck used to convey rubbish from households to the dump it became inefficient, breaking down frequently and dropping rubbish along the route. As a result of the inadequacy of the collection services, several open spaces and bushes are being used as dump sites.

Use and Non-Use of Public Toilets

All but one of the participants had no toilet at home, and one other person reported a household toilet, but use was limited to only the landlord. Respondents often attributed this to landlords' lack of commitment to constructing toilet facilities, as there is high demand for rooms in the area (even for houses without toilet facilities). Consequently, many residents, both young and old, depend on public toilets. Three toilet attendants estimated that most (75%) of people in Ayigya use the public toilets and the other estimated that just some (50%) use them, with the remainder using bags or open defecation.

Some respondents acknowledged that they do not use public toilets all of the time, relying mostly on chamber pots and plastic bags, with one self-identifying as an open defecator. Five females stated they "sometimes" or "rarely" relieve themselves in bags, dumping the bag in the morning, with most attributing this to the insecurities of going out during the night.

In contrast, all of the males and two females said they never relieve themselves in a bag, and always use the public or toilets (with the exception of the one who uses a household toilet, and another male who prefers open defecation). One male reported that the elderly, women and children were more likely to use bags, but he would "never" do this because it is "demeaning," with another stating that it is not proper for a man. The majority of the interviewees acknowledged that some in their households use bags, and all acknowledged that neighbors or others in their community do this, or practice open defecation, and more often these were specified as women, children or the elderly.

Some reported that if they or their family members use bags, they take them to the dump with their general waste. The contents are not allowed to be dumped down the public toilets because they are mixed with paper (anal cleansing materials, which in the public toilets are placed in a separate waste bin to reduce the amount of material that must be desludged). However, interviewees complained that others in the community dump these bags in the alleys, near their homes or places of work, and next to the toilets (though some suggest this has decreased since they have complained).

This behavior was widely verified by dumpsite and toilet attendants. One dumpsite attendant said people would rather leave bags of feces waste behind their neighbor's house than to pay to dispose of them at the dumpsite. The four toilets attendants all observed open defecation and people bringing bags with feces, one saying these occur at night when the toilets are closed. They also said it is mostly women and children who do not use the public toilets. Three attendants say there are more male public toilet users than females (by about 60:40 or slightly more), except the market toilet attendant, who suggests this ratio is reversed with more female users.

In estimating the proportion of users, toilet attendants felt that 5-10% were children under the age of 10, a slightly higher proportion are elderly, and the majority are adults. However, the attendant at the old Ziko toilet says that most of his customers are elderly (80%) and the younger people prefer to use the new modern one.

Reasons for not using public toilets

Participants suggested a variety of reasons for people not using public toilets, and instead practicing open defecation or using bags. These included the cost, the cleanliness or maintenance of the toilet, people's laziness or selfishness in wanting to keep their own areas clean but disregarding others' space, the risk of walking to the public toilets at night, disabilities, and the queues. However, the reasons listed most frequently were the cost and the poor maintenance of the toilet.

The issue of cost is complex as many respondents (7) thought the price of the public toilets were quite affordable, but said that cost was a reason *others* might not use the toilets. And still, a reasonable number (4) said it was expensive. One person said the price should be kept at 20 pesewas (0.11USD) as any major increase would discourage many people from using. The elderly blind woman reported often being exempt from paying to use public toilets due to her age and disability, but noted it is expensive for her entire family of ten people to use the toilets. The toilet and attendants also suggested that the unaffordable costs for some prohibit use, and many women use various tactics to avoid paying to use facilities, though there are some who can afford it but just want to avoid the fee.

Many suggested the cost for children to use the public toilets as a primary reason for their non-use, particularly for large families. Children are not given any preferential treatment with the use of pay toilets, and must queue with all other users. One participant noted that it is normal practice for mothers to encourage children to use dumpsites so as to avoid paying to use public toilets. The team frequently witnessed children defecating in the open even near the government school where the informal dump is located directly adjacent to the free school toilets. The team also witnessed toddlers being led to dumping sites by their mothers where they were assisted in defecating into plastic bags for immediate dumping.

Through the informal conversations and feedback leading up to this baseline survey, it was also reported that some toilet attendants won't allow children to use the public toilets because they believe they will make a mess or take too long (slowing the queue). Some people indicated that the large slab hole may be too big for children and they will defecate on the tiles immediately next to the hole. In response, many participants suggested that toilets should be made free for children to encourage them to use toilets, or special child-friendly toilets should be built, or even trenches for safer open defecation be built for children.

Text Box 1: Views on paying for children to use public toilets

One girl stated in an informal conversation; "My grandmother never gives me money for toilet". Miriam Kornyoh, a 38 year-old mother of two children was strongly against children paying to use toilets. She said; "I always give my kids anal cleansing materials to use the pay toilets for free". Sometimes, they are not allowed access depending on the toilet attendant on duty. She continues to explain; "my children know better never to ask me for money for toilet because I will not give them".

Text Box 2: The Cost vs Benefit of Open Defecation

The man who was a self-reported open defecator was mostly worried about the stench from the public toilets sticking to his clothes or having to pay to use uncomfortable toilets. He said, “Why should I have to spend 20 pesewas to defecate after eating a 50 pesewas worth of Abete (a very cheap local food)?” Thus his reasons highlighted the contradiction in having to pay to use an unclean toilet when, “using the bushes was one’s best bet. You do not need to pay to use and it is not anybody’s business because those lands have no owners”.

The second most frequently suggested reason for non-use of public toilets was the unclean conditions and the smell. Some explained that the smell will stay in your clothes, and when asked about health risks (see below) some believed that the smell can make you sick, while others suggested the smell simply “makes you lose the urge to go.” One person suggested the unclean conditions were wholly responsible for non-use, and it could not be due to costs or laziness (given that some will walk a long way to open defecate in a preferred location).

The attendant at the affordable housing toilet acknowledged that the condition of the toilet (the smell, fly larvae, and lack of lights) leaves people to prefer the nearby bushes, and his patronage is lower than the other toilets because the tank isn’t emptied as often with lower numbers. The other attendants indicated tank emptying takes more regularly, from every three months, to twice a month. All but the Masasa attendant indicated that people are generally “displeased” rather than “pleased” with the condition of the toilet. Two reported that the same users are who complain are responsible for creating a mess, and two reported that people dump all kinds of solid waste down the toilets.

Yet, some longitudinal participants did identify laziness and selfishness as a reason that others will indiscriminately dump bags of feces in public space but want to keep their own areas clean. The safety risk of using the toilet at night was a reason that a few women gave for themselves and others not using the toilet. One of the elderly respondents and one who had someone elderly in the household suggested that it is the long distance of walking to the toilet that discourages those who are less mobile or disabled from using it.

Handwashing

Many respondents said they wash their own hands after using the toilet, and some suggested before eating, or less specifically, “when they are dirty.” However, there were insufficient (if any) handwashing facilities present at the public toilets. All four toilet attendants estimated that only a few (25%) of their customers wash their hands after using the toilet. All reported they formerly provided soap, but people would steal it, so they no longer provide it (one said it was still available upon request). Some respondents said they washed their hands when they returned home from using the public toilet, yet one added, “sometimes by the time you reach home from the public toilet you might even forget to wash your hands”. While verification of handwashing behavior is difficult in any context, the conditions here (and more comments from the toilet attendants below) suggest that handwashing with soap, immediately following use of the toilet is not practiced.

Text Box 3: Theft and toilet conditions

The market toilet attendant/owner reported that people will even steal the clothes that others remove before entering the toilet to avoid their clothes smelling of toilet, which highlights both the problem of theft and serious concern about offensive odors.

3.3 Attitudes Towards Sanitation

When asked if open defecation was a common problem in the community, eight of the eleven respondents felt that it was a “very common, widespread” problem and three others

thought that it was not so common and only limited to a few people. All participants said that open defecation was unacceptable, rather than acceptable, with the partial exception being the man who preferred to open defecate. He replied without directly answering but clearly stating the conflict that people face: “There are no in-home toilets, the queues are too long, what can we do other than use the bushes?”

All respondents agreed that having a toilet at home would be ideal and were willing to pay towards the cost of an in-home toilet, (though the actual costs were not discussed) and for the elderly blind woman, she felt this was especially important for people like her. But most were indicated that is probably not the best solution for all houses at Ayigya because of the problems with desludging. The alleyways are typically narrow, unpaved, and inaccessible by desludging trucks, therefore preventing them from accessing the houses. Thus many suggested that where the infrastructure allows, people should have household toilets. Participants were almost all open to the possibility of contributing finances within their means, in addition to the toilet user fee, to improve sanitation situation (though again, an amount was not discussed). Some people however stated that they would only contribute if they could immediately and directly benefit them.

When asked if sanitation was an important priority in the community, participants answered in a range from “extremely important,” to “not important.” This potentially suggests different understandings of the question, but comments suggest that the importance of sanitation actually does vary widely in the community, Almost all respondents said that they previously had talked to others in their community about sanitation concerns, although two were skeptical this would change things. Several reported warning others not to dump waste or open defecate around their houses or work areas. Two said they had complained to their landlord about the need for a toilet. Almost all respondents had previously contributed in one form or the other to a community action towards general cleanliness of the area in the past.

Interestingly, all of the toilet attendants said that sanitation was *not* an important priority in the community, and open defecation was a common, or very common problem.

Text Box 4: Attitudes Toward the Sanitation Conditions

The participant who had a toilet at home but lived opposite one of the major public toilets was appalled by the rate of open defecation around the facility. He said the situation is very disturbing. “Even though this is my father’s house, where I don’t have to pay any rent, I am seriously considering relocating outside this community.” he said. He was very happy the sign had been put up and called to express his frustrations. He suggested the area around public toilets could be fenced and open defecators fined when caught to deter others from the act. Another participant who is on the board of the Kumasi Metropolitan Authority’s council for Ayigya said the town council is working to ensure all informal dumpsites are cleared. He condemned the indiscriminate dumping and open defecation. He said “Muslims are very neat people; Allah does not like dirt, that’s why we perform ablution”. He agreed that educating people on the effects of bad sanitation is the best way forward to improving sanitation in the area.

3.4 Health Knowledge

The survey assessed participants’ basic understanding of connections between exposed excreta and diarrhea/cholera, as well as perceptions of health impacts from using public toilets. Participants were asked if they or their family ever get diarrhea (the definition of this was explained) and if they knew the cause, as well as whether cholera was a problem in their community, and similarly their knowledge of causes.

Just over half of participants indicated that they or their family experience diarrhea. Three participants suggested it is caused by open defecation, and flies moving between feces and food, and two suggested not washing hands after using the toilet, indicating that around half

identified exposed excreta as a cause of diarrhea. Others didn't make this direct connection, but suggested that it is caused by dirty environments, food and water, or just flies, or eating too much. None of the participants said that cholera was a problem in their community. However, more identified the cause of cholera as exposure to excreta compared to diarrhea (six mentioned flies moving between feces and food and three mentioned not washing hands after using the toilet). A few participants mentioned just flies alone (without reference to feces) as the cause of diarrhea and cholera. This suggests that while some in the community may not associate open defecation with diarrhea and cholera, many people do recognize this health risk.

The participants also revealed some believe in health risks from using public toilets. Only three males said that using the community's public toilets was safe. One male and two females suggested that the smell alone could make one sick. Four females (particularly the younger and middle-aged) suggested they could get "white" or chlamydia (referring to a vaginal infection) from the heat produced by waste decomposing in public toilets, though some admitted they weren't sure if it was true. One elderly woman noted that walking to the toilet makes her weak, and the other didn't know if there are health risks.

3.5 Knowledge of the System

Nine out of the eleven participants had seen the signs (although one of those who had not seen or heard about them was blind). Four out of the nine who saw the signs could not read them. Even though some could read them, they said they did not understand them. Two people had asked others to explain to them. A man who had some form of tertiary education, understood the general idea but did not understand the local word used for feces: "Bangida". Most participants, and others consulted during the initial feedback suggested better pictures could be used to illustrate the messages on the signpost for them to be easily understood.

After explaining the details of the Clean Kumasi approach to all participants, some liked the idea of the signs and the initiative, wanting to know more about the intended outcomes. They widely agreed that changing behavior and attitudes was essential to solving the sanitation problem. However, they expressed some doubt about how the signs and text messaging in their current state could be achieved. Many added that the signs should be more instructive against open defecation or dumping human/solid waste, and those perpetrators should be fined.

In response to the prototype signs being placed near the toilets, where people open defecate and dump bags of feces, most attendants thought the signs might deter people, but won't be enough to stop the behavior. An attendant at the official Bolatongo dumpsite thought people couldn't be bothered about the signs as he said pointing "see them shitting there as if it is nobody's business". The affordable housing toilet attendant suggests that he thinks the number of people bringing feces in bags has decreased due to the sign, but that most people can't understand the sign. The other attendants suggested that people are trying to dump bags more discretely with the fear of being "caught" but the number hasn't changed.

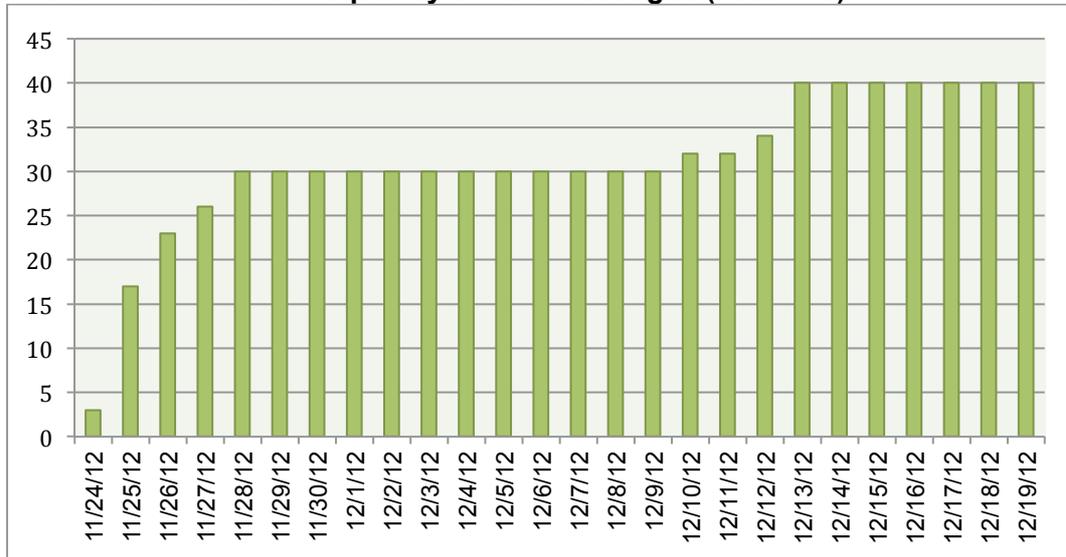
In their own comments, attendants suggested that the signs won't be enough and the campaign should be intensified. The attendant at Masasa toilet suggested employing people to literally police the area would be more effective. Three suggested fining people for dumping, and two suggested clearing the bushes so that people can't use them to open defecate with some privacy.

System usage statistics

Text messages to the system peaked in the first few days of the signs going in and then plateaued. Signs and word of mouth were the ways of recruiting residents into the

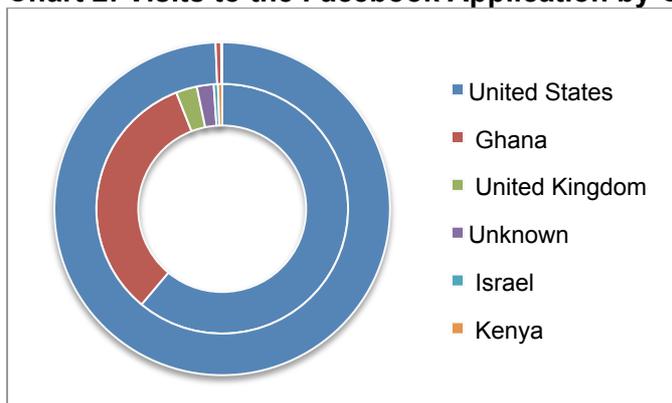
system and a challenge will be how to sustain interest throughout a project. The second challenge of this data is that the first system design required text messages to enroll residents while many people preferred to call into the system. Technically, the system did not track phone calls in its first prototype version, but will do so in the second one. Therefore, the baseline for call statistics is an incomplete picture showing text messages only that has been revised in the second refined platform.

Chart 1: Cumulative Frequency of Text Messages (Total: 40)



For Facebook, the usage statistics show a predominantly non-Ghanaian audience demonstrating the usefulness for the platform to an international audience, but the lack of traction it gained with locals. The online map has been re-positioned for an international audience in the second revision.

Chart 2: Visits to the Facebook Application by Country (Total: 186)



3.6 Dump Site Information

Bolatongo is the only official dumpsite for Ayigya and was built less than two years ago. One of the respondents who happens to be on the Ayigya town council explained that the KMA funded two official dumpsites for the community, but due to the requirement that the school near the proposed dump be fenced in first, they have not made this a formal dumpsite. Ironically, this is now an informal dumpsite, and there is no separating fence around the school, and a constant stream of children was seen defecating there. The dumpsite operators agreed, if sufficient dumpsites were available the indiscriminate dumping would be

significantly reduced.

The formal Bolatongo dumpsite is operated by a private company the attendees interviewed assert the company very well manages it. The attendants estimated that about 30% of the waste dumped is human waste. Dealing with the large percentage of human waste was a major challenge for the dumpsite operators. One respondents said “ there is nothing we can do about it as its widely practiced, so we accept it but that means we have to empty it more frequently than it should be required”. This is in contradiction to residents’ beliefs that human waste is banned from the dumpsite.

Some community members interviewed complained about the exorbitant prices charged by dumpsite operators as a major factor inhibiting patronage. Unlike the public toilets, there is no fixed charge. The dumpsite operators confirmed that they charged according to the load weight. One respondent explained, the problem is not the cost of dumping but the attitude of the people towards sanitation in this area; many people would normally avoid paying anything all together and dump at the abandoned market square near the official dumpsite, or in the alleyways and gutters. Some children when sent to dump will normally spend the money on candy and leave the rubbish behind people’s houses on the way to the dumpsite. Men, children and some women were reported to use the abandoned market square as a place to defecate or dispose bags of feces. The dumpsite attendants admitted to their own occasional use of the market square as toilet even though a public toilet was just nearby.

4.0 Summary of Findings by Baseline Indicators

The results from the qualitative research can be summarized to characterize the existing sanitation conditions and behaviors in the community. These are described for each of the three indicator areas identified in the BMP.

Behaviors, use and maintenance of improved sanitation facilities, handwashing

- The wide majority of people living in Ayigya do not have household toilets and rely on public toilets.
- Due to a variety of barriers to public toilet use, some people also practice open defecation and dump feces in bags around the community. For this reason, solid waste collection is linked with sanitation.
- The condition of public toilets and the cost of using them are likely key reasons for non-use
- Women, children, the disabled and the elderly are likely to make up of the majority of non-users due to inability/fear of traveling to toilets, restrictions against children and incompatible design for children, and the lack of willingness to give children money for using public toilets.
- People often rent their houses from landlords who have not constructed household toilets, or have removed them and are unwilling to install them. Some people have urged their landlords to build them toilets.
- Handwashing with soap immediately after using toilets is not practiced as public toilets do not provide soap.

Knowledge and Attitudes around sanitation

- The practice of open defecation and dumping of feces in bags is seen as a common problem and unacceptable.
- People think there is a need for household toilets, but recognize that it is a challenge for all houses to have them given the difficulties in desludging trucks accessing them via unpaved and narrow alleyways.
- Many people know that exposed feces can lead to diarrhea and cholera, and recognize flies and unwashed hands as the vectors, but some do not know this.

- There are some who believe that using a public toilet can cause poor health, namely through the smell, and vaginal infection.
- Community members have engaged in solid-waste clean ups in the past.

Engagement with the digital platform and community meetings

Note that this indicator area is less of a focus within the baseline study, and will become increasingly discussed in the subsequent monitoring reports. The initial feedback around the digital system is informing the current redesign of the prototype, however, key points about the prototype feedback and initial community gatherings are summarized here:

- At the team's request for a final meeting about the prototype, the community decided to conduct a clean up and develop a committee. They then held their own "Clean Ayigya" committee meeting a few days later, which was attended by one WSUP member.
- People are noticing the signs and some like them because they are already acting as a deterrent to open defecators and those dumping feces bags. Some do not think the signs are enough to change these behaviors.
- Limited literacy means that some people are unable to read or understand the signs, and texting is not widely used. Many people suggested using images. Accordingly, continued attention must also be given to developing the campaign offline through community gatherings.

5.0 Conclusions

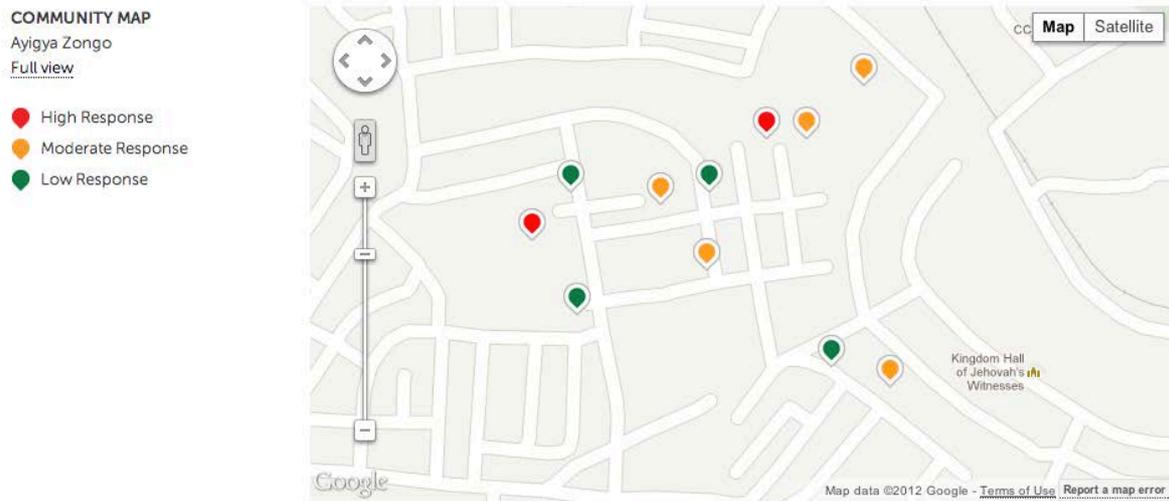
This baseline research depicts a picture of a community that lacks household toilets, and practices open defecation and dumping of feces in bags, despite the availability of public toilets. As participants indicate, this is primarily a behavioral problem, yet driven by legitimate issues such as the condition, cost and accessibility of toilets, with these factors being more pressing for women, children and the elderly. There is a desire for household toilets, yet also an awareness of challenges in achieving this due to desludging obstacles and reluctant landlords. The absence of handwashing with soap immediately after toilet use is another problematic reality of sanitation behaviors in the community.

However, it is also very clear that people are frustrated by the sanitation conditions, and see some health risks. This sentiment, their initial positive reactions to the signs and the campaign, and their early formation of a committee suggests the community is ripe for the continued development of a demand creation. Given the evidence that some demand exists, there need is for a sophisticated and strategic sanitation campaign that creates more widespread and intense demand, and can also facilitate and support community discussions and actions toward solutions.

With this context, and the relatively high penetration of basic technology, there is a strong potential for innovation in ICT to bring about meaningful sanitation improvements. Crucial to this is the team's continued attention to user experience in ICT (e.g. ownership of mobiles is high, but the ability to text is low; popularity of the internet cafes among the educated youth). In addition, digital engagement must be mirrored by offline engagement, particularly for the elderly/disabled who may face the greatest obstacles toward using the current sanitation options. Given this potential, and these considerations, the team will continue to develop a digital platform that can:

- Increase the level and distribution of demand for sanitation
- Support and document online and offline community discussions around solutions they see to barriers of using public toilets
- Support community action/discussions about what is needed to pursue an option of household toilets for those who wish
- Potentially be adapted for wider community benefit beyond sanitation.

Appendix 1: Photos of Sites and Annotated Map



Screenshot of the community map on CleanKumasi.org



Aboabo Station



Last Stop



Bolatongo



Central Mosque



Apostolic Church



Market Toilet (Closed toilet in background)



Informal dump near public school



Masasa Toilet



Sakafiya



Old Ziko Toilet (new one on the right)



Water Taps

Appendix 2: Interview Template and Participant Profiles Qualitative Longitudinal Survey:

Interview information:

Interviewee Name:

Interviewer Name:

Date:

PART A: Interviewee profile information:

1. Gender: Male Female (circle one)
2. Age:
3. Length of time lived in Ayigya:
4. Own/Rent house? (circle one)
5. List the other family members, and their ages living with you:
6. What was the highest level of schooling you completed?
7. Occupation?
8. Available to be interviewed in repeat monitoring over next year? Y/N
(If NO, stop interview)

PART B: Behaviors

1. Do you have a toilet in your house? Y/N (circle)
2. Do you ever use a public toilet? Y/N (circle)
 - 2a. If Y, which one do you most often use? _____
 - 2b. Are you satisfied with the condition of the toilet? Y/N
3. Which describes your use of a public toilet? (circle one)
 - Always use
 - Always unless urgent
 - Most of the time
 - Sometimes
 - Never
4. Do the women in this household use the public toilet at night? If not, what do they do at night?
5. Do children aged 10 or under use the public toilet? If not, what do they do?
6. Are there any people with disabilities, or people who have mobility problems, in this household? Y/N
 - 6a. Are they able to use the public toilet? Y/N
 - 6b. If not, what do they do? *Explain*
7. What do people do when they have to use a toilet urgently? *Explain*
8. Do you ever have to rely on a plastic bag? Y/N
9. How often do you have to rely on a plastic bag? (circle one)
 - Always
 - Most of the time
 - Sometimes
 - Rarely
 - Never

10. Do you think your neighbors ever practice open defecation? Y/N
11. Do you think open defecation is a common problem in your community? (*circle one*)
 Very common, widespread
 Common
 Not so common, only a few people
 Rare
 No open defecation at all
12. Why do you think people do it? *Explain: [Please indicate what you think the most important reason is; but also indicate other reasons]*
13. When do you wash your hands?

PART C: Health Knowledge

1. Do you and your family ever have diarrhea? This means you have liquid feces at least 3 times a day or more or blood in your feces. Y/N
2. What causes diarrhea? *Explain:*
3. Is cholera ever a problem in your community? Y/N
4. Do you know what causes cholera?
5. Do you think there is a connection between feces and health/sickness? *Explain:*
6. Are there any effects on your health/sickness from using a public toilet? *Explain:*
7. What do you think about open defecation (do you find it acceptable/unacceptable) and WHY?

PART D: Attitudes

1. Do you think it's expensive to use public toilet? Y/N
2. How much would you be willing to pay to use the public toilet?
3. Would you be willing to pay something in addition to the toilet fee to collectively improve sanitation as a community? Y/N
4. Do you think that people need toilets in their homes? Y/N
5. What would you be willing to pay for a private toilet in your home?
6. Do you think sanitation is a priority in your community? (*circle one*)
 Extremely important, important, somewhat important, not important
7. Have you ever talked to anyone in your community about sanitation? Y/N
 If yes, what did you talk about? *Explain:*
8. Have you ever participated in any sort of community activity related to sanitation? Y/N
 If yes, describe:

PART E: Use of system

1. Have you seen signs about sanitation in your community? Y/N
2. Which one(s)? *List:*

3. Did you read them? Y/N
4. What do you think they mean? *Explain:*

5. Did you talk to anyone about them?

6. Have you acted on the signs?
 - 6a. Did you message (SMS)?
 - 6b. Did you call?
 - 6c. Did you visit the website?
 - 6d. What did you do on the website?

7. Did you react in any other ways to the sign?

PART F: Wealth Indicators

1. Check off items owned and currently working:

Electricity	Motorbike
Radio	Car
TV	Own livestock
Mobile phone	
Fridge/freezer	

2. Approximate annual/monthly income?

CLOSE: Do you have anything else you'd like to say about sanitation or what we've discussed?

Interviewee Profiles:

1. Alahaji Abdul Munim Abubakar: Male, 45



Alahaji is a Fulani Chief, clothing designer and board member of the KMA as an Ayigya Town Council. He owns his house where he lives with over 15 people, including his own children and his brother's children, and his elderly mother. The house formerly had a bucket latrine, and then a dug pit latrine, but this is now full and unusable so he relies on the new Ziko toilet, which is nearby, and would never personally rely on a plastic bag because he sees it as demeaning. The women and children in the household rely on the old Ziko toilet at night (which is not locked). And his elderly mother and the young children use chamber pots at home, and the feces are then mixed with other solid waste from the house and taken to the dump area. He feels that open defecation is very common in the community (though

unacceptable) but it is usually children who use a bag and then dump it later. He believes the primary reason for this is poverty, and the costs of using the toilets for large families.

The children in Alahaji's family are often affected by diarrhea, and he recognizes the connection between feces, flies and food. He indicates he washes his hands regularly as part of his Muslim practices and especially before eating and after using the toilet. He thinks that all households should have toilets at home, and though he recognizes the challenge of desludging all the household toilets given the road conditions, he suggests the government should improve the road. As an Ayigya town council board member, he has advocated for cleanliness in the community, and organized the construction of household drainage systems. He did see several signs for the system, but didn't understand them or the objective and asked Ima Abuima about them (who he had seen with the team putting them up).

2. Felix Kwetu: Male 30



Felix has lived in Ayigya for two years and rents a house with his wife and only child (four years old). He completed junior high school and works as a mason. Due to the absence of a household toilet, he and his wife always use public toilets (never a bag or open defecation) and primarily use the market toilet near his house, though he complains of the smell and insects. His child uses a chamber pot, which his wife later takes to dump in the toilet, though she has to pay for this. He believes open defecation is not very common, and his neighbors don't do it in this area. Though he hasn't seen people using bags as toilets, he sees the bags dropped in the alleyways, so he knows that people do it. Felix believes people open defecate because the toilets are not clean so they are better off using the bushes than paying for a dirty facility, but he doesn't attribute it to unaffordability or laziness.

Diarrhea is not a problem in his household and he recognizes that it can come from not washing hands after using the toilet (though there is no handwashing facility at the toilet, he washes his hands when he returns home). Felix is very concerned about open defecation and the mess at some public toilets makes him not want to use them. While he thinks people do need household toilets he suggests it should be encouraged where it is possible, but can only be limited due to the desludging problem. He is willing to pay "as much as it takes" to have a household toilet. He thinks most people care about sanitation, but some can't be bothered, and has talked to some people about unsanitary actions (e.g. a man burning toilet near the water point). Although he saw multiple signs for the system, he didn't bother to read them, and asked a WSUP team member about it when he saw her attending to one.

3. Ima Mariam Mamprusi: Female, approximately 75.



Ima Mariam has lived in Ayigya for twelve years where she rents a home with her six children and ten grandchildren. She has no formal education and is not working, and is cared for by her children and friends. There is no household toilet so she always relies on the market toilet though she complains of the smell and insects, and the toilet paper not being collected. The women in the household pay to use public toilets (never using bags) and at night they use the public toilets that stay open and are close by (though she sometimes wakes her grandchildren to accompany her). Her grandchildren use diapers or chamber pots, and wrap feces in bags to take to the dump. Although her neighbors don't open defecate, she sees piles of trash left behind her house. She thinks open defecation is not very common (and is unacceptable) and that only a few people do it because they are very lazy or just selfish about wanting to keep their own spaces clean, but littering the alleyways.

Although Ima Mariam is unaware of the cause of diarrhea other than eating too much, she does say that flies cause disease when they move from feces to food. Walking to the toilet is a stress for her and she would like a household toilet and says that she and her family can pay within their means. She feels that sanitation is important in the community, and people want to avoid being fined by the KMA, so they keep their surroundings clean but disregard communal space. Although she is appalled by the situation she doesn't think that discussing it with anyone will change it and she doesn't know any community activities that have taken place around sanitation. Although she saw the sign at the market toilet, shouldn't read or understand it.

4. Miriam Kornyoh: Female, 38



Miriam has lived in Ayigya for 17 years and rents a house with her husband and two children (ages 9 and 16). She did not complete high school and works as a hairdresser/trader. Due to the lack of a household toilet, she uses the market toilet, though she is unsatisfied with the conditions (smelly and full of used paper) and says it can make you lose the urge to go to the toilet. She sometimes relies on a bag at night to avoid the risk of attack while going to the public toilet. She objects to the fact that children must pay to use the public toilets so she tries to avoid the fee by bringing her own anal cleansing materials for the children to use. She says that open defecation is very common (some neighbors do it) and people do it for fear of being attacked at night, though the main reason is poverty, and selfishness.

Miriam says that diarrhea does occur in her family and she recognizes its cause as not washing hands after using the toilet and before eating. However, she also suggests that using public toilets can cause "white" (vaginal infection from the heat). She believes that open defecation is

unacceptable, and though it is a difficult problem to stop, it would improve people's health if they could and that more people should be encouraged to build toilets if they can be emptied from their houses. While sanitation is extremely important in the community, a few people don't care. She has previously complained to others about people dumping feces around her shop, and she joined a hairdressers association in a clean up. Although she saw the signs near the market toilet, she didn't read it, but her husband did and explained it to her. She spoke with her husband and neighbors about it and thinks it will deter people from dumping around there.

5. Rahinatu Abdellah; Female, 45



Rahinatu was born in Ayigya and owns a house with her husband and four children; she has no formal education and is a store owner. With no household toilet she uses the Masasa toilet and says the condition is OK now, though the old one was horrible and at times unusable. She sometimes relies on a plastic bag when it is urgent or the toilets are closed at night due to the very unsafe conditions (risk of rape) near the affordable housing area, and then takes it to the dump with the general waste, or discretely leaves it at the public toilets. The young children also rely on bags in chamber pots. She says that open defecation is a very common problem in the community, her neighbors do it too, and the reason is primarily the risk of going to the toilets at night, though the smell and queue may also deter people.

Rahinatu says there is no problem with diarrhea in the household and it is caused by food poison and flies- and she later makes the connection that flies carry disease by moving between feces and food. She suggests that there is a risk of getting "white" or chlamydia from using the public toilet. She sees open defecation as a very big problem and is willing to pay more for improved sanitation, including the contribution toward a household toilet. She thinks sanitation is an important issue in the community but a few people don't respect themselves and the environment. She has talked to others about sanitation and feels the number of people leaving bags of toilet/open defecation near her store has decreased recently. She has participated in previous community clean ups. She didn't see any of the signs.

6. Victoria Abofour: Female, 17



Victoria has lived in Ayigya for 10 or more years and she lives in a rented house with foster parents (where she seems to work as somewhat of a maid as well). She attends the Ayigya junior public high school. There is no household toilet, and though there are free toilets at school, she doesn't use these and uses the Masasa toilet when she comes home from school because she would rather pay to use a clean toilet than those at school. At night she "rarely" relies on a plastic bag, but some of the women in the household more regularly use plastic bags and dump the feces near last stop. Children defecate at the dump near

the school and this is widely seen as normal. She thinks such behavior is a common problem in her community and that most neighbors do it because they don't have a toilet at home and feel lazy, don't have money, or they don't want the smell of the public toilet to sick on their clothes. She feels it's unacceptable and would like to see the bushes around last

stop cleaned up.

Victoria says that diarrhea does occur in the household and she later connects cholera to flies coming in contact with an infected person's stool. She also believes that the smell of the public toilet can give you a cold, and she has heard that you can get chlamydia from the public toilet, though she's not sure if its true. She thinks that the cost of using the public toilets is fair, but when a younger girl sitting in complains that her grandmother never gives her money to use the public toilet, Victoria suggests that using the toilet should be free for children. She thinks that sanitation is not an important priority in the community as evident by the poor maintenance of public toilets. Though Victoria has talked to others about sanitation and has helped with previous clean ups, she doesn't think that she can change much as a child. However, she saw and understood the signs, telling her friends she was happy that there were signs supporting what she believes in, and she felt motivated and pointed it out to others.

7. Wasilatu Asiamah Nuhu: Female, 43



Wasilatu was born in Ayigya and rents a house with her husband and four children (ages 13-23). She has no formal education and works as a food seller. She doesn't have a toilet in her house and always relies on the Masasa toilet as its very nearby. She says its relatively clean compared to the surrounding toilets, but before the new one, the situation was very bad. Although she says she never uses bags, she says a lot of neighbors do this around 11PM or later when the toilets have closed, and dump them around the last stop area. However, she thinks that open defecation is not very common and that only some people do it, especially now that the addition of new toilets has made the situation better. She finds open defecation very disturbing, but thinks the price of public toilets inhibits some people from using them, or that people just don't have the right change. She feels that its expensive for her whole family to use them, and wishes she could pay just 10p.

Wasilatu says that diarrhea is not a problem in here community, but it is caused by dirty environments (she does mention not washing hands after using the toilet as a cause of cholera, and says that she washes her hands when they are dirty and after using the toilet). She also believes the flies and bad smell from the toilet can cause sickness and you can get chlamydia from using it. She says that people need household toilets, and though this is the best solution, "landlords, don't prioritize that. They even convert toilet rooms for rentals." Sanitation is a somewhat important priority in her community; some are very concerned (like herself), while others care only about the cleanliness of their own households. She says she has talked to people about sanitation and this reduced the amount of trash that was dumped near her workplace, and she has joined several past clean up activities. She has seen the signs, but couldn't read them, so her son explained them to her, but she didn't take any actions (doesn't know how to text).

8. Edu Kwashie: Male, 55



Edu has lived in Ayigya for 35 years and rents a house alone (he is divorced with children), and completed form four education (junior high school), and now works as a farmer and petty trader. Although there is a toilet in the housing complex where he lives, it is limited to use by the landlord only. He sometimes uses Masasa toilet but prefers to use bushes most of the time. Though he says Masasa toilet is usually clean, he says there is usually queue, which he wants to avoid. He notes that people use bags when the toilets are locked at night and that its normal for children to use the dump sites and not the public toilets. He feels that his neighbors open defecate too, and like him, want to skip the queue, and also want to avoid the smell and paying for the toilet. He says that such practice is very common in the community.

He doesn't know if he is affect by diarrhea and says that it is caused by flies, though in identifying the causes of cholera he mentions specifically flies moving from feces/gutters onto food. He thinks the new toilets are clean and safe to use. Although he doesn't say that open defecation is acceptable or unacceptable, he says "There are no in home toilets, the queues are too long, what can we do other than use the bushes?"

He feels that they should be free, and then he would be willing to wait in the queue. Yet he also says he would be willing to pay something in addition to the toilet fee to make the sanitation situation better. He feels household toilets are a good solution, but that the infrastructure in the community doesn't allow for desludging. He adds that the KMA helped landlords to build toilets (like his) but that they limit the use to themselves or children. Edu feels that sanitation is not a priority, and though he himself open defecates, he has warned people who dump waste around his area, and has participated in several community clean ups. He saw the signs for the system though he didn't understand them, and didn't talk with anyone about them.

9. Ima Talata: Female, 47



Ima Talata has lived in Ayigya nearly 30 years, and rents a room with her husband and four children (ages 12-20). She works as a toilet attendant (note that she was interviewed with this full interview before the team decided to also interview toilet attendants with a different set of questions). She has no toilet at home and uses the Masasa toilet during the day, but uses a bag at night when the toilets are closed, and also due to the insecurities of going out at night (saying that the neighborhood is very dangerous). She explains that the chamber pots cannot be dumped directly in the public toilets if toilet paper is mixed in, so people are forced to dump the feces outside of the toilet. She says that children under 10 pay a reduced fee of 10p instead of 20p. Though she says that open defecation is a very common problem in the community, and this is because of the higher price of the new toilets (from 10p to

20p).

Ima Talata says her family doesn't experience diarrhea and that it is usually caused by unclean food, though she mentions flies as a cause of cholera, and later mentioned that

cleanliness is the best solution to cholera and diarrhea, so she wants to get people to stop open defecating. Though she says people complain about getting chlamydia from the public toilet, she isn't sure if this is true. She also says that some children drink from the water outside the toilets that is for flushing toilets and washing hands, and this can affect their health. She no longer provides soap at the toilet because people usually stole it. Though she feels is willing to pay more to improve sanitation in the community, she feels that others are not. Ima Talata says that there is not a lot of concern about sanitation in the community and that this is partly due to religious differences- she says the Christians do lots of clean ups and the Muslims don't regard the Christians and want to keep to themselves. She feels very strongly that the community needs help to improve the sanitation problem.

She has seen the signs, but can't read them so suggests pictures. Though she does feel that the sign is already deterring people from dumping or defecating in the area as people continue to dump but to do so with caution and discretion.

10. Latif Abdul Awal: Male, 28



Latif has lived in Ayigya for over twenty years and his father owns their home which is directly opposite from the market toilets. In the house he lives with his father, three wives, and 20 children. He has some form of tertiary education and works as a film director and also in a pharmaceutical company. He is the only respondent who has a flush toilet in his house (they have three of them) and he mentions that few houses in this neighborhood have household toilets. He says it is very hygienic and is emptied every three months. He complained that when children of neighbors defecate in chamber pots, they pour it behind the public toilet instead of taking it inside. He feels that open defecation is a big problem in his area saying that people leave plastic bags with feces in the alleyways- even though his house reflects more affluence, he doesn't want to bring his friends to his house due to the appalling environment. He also complained of the smell from the nearby public toilet when it is full or being emptied. In his opinion the public toilets are a poor technology choice because they are poorly maintained. In his experience of using a public toilet once, he said it was very bad and compared it to hell.

His family often experiences diarrhea due to overeating for their annual fest, though he also says that open defecation is another factor, and that flies landing on your food can cause cholera. He also believes that the smell of the toilet can make you become ill. Latif mentioned that it is unhealthy for children to open defecate, but that it is the unhygienic conditions of the public toilet that makes people open defecate, and that public toilets are not too expensive. He thinks household toilets are even more important than piped water and points out that even with a lot of public toilets in Ayigya, people still dump bags of feces. He suggests those who have proper roads and can have latrines emptied should build household latrines.

He says that he has helped in previous community clean ups organized by a community-based fan club. He has noticed the signs at the toilets, but said he read them more than three times and couldn't understand them (didn't know the word "Bangida"). He didn't send a text because he didn't think that would warrant serious attention so he called instead to voice his concerns about sanitation. He suggested using illustrations on the signs.

11. Adiza Yusif: Female, 76



Adiza has lived in Ayigya for 50 years and rents a room with her family (10 children). She has no formal education, is retired, and is also blind. She has no household toilet and uses the market toilet, though sometimes must rely on a plastic bag, and when she is sick and unable to walk she uses diapers. She says that it is a daily struggle for her to get to the toilet and she needs very careful assistance to use the public toilets. She says at night, she, like other women, must use bags. The lack of a toilet is major problem for the whole household because the stress posed to her and her escort is huge. They have complained to the landlord several times but he refuses to build a toilet. She doesn't understand those who are able to see and walk freely but choose to defecate around, and believes it is an attitudinal problem. She thinks most neighbors open defecate and that it is very common, although she cannot see this. She thinks that they do it because of lack of money, laziness, and the walking

distance from the toilets. Although she is often allowed to use the public toilets for free because of her age and condition (not always), she feels the cost for her whole family to use the toilet is expensive.

Adiza says there are instances of diarrhea in her household and that they are caused by flies moving from feces to food. She says that everyone should have a toilet at home, and especially for her, this would be a great gift. She believes that sanitation is an important issue in Ayigya, and that Muslims are a very clean people but a few people make it difficult to keep the environment clean. She hasn't talked to others about sanitation apart from her landlord who she's pressured to build a toilet.

Appendix 3: Photographs of the Community











MILESTONE 3A

PLATFORM REFINEMENT

Testing a Digital Platform's Ability to Recreate the Success of Rural Community-led Total Sanitation in Urban Communities

Purpose

This document is in partial fulfillment of IDEO's contract with USAID (Grant No AID-OAA-F-12-00009) to redesign a digital platform's ability to recreate the success of "Community-Led Total Sanitation (CLTS) in an urban area. It describes the redesign of the digital platform (created in weeks 7-10, and tested in the field in Kumasi, Ghana, in weeks 14-15).

Content

1. Platform Redesign Process
2. New Experience
3. Platform Touchpoints
4. Initial Platform Testing
5. Next Steps

1. Redesign Process

Upon returning from Kumasi, Ghana the team proceeded to download and capture insights, comments and suggestions that were made during fieldwork by both residents of the selected community, and the community organizers themselves.

This process provided the team with clear direction for how the digital platform should evolve in order to meet the needs of its users.



IDEO.org team downloading the fieldwork insights and discussing the platform changes

The team dissected each touchpoint of the original prototype to thoroughly understand what worked and what needed to change for the next iteration.

Signs

The signs proved to be an invaluable touchpoints for the platform as they were the entryway for residents to become part of the community group. However two main problems were identified with the current design:

1. The signs relied too heavily on written language, which proved to be a high barrier for locals due to literacy level and prevented them from easily understanding how to use the system.
2. The signs asked the residents to report incidents of open defecation, but prevalence of this was so widespread and frequent that people expressed that it was pointless to respond on an incident-by-incident basis.



Residents of Ayigya looking at the signs after installation and trying out the SMS system

SMS Service

The digital platform relied on an SMS system to communicate with community members to gather data about open defecation, catalog respondents' phone numbers and to communicate back to community members about the initiative and ongoing activity.

Although the use of mobile phones is widespread among the residents, it became apparent that the target population's literacy level, as well as the type and working condition of their phones, were a real barrier to using the SMS-based portion of the system. Among the people the team interviewed, a majority were unable to compose text messages on their phones. And, they were unable to comprehend multi-sentence SMS messages that they received.



In-depth session with two female residents, focusing on sending and receiving SMSs

Facebook Map App

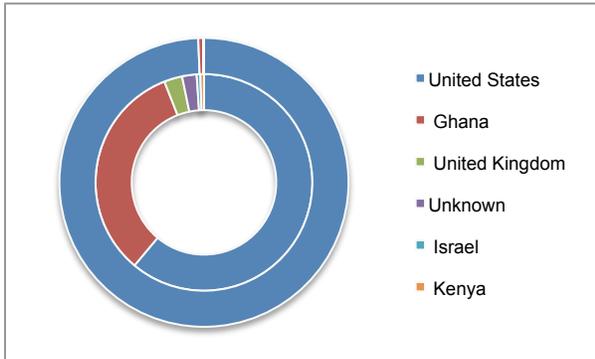
Internet access in the community is not widespread. Two Internet cafes serve the neighborhood, with very low-resolution screens and slow internet connections. The main users of the Internet cafes are young students (12-18 years old) who often didn't own mobile phones. This meant that the links between the community signs, the SMS system, and the Facebook app/site were not understood. Although the online portion of the platform was not successful as it pertains to the goal of this project, the team still saw relevance for this channel if it were to be targeted and redesigned for a different audience.



The owner of the local Internet café explores the Facebook application with an Ayigya resident

The usage statistics for the Facebook app show a predominantly non-Ghanaian audience, demonstrating the usefulness for the platform to an international audience.

Chart 1: Visits to the Facebook Application by Country (Total: 186)



Community meetings

Although not part of the digital platform per se, community meetings were an essential component of the experience. After conducting two meetings, the team soon realized the central role that this human touchpoint will play in the success of the project.

Community meetings not only helped galvanize the residents around the topic of sanitation, but the team also considered them to be the best medium to deliver education and ultimately run CLTS sessions.



Community meeting with 30+ residents to discuss issues of sanitation in the Ayigya community and gather feedback on the platform

Conclusions

After a process of analyzing all touchpoints, their roles in the system, and their strengths and weaknesses, the team redesigned the way the digital platform supports urban CLTS. The new platform has moved away from data-collection and map-reporting tools to a system that enables community building and ongoing engagement around a defined issue, in this project's case, open defecation.

Through fieldwork, the team also gained clarity in defining the digital platform's target group. The platform has shifted from a general focus to a targeted one, i.e., moving away from a broad user base of residents to a defined user group of people with preexisting concerns for improving poor sanitation. The platform engages and activates residents who have a desire to connect with like-minded people and interested in working toward impact.

All the above-mentioned insights from the fieldwork and prototyping phase have shaped how the platform has been redesigned.

2. New Experience

Resident Experience

The resident experience has been streamlined and simplified, taking into account the learning from the initial prototype platform. Instead of asking residents to send an SMS/text message, residents are now asked to 'flash' a number in order to interact with the system. In the field, the team identified flashing as a prevalent user behavior. Residents, who often wish to avoid using calling credit (or when they have run out of credit), can call a number and, after the first ring, hang up with the expectation of receiving a callback. Building on this existing behavior, the new digital platform will call back the resident with a short automated message (approximately 30 seconds), recorded in both English and Twi. The message explains the objective of the project and asks the resident to identify the location/sign to which they have responded by entering its location number (prominently noted on the sign).

After this initial interaction, residents will receive extremely simplified text-message updates from the platform, and eventually a call from a community organizer inviting them to attend an in-person community meeting, as well as a CLTS education session. The update feature is based on another user behavior the team observed: residents with low literacy and SMS use had apparently subscribed to SMS updates which pushed football/soccer news to their phones, listing team names and game-viewing times. We think this could be a model for Clean Kumasi text messages: simplified, showing only basic information (time and place), and unidirectional.



Local residents that joined the IDEO.org team in mapping sanitation hotspots in their neighborhood

Community Organizer Experience

The new platform now helps community organizers by providing them with tools and systems to recruit, enroll, and update prospects and participants. Through the system, they can access and edit the complete address book of the community group in order to invite members to in-person meetings, as well as send SMS updates to the whole group through an online form.



Faustina Asante/WSUP leading the platform feedback session during a community meeting

3. Platform Touchpoints

Signs

The signs' primary function is to enroll residents in the digital platform. They have been designed to emotionally appeal to residents and to encourage them to flash the listed phone number. Particular attention has been given to visual design and language in order to be both informative and universally accessible. Language was chosen based on spoken and written expressions that the team observed, as well as after trial and error with a number of words in the field. The team found that many spoken words denote feces, including those from several local dialects. However, most residents' capacity for reading written language is limited to English, particularly basic words. For example, the team found that "toilet" has evolved to mean both the facility and feces itself, including open defecation. Residents use the word in context and its meaning is understood universally. Therefore, the team decided to use it as the primary referent for open defecation on the signs.

Two distinct communication directions will be tested through the signs. The first set of signs ("Fed up?!", "Stop Toilet" and "Save Ayigya") appeal to the desire for change that was latent in the community. The second set ("Eating Toilet") uses education messages to elicit action.





Five final sign designs: The number in the lower left hand corner is a location number that changes according to placement in the community.

Voice System

The new Interactive Voice Response (IVR) system replaces the SMS functionality of the old platform. The IVR is build both in Twi and English in order to accommodate the widest possible user base. Initiated once a resident flashes the system, the function of the IVR is to both inform the caller about the project scope and purpose, as well as to record his/her location number (as reported on each sign.) Although not essential to the core functionality of the digital platform, the location data will help the team understand what sites the community seems to care most about.

[Intro chime]

This is Clean Ayigya group.

For English, press 1

For Twi, press 2

We want to stop toilet outside and clean up Ayigya.

To tell us where you are, enter the location number on the sign now.

Meda ase! Now we know where is most important to you.

We will call you for our next meeting. Tell others to flash us.

Together we can make Ayigya an even better place to live.

Admin Site

The admin site has been created and designed to help the community organizer recruit and invite residents to community meetings, as well as to maintain ongoing engagement and connection with a growing base, keeping up residents' momentum and excitement around the project. The site has three core functionalities: address book, send message, and map editor.

Address book

The address book displays the complete list of phone numbers that have flashed the system. Its main purpose is to enable the community organizer to keep track of all enlisted community members and to allow him/her to invite all or part of the list to in-person meetings. The system automatically creates an entry for a resident when a flash is received, recording the phone number (as the primary identifier), the date of creation, the date of the most recent report/activity, and the location(s) reported during the IVR callback. The community manager can then edit and enhance each entry by adding a name and any additional notes in order to help identify each community member as well as to document their participation in the project.

Name	Number	Created	Last Report	Locations	Notes	
Faustina Asante	0544703024	2012-09-12	2012-09-18	Bolatongo, Last Stop, Masasa, Central Mosque, Hello My Name	Girl who lives near the last stop with the small kids. Has called a few times but never showed up	X
Faustina Asante	0544703024	2012-09-12	2012-09-18	Bolatongo, Last Stop, Masasa, Central Mosque	Girl who lives near the last stop with the small kids. Has called a few times but never showed up	X
Faustina Asante	0544703024	2012-09-12	2012-09-18	Bolatongo, Last Stop, Masasa, Central Mosque	Girl who lives near the last stop with the small kids. Has called a few times but never showed up	X
Faustina Asante	0544703024	2012-09-12	2012-09-18	Bolatongo, Last Stop, Masasa, Central Mosque	Girl who lives near the last stop with the small kids. Has called a few times but never showed up	X

Address Book interface for the community organizer tool.

Send Message

This functionality enables the community organizer to send SMS updates to residents that are part of the system. The community organizer can select whether to push the message out to everyone in the system, or select to target only certain locations depending on the purpose of the message.

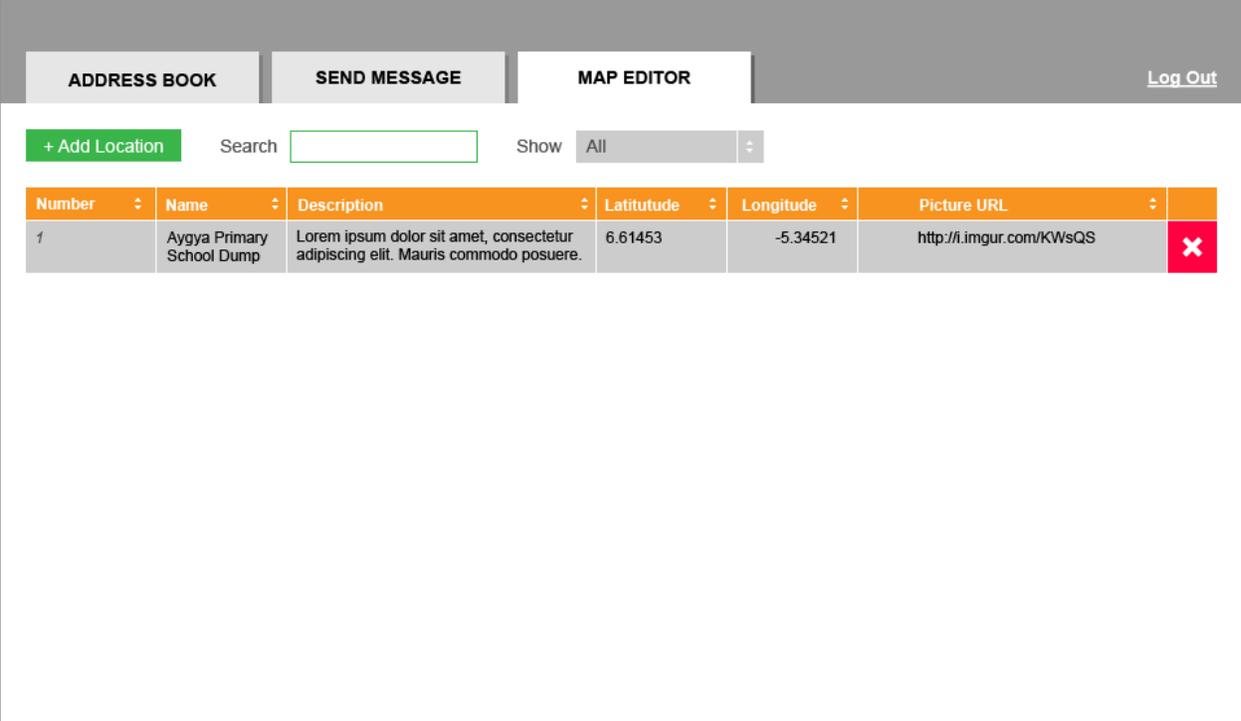
The team envisions this functionality to be useful to keep the community group engaged between in-person meetings. Although SMS has proven to be a weak medium for two-way communication, there is still a role for it in the platform as a simple one-way communication tool for broadcasting relevant information/updates and prompts for ongoing participation.

The screenshot shows the 'SEND MESSAGE' interface. At the top, there are three tabs: 'ADDRESS BOOK', 'SEND MESSAGE', and 'MAP EDITOR'. A 'Log Out' link is located in the top right corner. The 'SEND MESSAGE' tab is selected. Below the tabs, there is a 'Recipients' section with a list of checkboxes for 'ALL', 'Bolatongo', 'Masasa', 'Last Stop', and 'Ziko', each repeated three times in a grid. Below this is a 'Message' text area with a '0/160' character count and placeholder text. At the bottom are 'Cancel' and 'Send' buttons.

Send Message interface of the community organizer tool.

Map Editor

The map editor enables the community organizer to add, remove, or edit locations in the system. If the community group sees the need to expand the platform to new locations or geographies, the organizer can easily add a location and create new signs to be installed on the ground.



The screenshot displays the 'MAP EDITOR' interface. At the top, there are three tabs: 'ADDRESS BOOK', 'SEND MESSAGE', and 'MAP EDITOR'. A 'Log Out' link is visible in the top right corner. Below the tabs, there is a '+ Add Location' button, a search input field, and a 'Show' dropdown menu set to 'All'. The main content area features a table with the following data:

Number	Name	Description	Latitude	Longitude	Picture URL	
1	Aygya Primary School Dump	Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris commodo posuere.	6.61453	-5.34521	http://i.imgur.com/KWsQS	

Map Editor interface of the community organizer site.

Public site

The role of the new public-facing site is to present an overview of the project and the data collected (with key metrics and visualizations updated in real time on the page) in an accessible and compelling way to a wide audience. Intended users of the site range from local government officials and NGOs to international organizations that are interested in digital solutions or which have played a significant role in this project. This is part of ongoing project communication and promotion to the aid community as dictated by the grant agreement.



Complete CleanKumasi.org webpage

The site is organized in four main sections:

Intro

Simple graphics and text convey the core functionality of the digital platform, as well as the main intent of the project "building communities against open defecation". Key metrics are updated in real time and show ongoing activity with the platform, e.g., number of flash responses received.

Clean Kumasi

HOW IT WORKS LOCATIONS ABOUT SHARE   

Building communities against open defecation

14 signs

1,230 responses

132 residents

HOW IT WORKS

Clean Kumasi places signs in spots in the community where open defecation, flying toilets, and dumping occur.

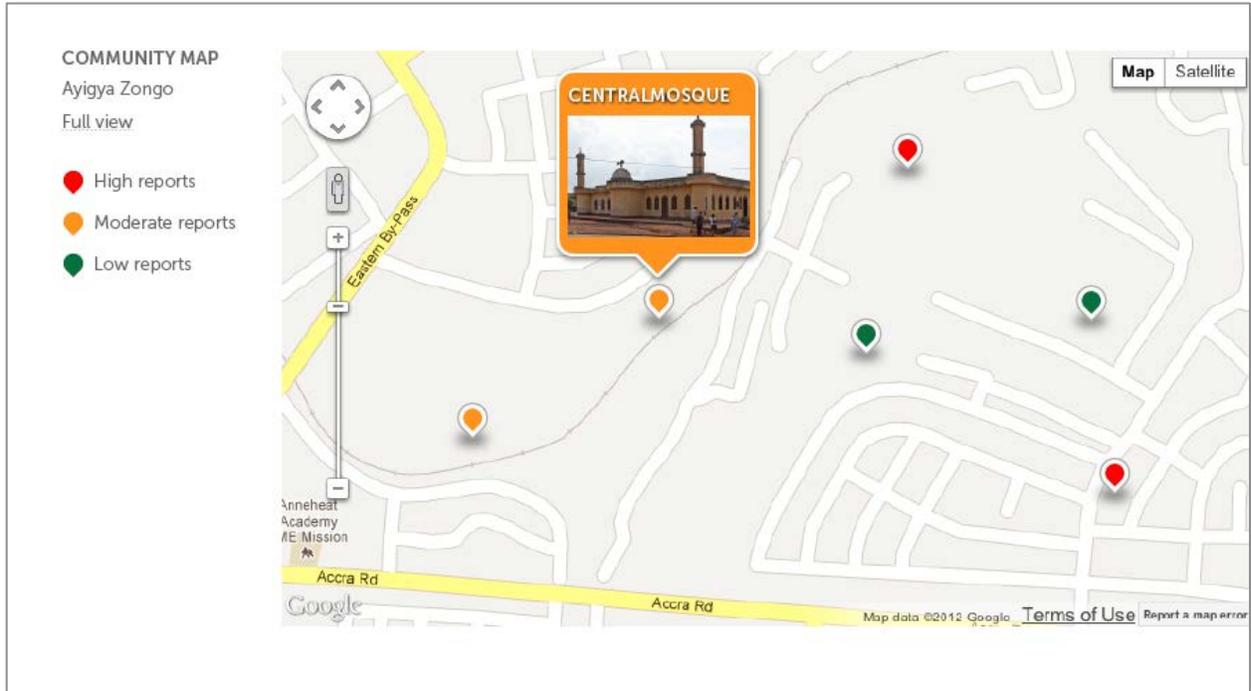
The signs ask residents to flash a number if they want to join the effort to stop open defecation. They receive an automated voice message with information on how to get involved.

Sparked by Clean Kumasi organizers, residents come together to confront open defecation. Natural community leaders emerge to demand and mobilize solutions to improved sanitation.

CleanKumasi.org intro section

Community Map

A customized Google map enables visitors to explore Ayigya and the selected sites. The pins' color-coding communicates the level of responses that each sign has received in the duration of the project.



CleanKumasi.org community map

Locations

A thumbnail list of all the locations allows the user to quickly glance at all the sites that are part of the system. Overall order, numeric stat, and color-coded band express the location's response level (high, moderate or low).

LOCATIONS

Sites of interest to the Ayigya Zongo community

- 2 High reports
- 8 Moderate reports
- 4 Low reports

 <p>Bolatongo 1 Description of this point of interest Description of this point of interest</p> <p>1,163 RESPONSES RECEIVED</p>	 <p>Bolatongo 2 Description of this point of interest Description of this point of interest</p> <p>34 RESPONSES RECEIVED</p>	 <p>Central Mosque Description of this point of interest Description of this point of interest</p> <p>8 RESPONSES RECEIVED</p>	 <p>Church Description of this point of interest Description of this point of interest</p> <p>4 RESPONSES RECEIVED</p>
 <p>Dump 1 Description of this point of interest Description of this point of interest</p> <p>1,163 RESPONSES RECEIVED</p>	 <p>Dump 2 Description of this point of interest Description of this point of interest</p> <p>34 RESPONSES RECEIVED</p>	 <p>LastStop Description of this point of interest Description of this point of interest</p> <p>8 RESPONSES RECEIVED</p>	 <p>Sakafiya Description of this point of interest Description of this point of interest</p> <p>4 RESPONSES RECEIVED</p>
 <p>Dump 1 Description of this point of interest Description of this point of interest</p> <p>1,163 RESPONSES RECEIVED</p>	 <p>Dump 2 Description of this point of interest Description of this point of interest</p> <p>34 RESPONSES RECEIVED</p>	 <p>LastStop Description of this point of interest Description of this point of interest</p> <p>8 RESPONSES RECEIVED</p>	 <p>Sakafiya Description of this point of interest Description of this point of interest</p> <p>4 RESPONSES RECEIVED</p>

CleanKumasi.org location cards

About

The About section summarizes the objectives and process of the project. The project story is augmented with key metrics that are dynamically updated by the system as the project progresses. It conveys Clean Kumasi's transparent and open approach by offering free open-source resources for the larger CLTS community of practitioners. For example, to encourage replication, location data and visual-design assets can be easily downloaded from the site.

The screenshot shows the 'ABOUT' section of the CleanKumasi.org website. It features a blue background with white text and icons. The 'ABOUT' section is divided into two rows of three metrics each. The first row includes: 24 Community Meetings Organized (with a group of people icon), 3,560 SMS Action Updates to Residents (with a mobile phone icon), and 102 Hugs Received (with a heart icon). The second row includes: 4 CLTS Education Sessions Completed (with a clipboard icon), 18 Community Members Interviewed (with a speech bubble icon), and 102 Days the Project Has Been Active (with a clock icon). Below the metrics is a section titled 'What is Clean Kumasi?' with a text box explaining the project's goal to eliminate open defecation in urban neighborhoods. To the right of this text is a gallery of six images: a community meeting, a sign asking 'IS THIS PLACE DIRTY WITH TOILET?', a group of people, a person standing near a building, a person walking, and a large pile of trash. Below the gallery is a section titled 'Why Clean Kumasi?' with two paragraphs of text. To the right of the text are two buttons: 'DOWNLOAD FULL DATA SET' and 'DOWNLOAD SIGN FILES'.

ABOUT

24 COMMUNITY MEETINGS ORGANIZED	3,560 SMS ACTION UPDATES TO RESIDENTS	102 HUGS RECEIVED
4 CLTS EDUCATION SESSIONS COMPLETED	18 COMMUNITY MEMBERS INTERVIEWED	102 DAYS THE PROJECT HAS BEEN ACTIVE

What is Clean Kumasi?

Clean Kumasi is a tool to assemble and activate residents to eliminate open defecation in their communities. It is a living experiment to see if a digital platform relying upon phones, maps and databases can solve the riddle of how to bring together the different kinds of residents of bustling urban neighborhoods to tackle, well, the shit situation.

Why Clean Kumasi?

Nationally, over half the population of Ghana uses a shared latrine; the highest rate in the world. That means half of all Ghanaians wake up each day, leave their homes, wait in line and do their business in a place where they have no control over cleanliness. Changing this reality begins with individuals and their communities. It begins in neighborhoods like Ayigya.

Clean Kumasi is a living experiment in building social capital to tackle the problem presented by open defecation. For the individual, it can be much nicer to shit outside when pay-to-use public toilets with limited hours are your only alternative. Even in the best of situations, the accessibility needs of women, children and the infirm often go unmet by public toilets. For communities, the health effects of unconfined feces are devastating. Shit carries serious diseases that affect poor children and the vulnerable the hardest. It is the unsolved public health crisis that kills a child through diarrhea every 20 seconds.

A transformative methodology called Community-Led Total Sanitation (CLTS) has arisen to trigger rural communities to become certifiably "free from open defecation." Adapting this approach to cities poses its own challenges, including defining who the community is and recruiting leaders take action. This initial step to CLTS is the focus of Clean Kumasi. Because informal community leaders may be harder to identify in urban environments, Clean Kumasi capitalizing on the prevalence of mobile phone among Kumasi residents to recruit digitally. Residents can use their phones to join Clean Kumasi, receive notices of community meetings, and get updates on CLTS-inspired activities. The ring of a bell to gather the village becomes the ring of a mobile phone telling neighbors about an action near them.

[DOWNLOAD FULL DATA SET](#)

[DOWNLOAD SIGN FILES](#)

CleanKumasi.org About section with gallery

Logos

This portion of the sites is reserved for organizations that have funded and designed the digital platform. The USAID logo appears prominently (in compliance with graphics guidelines) in addition to the logos of Water and Sanitation for the Urban Poor and IDEO.org.



CleanKumasi.org footer with partner logos

Backend

The backend that supports the new digital platform is comprised of three core components that are connected to enable the seamless interaction that residents will experience.

Android Phone + Telerivit

The Android phone runs Telerevit, an SMS and Voice server that 'listens' for incoming calls/flashses and forwards the phone number to the IVR service.

Twilio

Twilio provides the IVR service that delivers messages and collects location data through a phone call. This data is then passed along to the Heroku database.

Heroku

The Heroku database enables the system to store residents' phone numbers, locations and other information. This data is then used to populate the CleanKumasi.org site and the admin site used by the community organizer to plan meetings and to connect with residents.

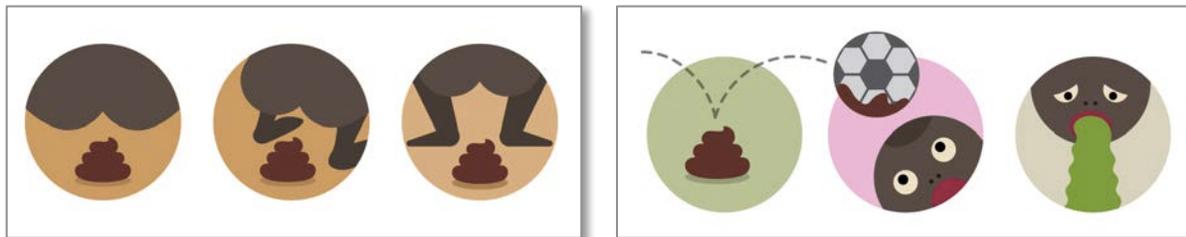
As originally hoped, IDEO.org has harnessed these free and open-source software/frameworks to build a low-cost implementation. Calls still cost money, however. The start-up Twilio has committed an in-kind donation to cover calling costs generated on their system. In exchange, IDEO.org will update Twilio and provider guest speakers about the Clean Kumasi project at their offices, creating another bridge between the Silicon Valley start-up sector and U.S. humanitarian-aid community.

4. Initial Platform Testing

Initial testing of the new digital platform has been ongoing through this phase of work. As soon as a component was redesigned the team submitted it to the local NGO partner WSUP for feedback. Through this process drastic improvements have been made to all the resident-facing components. The sign's language and visual expression have gone through four iterations of design to a place where the team feels confident that they are the best expression possible with current research. When implemented in the community, their ability to elicit responses from the residents will be tested again.



Sign communication and visual design evolution



Iconography evolution and education visuals experimentation

The IVR system has also been revised for clarity as well as cultural competency. The team has engaged Ghanaian voice talent for both the English and Twi versions in order to ensure the communicability of this component.

5. Next Steps

The digital platform and its tangible components will continue to be iterated and refined throughout the year, including after the platform's relaunch in mid-January 2013. The close collaboration with the NGO partner on the ground in Kumasi, Ghana will enable the team to evolve the system's components in order to continuously improve relevancy to the residents and community members of our pilot site Ayigya in Kumasi.



MILESTONE 4

PLATFORM RE-LAUNCH

Testing a Digital Platform's Ability to Recreate the Success of Rural Community-led Total Sanitation in Urban Communities

Purpose

This document is in partial fulfillment of IDEO.org's contract with USAID (Grant No AID-OAA-F-12-00009) to design a digital platform's ability to recreate the success of Community-Led Total Sanitation (CLTS) in an urban area. It describes the re-launch of the digital platform (created four months after the project start date, and released in the field in Kumasi, Ghana, that same month).

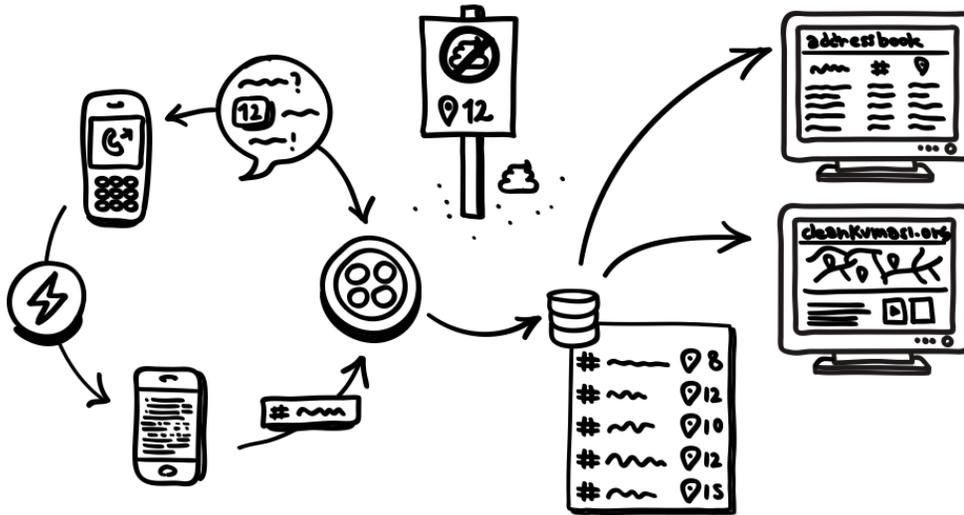
Contents

1. Platform Pre-launch Activities
2. Official Platform Launch
3. Preliminary Platform Statistics
4. Planned Next Steps

1. Platform Pre-launch Activities

Stress Testing the Digital Platform

Before officially launching the platform the digital portion had to be thoroughly tested in Ghana. As the system relies heavily on phone-based systems that are located in the US, a series of minor hurdles has to be ironed out in order for Kumasi resident to reach the digital service.



Visual diagram explaining the backend that supports the digital platform

As the left portion of the above diagram depicts, the system relies on the Twilio service to call back users after they have flashed the appropriate phone number. This is achieved through relaying the flashing number through a local Ghanaian Android based phone, to a server in the US that then both registers the user mobile number into a database (See Milestone 3A - Platform Refinement for more detail), and calls back the user in Ghana.

The biggest hurdle in this process was the formatting of the relayed mobile number to conform to international calling formats. After a week of trial and error the team was able to create a server-side script that formatted the number correctly and enables the system to successfully call back flashing users in Ghana.

The weakest link in the digital platform remains the Android phone in Kumasi that relays the flashes to our system in the US. The phone needs to always remain charged, loaded with credit and with strong network access in order to effectively relay the numbers. This variable has proven harder than expected to maintain, as we don't have a dedicated space where to keep the Android phone.

Printing the New Signs

In preparation to the platform re-launch, the new set of 18 signs was printed locally in Kumasi. Unexpectedly, this process has proved to be extremely easy and affordable as most local businesses already rely on large plotted graphics to advertise. After being

printed the signs were cropped to replace the previous version on the hardware that we had been installed in the neighborhood during the first round of fieldwork.



New signs are plotted and then trimmed, ready to be installed.

Unveiling the New System

On January 25th 2013, as part of the pre-launch activities, our partner in Kumasi WSUP organized a community meeting to unveil the new signs and demonstrate the flash based platform.



The community group discusses the new flash-based system and poses with the new signs

As part of the demonstration a few participants were encouraged to try the system. Due to the new strong visual design of the signs themselves most of them, although they couldn't read the signs themselves, were able to understand the underlying message. Overall the feedback on the signs was extremely positive, the community members felt that the new signs provided an effective way to engage a portion of the neighborhood, as well as being more locally appropriate.

The new flash based system was also well received. By removing the cost to submit a report, a major hurdle that was encountered during the first round of fieldwork has been removed.

2. Official Platform Launch

The official platform launch took place on February 2, 2013. Our local partner WSUP spent the day in Ayigya replacing the old signs with the new version.

The team was met upon arrival by the local council women's leader Ima Abuima whose input has been invaluable in the community meetings and to the entire project. Also waiting were some youth from the community meetings who volunteered to help with the sign posting.

Most of the old hardware used for the signs was intact and had not been destroyed. Some community members had even repaired some of the signs, showing the commitment and support that the project has gathered in the community. Three of the old signs had however suffered some level of abuse, and one has been completely torn down. New hardware was installed to replace what was missing or damaged.



Eric with WSUP installs the first sign of the day

The installation process took most of the day, with 11 locations and 18 signs to put up all across the neighborhood. The process attracted a lot of attention from local residents, and the team on the ground used the opportunity to engage people and have them both try the system as well as give impromptu feedback.



Residents gather around the posting team and share their thoughts

The general impression gathered was that many people had seen the signs but did not know who had put them up or who were responsible for them. The new signs with vivid graphics especially the one depicting someone in the process of open defecating sparked a lot of controversy and conversations. One lady talking with a friend said: "That is you squatting over the pile of feces!" Regardless of the digital platform's ability to bring

together the community, hopefully the new signs will continue to spark conversations around the problem of open defecation.



Faustina (WSUP) engages local residents by showing them the new signs as they get installed

During the sign installation near the Ayigya public school, the team had the opportunity to talk to a student Amina Abubakar (13 years old). She had just finished cleaning the teacher's toilets, which she said to be more hygienic, compared to the toilets available to students. She said she would never use the toilets given the horrendous states that they are in. She continued by saying: "Students who dare to use the toilets during school

hours risk getting the stench sticking to their school uniforms. For most children, it is much nicer to defecate outside rather than to use the uncomfortable school toilets”.



The team engages with local school children

During the day community members expressed their frustrations about the state of sanitation in the neighborhood, and sometimes indicated new areas, which they wished protected by the installation of new signs.

3. Preliminary Platform Statistics

Inbound Flashes

In one month from re-launch, 42 unique flashes and 70 total were received by the Clean Kumasi platform. For context, the neighborhood has roughly 2,000 permanent residents as reported by community leaders. The high prevalence of squatters in an expansive, incomplete and abandoned low-income housing government project adds to the unreliability of population data. The project team regards the total number of unique flashes as a positive sign of Clean Kumasi’s traction in the community, although it is not seen as a completely satisfactory figure. Alternate means of getting out the word will

need to be pursued beyond the signs. It is hoped that commencing with CLTS activities and mobile marketing will expand usage to new residents in support of improving our sanitation indicators amongst the community.



Dates: February 15 - March 15

Platform Statistics Summary:

Daily Unique Flashes
Total 42 (of 70 received)
Average 1.76
Min 0 | Max 6
Mode 1

Interestingly, the spike of 6 flashes per day was experienced experiences on the day of re-launch and sign re-posting as one might expect, but on March 3, fully two and half weeks afterwards. The team expected that posting new graphically provocative signs in the neighborhood would cause an early peak in traffic. Many impromptu encounters and educational conversations happened on the day of reposting, including residents flashing the number with the guidance of WSUP staffers who were then installing the signs. Yet, the peak of flashes came from a formal meeting with community leaders that occurred on March 3. This underscores the finding from our first prototype that direct intensive in-person meetings are the best way to gain engagement rather than through distributed digital outreach.



Local resident enquires about the signs during the installation and tries the flashing system

Location Reporting

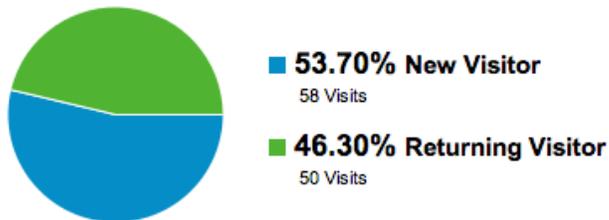
Residents are not using the built-in location identification function. In the callback from Clean Kumasi, a user is able to enter a number from the signs to indicate “where is important to you.” In the automated call, this input is optional and if nothing is entered the script progresses to a closing statement after a brief pause. The team debated whether the function was worth keeping as a continued point of exploration about micro-communities based on the first prototypes emphasis on landmarks. Ultimately, it was thought that knowing locations could allow for segmentation of users around their self-reported areas of interest. Repeat CLTS sessions with smaller groups was seen as an effective technique in previous CLTS programs in urban Ghana. Hence, why the team decided to maintain an interest in testing location segmentation. Unfortunately, only one user entered a location number and they entered multiple locations rendering moot the desired outcome of reporting a location for user segmentation.

CleanKumasi.org

The microsite CleanKumasi.org is used to represent the project to an external global audience. It is a key outlet for project communication and is part of the required ongoing promotion to the aid community. Bringing CLTS from the village to the urban context will require, well, a village of donors, practitioners and general interest. The website gives a top-level explanation of the project with the freely downloadable data and elements to both evaluate Clean Kumasi and replicate it.

So far, the microsite has not been marketed or shared at all. Through natural discovery, the microsite has found 108 visits with 69 unique visits mainly from the United States, United Kingdom, Ghana and Australia in that order. As the platform re-launches we hope to disseminate the microsite more widely with other forthcoming project communication.

Visits to CleanKumasi.org (Unique Visits = 69)



Source: Google Analytics as of February 24, 2013

4. Next Steps

As the community builds up around this initiative, we have selected a CLTS facilitator to engage with the local residents. Formal steps have been taken to introduce the facilitator to the local leadership as well as the community. On the CLTS side, we the next step is to host a live session with the community that has been called upon through the digital platform

Although the initial statistics from the digital platform look promising, new outreach initiatives need to be designed to spread the word and encourage residents to engage both digitally and in person. Local religious leadership had offered both to spread the word through exhibiting weekly forums. WSUP has begun to draft activities for an intensive week of get-out-the-word activities culminating in a triggering activity.



MILESTONE 4

UPDATED INDICATORS

Testing a Digital Platform's Ability to Recreate the Success
of Rural Community-led Total Sanitation in Urban Communities

1.0 Introduction

IDEO.org and Water and Sanitation for the Urban Poor (WSUP) are testing the hypothesis that an innovative information communication technology (ICT) platform can be used to recreate the success of Community Led Total Sanitation (CLTS) in an urban context. Thereby, the team is exploring how a digital platform can infuse demand for sanitation and facilitate community action to increase use of improved sanitation and hygienic behaviors, and decrease open defecation. To assess the ability of a digital platform to achieve these results, a Baseline and Monitoring Plan (BMP) has been developed to track sanitation conditions and behaviors. In accordance with the BMP this first monitoring report seeks to measure progress toward identified indicators since the baseline report. The indicator areas are as follows:

- Knowledge and attitudes around sanitation
- Behaviors, use and maintenance of improved sanitation facilities, and hand washing
- Engagement with the digital platform and community meetings/activities

2.0 Pilot Status: Platform redesign, preparation for CLTS program and community engagement/actions

2.1 Platform Redesign

As recognized in the Platform Refinement report, the technical and linguistic literacy capacity of the community, plus the cultural preference for voice communication above short message service (SMS), have led to a redesign of the signs and digital platform. The platform now serves as a community organizing tool by which pictorial signs prompt community members to get involved in stopping open defecation and dumping of feces by flashing their numbers to a phone book system that can be used to contact them about future community actions and meetings. Following the baseline-reporting period, pilot efforts have focused on launching the redesigned platform and preparing for a more traditional CLTS program.

As of February 1, 2013, when the longitudinal survey participants were interviewed for this monitoring report, the new signs and voice system of the refined platform were not yet in place due to technical and logistical challenges that resulted in a delay. The signs and voice system were installed/activated on February 13, 2013. Due to the significant changes in redesign of the platform, a series of stakeholder engagement events had to be organized with diverse groups to ensure the new signs and voice system would be understood.

Also underway is the development of a more traditional CLTS program with an experienced Ghanaian CLTS facilitator. Due to the initial focus of the development of a digital platform in the pilot, and the need to build the CLTS program around the redefined tool, it is now clear that a more significant non-digital CLTS component is necessary. This has resulted in more planning on behalf of WSUP. Further, the traditional CLTS approach of building community disgust and shame to drive action has not widely occurred. Such motivation is expected to be particularly crucial in this urban context, where the complex barriers to improved sanitation (e.g. working with landlords, city authorities) may take longer and more committed community action than in a rural context. Thus it has been important to identify a highly qualified CLTS facilitator with urban experience to develop an appropriate CLTS program to build on what has already

been done while expanding and amplifying community motivation.

2.2 Community Engagement

Four community meetings have been held since the start of the project. The first was organized on November 29th 2012 during the IDEO.org and WSUP team's field visit. As the first of a series of meetings, the main objective was to gather a group of people from the community who will form the basis for the community's engagement with the platform. 42 community members attended the meeting, some of who had earlier engaged with the platform by way of calling, flashing or texting. The local committee head that worked to organize the community members invited others in attendance. During the first meeting, the community members decided to show their commitment to the project by hitting the ground running with a cleanup exercise at one of the hotspots for open defecation, Last Stop, close to meeting location.

The other meetings had been organized by WSUP staff and a group secretary chosen by the community at the first meeting on December, 1st 2012 and January, 25th 2013, with the last meeting taking place on the February 17th, 2013. The meetings have maintained a fairly consistent number of attendees, ranging from 42 attendees in the first meeting to 38 attendees in the last. During the second meeting, the group elected its leadership by strategically selecting leaders from every part of the community. This is to enable the mobilization of micro-groups for which the sector leader would be responsible. The meetings are usually led by one of the chosen leaders while the project coordinator occasionally facilitates discussions to focus on desired objectives. In the last meeting, the group was introduced to the new signs and the discussion that followed sought to gather group opinion about the new materials.

In the third meeting, the group leaders updated the group on the course of action from the second meeting, which was to send a three-member delegation to introduce the group to the Ayigya Zongo chief (Sub-chief) and the Assemblyman of the area. After the formal introductions and acceptance of Clean Ayigya as an organised force, the group agreed they could be fully effective in the community. All the preliminary arrangements have been completed and a formal visit to the community leaders is set for March 3rd, 2013. The group, with the help of the project coordinator, is also working to have a relevant Kumasi Metropolitan Assembly representative present in the next meeting. Below are some suggested solutions to open defecation resulting from group discussion in the community meetings:

- Hire a van for announcements to tell the general community about the project, and to warn people about the consequences of indiscriminate dumping of human/solid waste.
- Rehabilitation of the broken down refuse collection truck that used to service the area.
- Project sponsors could buy a collection truck for the community, which will reduce indiscriminate dumping and the money generated from the services rendered could be used as on-going support for the project. [The project coordinator explained that there was currently no funding for that]
- More signboards should be installed to cover the larger community
- The formation of an incentivized volunteer group to guard against open defecation
- Find appropriate solutions for children to go to toilet
- Organize more cleanup exercises at a regular basis

- Public toilets should be run 24/7
- Build more in-home toilets

The meeting have encountered scheduling difficulties due to Islamic and Christian celebrations and holidays. For these meetings to occur regularly and be more sustainable, there is a need for the emergence of more natural leaders who would take charge and drive the group. This is one of the intended outcomes of the CLTS facilitation.

2.3 Community Actions

On January 30th, the community benefited from the installation of an industrial size waste container - a solution put forth in the community meeting as a major necessity to curb indiscriminate dumping at that particular location. It was installed at a location where the previous cleanup exercise organized by the Clean Ayigya group had removed and burned waste. With the installation of the waste container, the illegal dumpsite has now acquired the status of a formal dumpsite with a dedicated caretaker. After speaking with the caretaker, it was noted that the waste container had been installed by a private sanitation company, Asadu Royal Waste Management, the same company in charge of the other official dumpsite in the area (called Bolatongo). Residents have to pay 20-30 pesewas depending on the weight of the waste to be dumped. The money collected is used to fund the periodic emptying of the container and of the retained earning, a portion goes into the community development fund whilst the caretaker keeps the remainder per the pertaining contract. For more details about the management of the waste container in relation to the Clean Ayigya group, see Appendix 1.



A waste container installed at Last Stop to manage solid waste

The Ghana Muslim Students Association of Ghana, Kwame Nkrumah University of Science and Technology (KNUST) wing, organized a massive cleanup exercise at Ayigya as part of a weeklong celebration. The student leader of the group, Lawal Habib, stated: *“This is our own way of giving something positive back to our society”*.

Ayigya had been selected due to its predominantly being a Muslim community and its proximity to the school (KNUST). One student added: *“Muslims are very hygienic people, it is worrying to see Ayigya plagued with such filth”*.

One of the few community members who joined the students in the cleanup said: *“We don’t always have to wait for external help to come, but should be able to do certain minor things like this for ourselves”*.



The Ghana Muslim Students Association, KNUST

In light of these actions by the community and supported by WSUP, relatively limited formal engagement has occurred since the baseline report, due to the delays in launching the new platform and CLTS program. Consequently, the qualitative findings summarized below identify limited changes in the indicator areas. However, greater changes are anticipated as the CLTS program launches with the refined digital platform.

2.4 Urban CLTS Program

Looking forward to next steps, the urban CLTS program will focus on expanding the sentiment of disgust and shame (as well as pride) within the community to create necessary demand. This will be achieved through triggering sessions which include transect walks and mapping of open defecation, as well as health demonstrations. The reactions to these exercises are intended to encourage the community to develop their

own solutions (with support), whether they are to build household latrines, alter the pricing scale of public toilets, focus on solutions for children, or other suggestions identified above.

The digital platform will continue to serve as a tool for WSUP and the Clean Ayigya committee leaders to communicate with community members as they meet for triggering sessions and to work on community-led solutions. Additionally, any further opportunities to utilize digital innovations will be pursued.

3.0 Qualitative Findings



WSUP's Faustina interviews one of the households in the sample

3.1 Interviewee Profiles

Interviews for this monitoring period were conducted February 2 - 6, 2013 by the same WSUP staff person who conducted them previously. In accordance with the BMP, the same 10 longitudinal study participants from the baseline report were interviewed for this monitoring report, with one exception. (Please refer to the Baseline Report for a summary of the interviewee profiles and Appendix 2 of the report for detailed baseline data.)

The one participant from the longitudinal sample group who could not be relocated for this monitoring period was replaced by a man with similar behaviors and attitudes, in this case a strong preference for only open defecation. The questions asked of all participants were very similar to the baseline survey, though modified somewhat to

specifically identify any changes to sanitation behaviors, conditions, attitudes, health knowledge, or engagement in the digital system and community actions. The survey is attached in Appendix 2.

Among the toilet attendants interviewed for this monitoring report, all but one had been previously interviewed; though it was determined in the BMP that these participants didn't necessarily have to be consistent. The toilet attendants, as previously, worked at the affordable housing toilet, the market toilet, the new Masasa toilet, and the old Ziko toilet. The survey for toilet attendants remained the same as many of these were designed to pick up on observed changes in behaviors and usage.

3.2 Sanitation conditions and behaviors

As expected, there did not appear to be significant changes in this area since pilot progress. However, participants did report some changes to the cleanliness of localized areas. No new household toilets were reported, and the monitoring view was expanded to ask participants if any neighbors had household toilets; only one participant identified a neighbor with a toilet.

However, as described above, a notable change did occur at the open defecation and informal dumpsite at Last Stop with the community-initiated cleanup and waste container installation. As a result indiscriminate dumping and open defecation has been greatly reduced in this area. The immediate residents around last stop are very pleased with this new development and are optimistic that it will go a long way to improve sanitation in the area. Four participants mentioned this improvement, even though they had not been part of the clean up exercise.

3.2.1 Use and Non-use of public toilets

All participants said that their public toilet usage had not changed - neither increased nor decreased, or shifted to using another public toilet - since the first survey.

Some responses to the question about women's use of toilets at night fluctuated. However, participant explanations clarify that some use the old toilets, which are unlocked, but the majority rely on plastic bags, which are dumped in the morning. Answers similarly fluctuated around the question of children using public toilets, but explanations revealed that some use the public toilets, while it is common practice for small children to use the dumps or chamber pots with bags.

Potentially indicative of some positive changes, six participants said that there has been a decrease in the occurrence of open defecation. Specifically, two of these cited the improvements at Last Stop as evidence of this, and three people said that the signs were deterring people from defecating and dumping feces around the signs. One person stated that a decrease in open defecation was due to improved maintenance by toilet attendance resulting in higher usage. However, among the toilet attendants, three said that the number of people using the public toilet hadn't changed in the last month, while one said that the number had decreased because that toilet hadn't been de-sludge recently.

Those participants who indicated that household members rarely or sometimes rely on bags indicated that bags are disposed of at the refuse dumps (both Last Stop and Bolatongo) as well as around or in the toilets, and in one case, the alleyways. However,

two of the toilet attendants suggested that the number of bags being dumped around the toilet area had decreased. One cited the cleanup and waste container at Last Stop as the reason, the other hypothesized the sign has deterred people and even suggested putting up another one on the other side of the toilet to deter dumping and open defecation in that area. Still, the toilet attendants all reported that the occurrence of open defecation around the toilets remained at a similar level.

3.2.2 Reasons for not using public toilets

The participants identified similar reasons for others' non-use of public toilets as they did previously, including not being able to afford the cost or not wanting to pay, the distance, and the poor conditions of the facilities. But a few more answers this time were related to ignorance and a lack of education or knowledge about the consequences of open defecation, or an attitude/behavior problem. One participant acknowledged it was his personal preference to defecate in the open.

3.2.3 Hand washing

Hand washing, an indicator notoriously difficult to measure, continues to appear a rare practice. The toilet attendant responses continue to suggest there is no, or very minimal hand washing at public toilets. Given four possible percentages of people who wash hands (all- 100%, most-75%, some-50%, or a few-25%) one attendant stated that less than "a few (25%)" of customers wash their hands, and another simply responded, "people don't wash their hands here." The others selected "a few (25%)" of customers wash their hands.

However, three participants who hadn't previously mentioned practicing hand washing specifically after using the toilet did mention it during this survey. This could be indicative that continued surveying on the topic of sanitation and health might be influencing their answers, as it seems there have not been any hand washing infrastructure improvements at public toilets.

3.3 Attitudes toward sanitation

Attitudes toward sanitation and open defecation were relatively unchanged on the whole:

- Five participants still indicated that open defecation remained a "very common/widespread" problem in the community, compared to eight participants last time.
- One participant's answer changed from "very common/widespread" to "common," and another from "very common/widespread" to "not so common."
- In contrast, another participant changed her answer from "not so common" to "common." This same participant also changed her answer about the use of plastic bags from "never" to "sometimes," suggesting perhaps a new, more realistic, acknowledgement of her own behaviors and those of others in the community.



Interview with Mamoda Taufig (replacement for Edu Kwashie), who solely prefers to open defecate

All but one participant felt that open defecation was “unacceptable” rather than acceptable (all previously felt that it was unacceptable). The exceptional case was the young man who openly preferred open defecation. On the issue of sanitation’s importance in the community, two participants ranked sanitation as a less important of a priority than they had previously, while three people ranked sanitation as having greater priority than they did last time. This variation suggests there may be some confusion around the question, such as whether it refers to their own personal prioritization, or reflection on the community prioritization in general (as intended).

Participants were newly asked how they thought open defecation could be stopped. Five mentioned public education/awareness around the issue. Four people mentioned disciplinary measures against offenders, including fines, and one person suggested having household toilets and allowing children to use the public toilet for free. In contrast, the man with a preference for open defecation stated, “For me, nothing can make me stop, not even with an in-home option.”

Participants were asked again if they thought that people needed household toilets, and were newly asked if they thought a household toilet was possible for them. Five participants said that they thought it was possible for them to have household toilets, indicating that their houses had the necessary space and/or accessibility for de-sludging, but one person noted money would be the challenge. Four of those who did *not* think it was possible to have a household toilet or weren’t sure, mentioned that it depended on their landlord. Two of those who answered the question ‘no,’ or whom weren’t sure, mentioned the lack of space as the reason.

Participants were also newly asked about their awareness of the new Clean Ayigya group and their involvement. Six had not heard of the group while five had, and two said that they had attended a meeting. This suggests that there is a much greater need for expansion of the initiative to the greater community, which is intended as part of the CLTS program.

A new question also sought to assess if participants thought people were willing to work together to change the sanitation situation. All but one person said that they thought people were willing to cooperate in this way. Reasons for a positive view included previous evidence of cleanups and meetings, the community's common goal to improve the situation and sanitation's priority to many, and its impact on health. The single participant with a negative view felt that many people don't care about the state of sanitation.

3.4 Health Knowledge

Responses around health knowledge were relatively similar to those from the previous survey. Although there was some variation on the suggested causes of diarrhea, this seems reasonable considering there are indeed a variety of causes.

Five participants this time identified general causes of diarrhea as spoiled or contaminated food or water, where previously five made specific connections between exposed feces and diarrhea. However, when asked about connections between feces and health/sickness, eight participants mentioned that feces coming in contact with food (in some cases via flies) or humans, or not washing hands after using the toilet, could cause illness. Two respondents suggested that the smell of feces could give you a headache/make you sick. The risk of coming into contact with feces was also mentioned as a health risk by some when asked about any impact on health from using the public toilet. Another impact of public toilets was risk of chlamydia or "white" to females (mentioned by three people, compared to five previously). The variation of answers, and health concerns about using public toilets continue to indicate that health education is indeed needed as the pilot continues.

3.5 Knowledge of the System

At the time these surveys were conducted, the new signs had not been put into place. Therefore, all participants indicated that they had understood the signs, if not on their own, from the previous interview with the WSUP staff person.

In this survey, participants were also asked if they thought the sign would deter people from practicing open defecation or dumping feces, giving interesting responses. Two people said it would not deter people, and four people said that it would, with one suggesting that people will think it has been placed by the KMA, and another noting that it already has deterred people. Two others conditionally agreed that it would deter people, though there need to be other measures in place, and that it deters adults, but not children. Two people (compared to one last time) noted that they point out the sign to others, explaining what it means. The Fulani chief mentioned that he spoke with the town chief and assemblyman about the signs and the campaign.

4.0 Summary of monitoring results by baseline indicators

The results from the qualitative research can be summarized to characterize the existing sanitation conditions and behaviors in the community. These are described for each of

the three indicator areas, with the conclusions from the baseline survey re-stated first, and followed by the updated conditions from this first monitoring period.

Indicator Area 1: Behaviors, use and maintenance of improved sanitation facilities, hand washing -

- The wide majority of people living in Ayigya do not have household toilets and rely on public toilets.
 - *This remains the current state.*
- Due to a variety of barriers to public toilet use, some people also practice open defecation and dump feces in bags around the community. For this reason, solid waste collection is linked with sanitation.
 - *This remains the current state, however signs, recent cleanups at dump sites and installation of dumpsters may be deterring people from dumping/open defecation in localized areas.*
- The condition of public toilets and the cost of using them are likely key reasons for nonuse
 - *This remains a reason, with an additional important reason identified as ignorance and lack of education.*
- Women, children, the disabled and the elderly are likely to make up of the majority of non-users due to inability/fear of traveling to toilets, restrictions against children and incompatible design for children, and the lack of willingness to give children money for using public toilets.
 - *This remains the current state.*
- People often rent their houses from landlords who have not constructed household toilets, or have removed them and are unwilling to install them. Some people have urged their landlords to build them toilets.
 - *This remains the current state, where the landlord issue was often raised as a reason that a household might not be able to have a household toilet.*
- Hand washing with soap immediately after using toilets is not practiced, as public toilets do not provide soap.
 - This remains the current state, though a few more participants mentioned hand washing, there are no new hand washing facilities/provision of soap at public toilets and toilet attendants continue to confirm that it is rarely practiced.

Indicator Area 2: Knowledge and Attitudes around sanitation

- The practice of open defecation and dumping of feces in bags is seen as a common problem and unacceptable.
 - *This remains the current state.*

- People think there is a need for household toilets, but recognize that it is a challenge for all houses to have them given the difficulties in de-sludging trucks accessing them via unpaved and narrow alleyways.
 - *This remains the current state, with the added barrier of landlords as identified above.*
- Many people know that exposed feces can lead to diarrhea and cholera, and recognize flies and unwashed hands as the vectors, but some do not know this.
 - *This remains the current state, though some responses have been more general about contaminated food and water, making it difficult to assess any change in health knowledge.*
- There are some who believe that using a public toilet can cause poor health, namely through the smell, and vaginal infection.
 - *This remains the current state, highlighting the need for health education as part of the CLTS program.*
- Community members have engaged in solid-waste cleanups in the past.
 - *Community members have continued to engage in cleanups and some are engaged in the Clean Ayigya committee to address the sanitation situation.*

Indicator Area 3: Engagement with the digital platform and community meetings

Similar to the previous report, engagement with the digital platform has been limited, as the redesigned platform has not yet launched. However, three community meetings have taken place in addition to the clean up exercise, as described in section 2. People continue to talk to others about the signs, in some cases explaining to offenders that the sign prohibits open defecation or dumping of feces. People feel that in some cases the signs are deterring people from these behaviors.



Some children took some time to read the signs after they had finished defecating at Last Stop

5.0 Conclusions

There did not appear to be significant changes in the behaviors and sanitation conditions in the community since the last report. However, some respondents noticed a decrease in the occurrence of open defecation attributing it to the improvements that occurred at Last Stop and the ability of the signs to deter people. Some people suggested the installation of more signs to further enhance this improvement. Although this is perhaps a secondary outcome from the signs, given that their primary purpose was to engage people in the digital platform, it is unknown if they will continue to deter people over time.

The toilet attendants on the other hand had not observed any significant changes in public toilet use and general behaviors. Respondents' public toilet usage had also not changed since the last survey as many of them still lacked in-home sanitation and sometimes practiced "flying toilets" or open defecation. Yet did not use public toilets all of the time due their inability/unwillingness to pay to use, the distances to facilities and access at night, and the poor conditions of the facilities.

The respondents acknowledged the importance of having toilets at home especially for children, women and the elderly but did not all feel that they could have one due to cost, land tenure and de-sludging challenges. Land tenure has continued to be a prominent constraint to toilet ownership as tenants were not willing to invest in permanent facilities and reported their landlords were unmotivated to provide them, as there was a high demand for more rooms.

In the area of health knowledge, there is still some awareness of the dangers of exposure to excreta, but some lack of knowledge, particularly around potential health risks of using a public toilet. Hand washing is still a major behavioral issue that warrants much education and behavior in the community. This again points toward the need for a more strategic CLTS campaign that creates more widespread and intense demand, including for hand washing, and can also facilitate and support community discussions and actions toward solutions.

The community's engagement with the platform was also relatively limited, as anticipated given the delays in launching the improved platform. Consequently, the qualitative findings identified limited changes in the indicator areas, even though the community has been "primed" on the subject of sanitation through the testing and application of the digital platform. Given the depth and nature of these challenges, it is expected that addressing them will require community-led actions that are sustained and driven by an intense feeling of urgency and disgust among the large proportion of residents. With this context, and the relatively high penetration of basic technology, there is a strong potential that ICT can continue to play a partial role in community-led sanitation solutions. In addition, digital engagement must be mirrored by offline engagement, particularly for the elderly/disabled who may face the greatest obstacles toward using the current sanitation options. Greater changes are anticipated as the CLTS program launches with the redefined platform.

Appendix 1: Installation and Management of the Waste Container

The caretaker reported it was the Assemblyman of the area who the waste container installed. Although he was unable to be reached for an interview, a Clean Ayigya Unit Committee member revealed that the Kumasi Metropolitan Assembly had funded two official dumpsites for the community two years ago: one at Bolatongo (the only official dumpsite) and the other to be sited near the Ayigya school dump (Last Stop; same area where the community cleanup exercise had earlier occurred). Yet the requirement to firstly fence the school before installing the nearby waste container was not met due to lack of funds, and the initial plan had to be abandoned.

The owner of the waste company that had installed the waste container revealed that, the Assemblyman had approached him to install the container following pressure from the community members to improve the local solid waste management situation. Normally, he used one of his own workers as caretakers. But in this case, he had handed over the management of the waste container to one of the sector leaders from our community meetings (Ima Abuima) who, in a group with some other members from the community meetings presented him with pictures from the first cleanup exercise as proof of their commitment to the well being of the area. Upon seeing the pictures, the owner of the waste management company requested to speak to the implementers of the project, hence a meeting was arranged with the WSUP staff in charge. During the meeting, he expressed his appreciation for the project and looked forward to collaboration with the project to improving the area.



Ima Abuima, caretaker of the new waste container

Appendix 2: Participant Survey- First Monitoring

Interview information:

Interviewee Name:

Interviewer Name:

Date:

PART A: Behaviors

1a. Do you have a toilet in your house? Y/N (circle)

1b. Do any neighbors has toilets, which you know of?

2. Do you ever use a public toilet? Y/N (circle)

2a. If Y, which one do you most often use? _____

2b. Are you satisfied with the condition of the toilet? Y/N

3. Which describes your use of a public toilet? (*circle one*)

Always use

Always unless urgent

Most of the time

Sometimes

Never

3b. Has your use of public toilets changed since we last spoke? Y/N Explain

4. Do the women in this household use the public toilet at night? If not, what do they do at night?

5. Do children aged 10 or under use the public toilet? If not, what do they do?

6. How often do you have to rely on a plastic bag? (*circle one*)

Always

Most of the time

Sometimes

Rarely

Never

6b. If people in your household or your neighbors use a plastic bag, where is it disposed of?

7. Do you think open defecation is a common problem in your community? (*circle one*)

Very common, widespread

Common

Not so common, only a few people

Rare

No open defecation at all

8. Do you think there has been any change in the occurrence of open defecation and toilet-dumping (in bag) behaviors since we last spoke? Y/N Explain

9. Why do you think people do it? *Explain: [Please indicate what you think the most important reason is; but also indicate other reasons]*

What do you think would stop people from doing it?

10. When do you wash your hands?

PART C: Health Knowledge

1. Do you and your family ever have diarrhoea? This means you have liquid faeces at least 3 times a day or more or blood in your faeces. Y/N

2. What causes diarrhoea? *Explain:*

3. Is cholera ever a problem in your community? Y/N

4. Do you know what causes cholera?

5. Do you think there is a connection between faeces and health/sickness? *Explain:*

6. Are there any effects on your health/sickness from using a public toilet? *Explain:*

7. What do you think about open defecation (do you find it acceptable/unacceptable) and WHY?

PART D: Attitudes

1. Do you think it's expensive to use public toilet? Y/N

2. How much would you be willing to pay to use the public toilet?
3. Do you think that people need toilets in their homes? Y/N
4. Do you think its possible for you to have a toilet in your home? Explain
5. Do you think sanitation is a priority in your community? (*Circle one*)
Extremely important, important, somewhat important, not important
6. Have you talked to anyone else about sanitation since we spoke last?
7. Have you heard about the Clean Ayigya community meetings? Y/N
If yes, have you attended any? Y/N Why or Why not?
8. Do you think that people are willing to work together to change the sanitation situation here? Y/N, WHY?

PART E: Use of system

1. Have you seen the new signs about sanitation in your community? Y/N
2. What do you think the sign is for?
3. Do you think the sign will deter people from dumping/ defecating here?
4. Did you talk to anyone about them or take any other action? *Describe*
5. Did you flash the number on the signs?
6. Do you have a working mobile phone?



MILESTONE 5

UPDATED INDICATORS

Testing a Digital Platform's Ability to Recreate the Success
of Rural Community-led Total Sanitation in Urban Communities

1.0 Introduction

IDEO.org and Water & Sanitation for the Urban Poor are exploring an innovative mobile platform's ability to ignite and facilitate community led action. This is to increase use of improved sanitation, and decrease open defecation through the use of social pressure that has proven to be successful in the rural context. A Baseline and Monitoring Plan (BMP) developed to measure the extent to which this pilot is successful, specified indicators as well as a continued monitoring of indicators to accomplish Milestones 3 and 4, updated for this phase monitoring following an intensive Community Led Total Sanitation Facilitation (CLTS). This report, Milestone 5, seeks to make a longitudinal comparison of the previous data points and information collected over time to measure the progress made toward the identified indicators. It attempts to measure any changes in knowledge and attitudes around sanitation since the last report. It will also overlap in providing some indication of behaviour changes, use and maintenance of improved sanitation facilities, hand hygiene, and community engagement with the digital platform, meetings, and actions taken.

2.0 Platform Update

Most aspects of the platform, especially the signs, have undergone considerable changes towards becoming simpler and more locally appropriate (See Milestone 3A - Platform Refinement and 4b – Platform Re-launch). Due to the strong visual design of the new signs, even though many of the community members illiterate, they are able to understand the underlying message. Not all people however are able to understand what the signs require of them, i.e. initially by flashing the number on the sign, then meeting with others to deliberate to take action. The issue of which authority had put them up seem to bother people more than what the signs are for. To many, it makes a big difference if they had been put up by an NGO as opposed to the Metropolitan Assembly, as reporting to the latter might mean prosecuting a fellow community member. People definitely noticed the signs but were unsure of who was responsible for them and as such felt no connection to the signs themselves or to their message (the need to flash).

Therefore, prior to replacing the signs, a meeting was held with members of the sanitation committee to obtain their support and presence during the sign posting. Their presence was vital to eliminate the perceptions/doubts about the origin of the signs and also to give the community that sense of ownership and involvement.



A sanitation committee member tests out the platform by flashing the number on the sign

The platform statistics recorded a month after the re-launch showed an encouraging 42 unique flashes and 70 flashes total (see Milestone 4A). Afterwards however, this number reduced which could be attributed to the fact that some of the signs were missing largely due to weather damage during the rainy season as they were printed in sticker forms. Four missing signs had to be replaced and the hardware on which the signs are hosted was in some places missing (either stolen or brought down by the rains). The remaining signs were partially torn or hanging.

Due to the limited engagement with the platform, it became necessary to integrate with non-digital CLTS components. Therefore, alternate means of getting out the word about the project needed to be pursued beyond the signs. Several solutions had earlier been put forward by members of the community meetings and further refined by the community Sanitation Committee formed on 28th March 2013. The committee suggested among other things to use information vans, radio, and door-to door campaigns to inform the general community about the project and the series of action taken after a flash is received. It is hoped that commencing a more comprehensive CLTS facilitation activity is key to getting the community to take charge of their sanitation situation.

Before the replacement of the worn out signs on 10th April 2013, information was circulated around the community (through Mosques and Churches) to inform the

community about the activity, telling them to come out in their numbers and participate. It further gave an explanation regarding the follow-up actions after a sign is received i.e. calling participants up to meet and deliberate on an action plan taken of the sign posting.



Community members take charge every step of the way: trimming the signs for posting

To make it more engaging for the community, and for there to be that sense of ownership of the project, as they had previously complained about, the community was involved in every step of the sign replacement right from printing, trimming of the edges to posting of the signs. This time round, the signs were printed in flexi form instead of stickers, as the flexi are more water resistant. Most supporting stands were still intact, although five new ones had to be put up at Last Stop, Central Mosque, Bolatongo (2) and at the Market toilet.



Community members take charge every step of the way: Posting signs

The sign posting went took longer than expected to install as the team spent a lot of time interacting with the community. The interest shown by the community was encouraging; however, after just two days of replacing the signs and the some of the hardware, one of the signs had been brought down (reason unknown), and another had been covered up by posters advertising a Muslim holiday.

As usual, the sign posting attracted a lot of attention, with several people trooping to inquire about them. A short documentary film was also made to promote the signs, especially targeting the youth and children. The film was circulated around the 4 video centers in the community.



An excerpt from the short documentary film used to educate people about the messages on the signs.



Posters about a Muslim celebration stuck on top of the one of the newly posted signs – showing the, well, importance of celebrating a Muslim holiday!

3.0 CLTS Programme Implementation and Community engagement

3.1 Programme development

Developing a CLTS program around the digital platform called for extensive planning and iteration by the project staff, not least because the urban environment introduced the complexities of dealing with the multi-landlord system, land tenure and city planning authorities. Thus an experienced Ghanaian CLTS facilitator was brought in to evaluate and recommend the best way moving forward with an integration of traditional CLTS methodologies.

As it seemed with the progress made at that time, the traditional CLTS triggering stage had been jumped and the project had entered into the post-triggering phase. Typically, in CLTS facilitation, the community mapping exercise and the walk of shame would have identified the open defecation areas and helped community members to appreciate the extent of open defecation; thus they should have become disgusted and ashamed of their actions and would have moved them to want to do something about it. With the areas of interest already identified by a similar approach but limited in extent

(done with only a few members of the community and signs already posted), widespread disgust of the situation had not yet occurred.

Therefore, a long brainstorming session to identify what could be done alongside the platform was done with four experienced WSUP staff including the sanitation advisor who was visiting at the time. The final approach adopted a sort of reverse triggering methodology by way of following up on calls to meet and conduct a walk of shame to the reported points, and thus trying to build up emotional disgust in the people towards open defecation. Given the low numbers of people recruited, others recruited via direct community engagement were united with the flashers living near a particular location. Working initially with micro communities living immediately around the spots of open defecation, the natural leaders who emerged took charge and drove that particular group. The groups were later unified for a more comprehensive triggering meeting.

The external CLTS facilitator and WSUP staff planned specific thematic meetings with different groups to get all stakeholders on board. Starting from a meeting with the already sensitised community group, other meetings organised included a meeting with some women's groups in the community. One issue that stood out strongly during the discussion of the causes of OD was safety at night for women and girls. Many were afraid to use the public toilets for the threat of enduring sexual violence. Another meeting was organised with the youth groups (mostly male football clubs) and finally with the opinion leaders of the community. Meeting the leadership of the community was significant in the sense that, even though the few members from the usual community meetings and the natural leaders that had emerged were poised and wanted to take action, they could not operate in a vacuum. Being a big urban environment, it takes more than a few dedicated people to effect sustainable change.



The leadership of Ayigya Zongo community with the WSUP Country programme Manager, Musah Balima (right hand side of photograph)

3.2. Outcomes from the Sensitization session with opinion leaders

A community meeting was organised for the opinion leaders of the community on 3rd March 2013. Facilitated by an external CLTS facilitator, it was deemed necessary to bring all stakeholders together under one roof to meet and deliberate on their sanitation situation. Members of the previous community meetings had earlier suggested a more unified approach whereby all stakeholders are engaged. They suggested a formal meeting with the leadership of the community to gain the recognition needed to carry out their already identified action plans.

The meeting was held at a community Mosque near the Ayigya Zongo palace on 3rd March, 2013. With help of the Fulani Chief, a prominent member of the usual community meetings, all the relevant stakeholders were identified and approached for the meeting. In attendance was the main Ayigya Zongo Chief, all tribal leaders in the community (Fulani, Mamprusi, Mossi, Kotokoli, and the Sisisla). Also in attendance were the Ashanti Regional Imam, the Hausa Imam and their deputies, Unit Committee leaders and some women leaders. Many community members from the previous meetings were also present. From the implementing side were two WSUP staff and two external CLTS facilitators.

The main CLTS facilitator led a discussion on the sanitation situation in the community and, in a two hour-long session using photos on “crap” and maps of the community, there was a discussion on the causes and effects of indiscriminate dumping of faeces and waste management. The people present were asked to reflect on their own experiences with open defecation. People cited a lot of interesting instances whereby they either directly stepped in faeces or came close in contact with it. At the end of the discussion, the general picture painted was that various parts of the community were littered with faeces which rendered the community at high risk of various infections and the community was eager to do something about that.

Key causes of open defecation arising from the discussions were identified as:

- A. The toilet situation: It came out clearly that many members of the community lacked in-home toilets. As one leader puts it, “in-home toilet coverage is less than 10%”. On the other hand, he said “we are privileged to have a lot of public latrines, about 10 individual toilets which is more than enough for the community” the problem, many agreed, is the challenge of keeping them in good and hygienic conditions. Many of the public toilets are not well maintained. As earlier described (see milestone 3 on public toilet conditions), there are no lights, and no water for flushing and to ensure hand hygiene. Desludging times are usually delayed leaving the toilets to spill over and smell.
- B. Concerns were expressed around the opening and closing times of the public latrines in the community: The general situation was that, the attendants closed the toilets earlier than they are supposed to. Sometimes before 7 in evening, the period when most people are home from work and need to use the toilets, some of the toilets in the community are already closed.
- C. Children use of public latrines was also widely agreed as an important issue that needs to be addressed. Children in the community are mostly not allowed to use the public latrines as they usually mess them up. The community leaders agreed it was necessary to have a meeting with the public toilet operators to discuss the closing times and to try to resolve the problem of children’s use of toilets.
- D. Some schools, churches and mosques did not have sanitation facilities and the surrounding compounds were used for open defecation. One Imam expressed disgust and advised that it was a very bad situation that needed to be addressed.

Later the project coordinator presented the general idea of the project to the group using pictures and the signs; the series of actions that occurred after a flash is received was also explained. Many of the people said they had seen the signs and had wondered who had placed them but had no more information about them. Some

members acknowledged that the signposts sited at the open defecation points deter people from indiscriminate defecation. One man however was of the opinion that, flashing to report incidences of open defecation was an alien concept to the community and recommended a simple way of reporting that suited their way of life i.e. face to face reporting. Explaining, another of the community leaders said: “Ghanaians have an oral culture and would prefer to talk in person (face-face) rather than to text or flash.” Bridging this gap, it was suggested to engage the Environmental Health Officers (office at Ayigya) more closely in the community such that they become a key complaint repository, being more visible in the community and offering support but not in a role as prosecutors.

Moving forward with the project, one major suggestion from the community leaders was the use of information vans to educate the community about the messages on the signs and what is expected from them. The group agreed announcement systems through Mosques, Churches, Schools, and open forum on the radio station could also be a great way to get the message across. The group also suggested the creation and sensitization of a youth group that would put pressure on decision makers in the community to take action.

At the end of the meeting, the attendees formed a voluntary Sanitation Committee - Ayigya Zongo Water and Sanitation Improvement Committee (AZOWASAC) which is comprised of the major tribal heads of the community with the Ayigya Zongo Chief as its head and two Imams. The committee is to lead water and sanitation improvements in the community, with particular emphasis on sanitation. It was suggested that the members of the usual community meetings join in the larger group to be headed by the sanitation committee in order to team up and work effectively with the assistance of the project staff.

3.3 CLTS Implementation: sanitation week activities

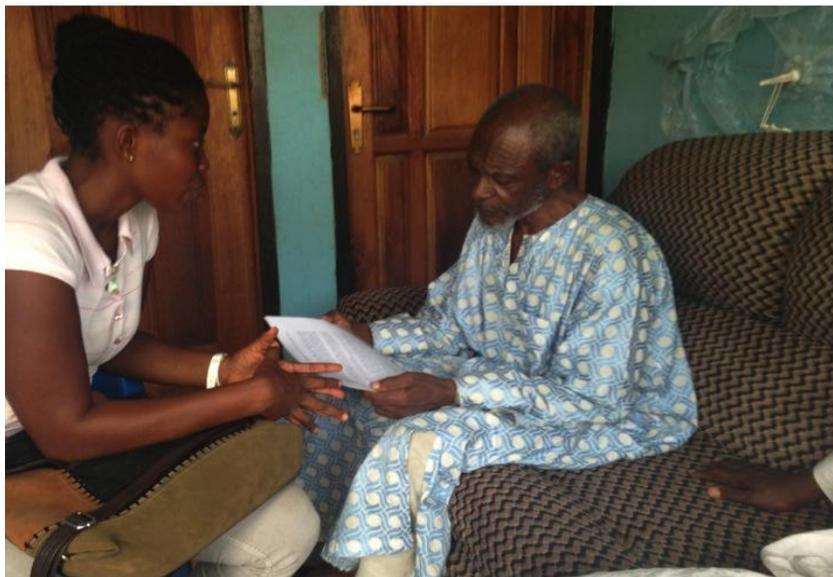
Sustainable sanitation improvement cannot be forced on the community by outsiders but must evolve from within the community through a process of collective local action stimulated by facilitators from within the community. Therefore, the Sanitation Committee, and some natural leaders who had emerged during the course of the project were trained by the CLTS facilitator and equipped with the requisite knowledge for effective CLTS facilitation in the community. Interestingly some of the committee members were already aware of CLTS concepts, which made the process even easier.

After the training, the Sanitation Committee with the help of the project staff set aside one week from (12 April to 19th) to promote sanitation in the community. The week was

also used to put into action the various offline activities earlier suggested to enhance the digital platform. Targeting all stakeholders, many dynamic and respected leaders in the community were contacted to contribute in their own way in spreading the word.

A. Role of Imams & Pastors

The leaders of the churches and mosques in the community were contacted and supported in delivering sanitation-related sermons during the sanitation week. They were encouraged to link sanitation to health (diseases like cholera and diarrhoea) and support it with verses from the Bible/Quran and also to encourage widespread realisation among community members that open defecation is the primary cause of many diseases, in order to give them a sense of urgency and help them appreciate the need to take action. These leaders also emphasised the collective benefit of an open defecation free neighbourhood, and urged members to flash the numbers on the signs in order to join others to take action. In addition they highlighted the importance of attending the trigger meeting and staying committed to improving sanitation conditions in the community during the sanitation week and beyond.



Engaging Imams to promote sanitation via Hutubas: WSUP staff Fausty with the Chief Imam

B. Public Address system announcement and Radio Programme

As earlier suggested, a public address van was used to disseminate information around the whole community. It was used during the signposting, urging residents to meet the

sign posting crew for further inquiries, and to urge the community to tune into the radio station (Zuria FM; “Telling the truth” programme, run in Hausa language) at 8 pm that evening for a discussion on the community sanitation situation. The 30-minute radio programme was attended by one of the Sub chiefs (also on the Sanitation Committee), 2 youth promoters, and WSUP staff. The discussion started with attendees expressing personal disgust for the state of sanitation in the community. It centred on open defecation and its effects on health and the benefits of achieving an open defecation free community; it also educated listeners about the sanitation committee formed and their responsibilities, the sanitation week activities and how important it is for everyone to partake, the signs and what they mean, and finally urged all to attend the big community meeting to mark the end of sanitation week.



Youth promoters and WSUP staff during the radio programme

C. Video for the cinemas

Cinema operators were contacted to help spread the word by broadcasting a short documentary video which included a promotion of the platform, and what happens during and after sanitation week. The video was circulated throughout the 4 main video rooms.

D. Role of Community Promoters

The project staff and CLTS facilitator recruited youth teams i.e. football and fun club team members and other self selecting individuals to discuss their interest in supporting the promotion exercise. Promoters were trained (role play, discuss potential challenges, strategies, etc.) and agreed on the messages to be delivered. There were two sub groups: 'PA Team' and 'House-to-house Team', to which people were assigned according to the perceived strengths of individuals. Their responsibility was to stimulate disgust about OD via sharing their frustrations and experience with others, using photos urging them to flash the number on the signboard nearest to them to take action. Follow-up on flashes included some sort of a mini triggering section, in order to recruit willing participants to join in the activities for the sanitation week.



Sanitation promoters interacting with a community member

E. Community Clean Up exercise

Following a recommendation by the youth promoters and the Sanitation Committee, a major clean up exercise was done on the principal street in the community. It was a huge opportunity to get more people involved as many community members joined in

from the nearby houses. WSUP supported the clean up exercise by buying some long brooms, nose masks, and rakes. More of such cleanups and conscious efforts are required to achieve desired results, as a clean community goes beyond the cleaning done in a day. It requires a commitment by all to change their behaviour and to invest in sanitation in order to keep a clean community.



Clean up exercise organised during the sanitation week celebration

3.4 Big Trigger day

The big trigger section set for the final day of the sanitation week (19th April) was later postponed to allow more time for planning for an effective execution on 27th April. This 3-hour long trigger section mostly targeted the new people who were not involved in the initial triggering or sensitization. In attendance was the leadership of the community (various tribal leaders), some urban sanitation stakeholders i.e. a waste management company and some representatives from the Public Health and Sanitation Department, and representatives from schools and mosques. The officers present included a CLTS facilitator, and 5 WSUP staff including Patrick Hawker from the UK whom the

community was very pleased to see. Facilitators from within the community led the session and ran the entire event. The meeting started with a prayer from one of the imams present. It was generally a sensitization talk from four speakers, all describing their frustrations with the sanitation situation. The facilitators had planned for all attendees to go on the walk of shame exercise but fearing that the group might disperse along the way, and with the limited time available, a small group of people was sent out to walk the breadth of a section of the community after which they came back for a discussion of their findings. After the visit to the OD areas, there was hand-washing demonstration done to promote hand hygiene.



Hand washing demonstration done during the trigger meeting

Addressing the gathering, the health officer advised that the rate of open defecation in the community was alarming and urgent steps had to be taken to remedy the situation. Another speaker delivered a health talk likening faeces to health, to encourage the community to change their hygiene practices and increase demand for improved solutions, i.e. urging landlords to construct toilets, urging the community members to

demand for improved public toilets conditions, and to focus on solutions for the children toilet situation.



The community facilitator leading Trigger meeting

4.0 Community Sanitation Action Plan

The committee hopes to create community awareness on sanitation issues through communal clean up exercises, community talks/workshops targeting women, children, and the youth. Issues discussed included:

A. The formation of Water and Sanitation Fan Clubs (WASAFC)

Water and sanitation Fan Clubs shall be formed in four neighbourhoods of Ayigya Zongo, i.e. Kotoko-Line, Block 11, Block 111 and New site. These clubs shall facilitate the committee's programmes in the neighbourhoods. The water and sanitation fan club shall have the responsibility of organising communal labours and serve as watchdogs for good sanitation practices in their neighbourhoods. The committee may organise monthly cleanliness competitions among the clubs to reward the best neighbourhood for good sanitation behaviour. There could also be an annual Award package for the best WASAFC in the community.

B. School Awareness Programme

The committee shall work with teachers/authorities of various primary and junior high schools in the area to promote programmes that would educate school children on sanitation issues. This education programme could be in the form of dramas, street walks, quiz and school environment competitions.

C. Public Toilets

There shall be a programme to collaborate with operators of public toilets in the community to raise the standards of the toilets and around the area of operation.

D. Committee Meetings

The committee shall meet at least two times a month to review progress and roll out new programmes.

With the Support and regular follow up meetings, the Ayigya Zongo Water and Sanitation Improvement Committee may go a long way to improve the sanitation conditions in the community and could serve as a good example to other communities the committee reckons. Ultimately the next steps would be to evaluate progress made and decide on any further actions that need to be taken to support the community in delivering its sanitation action plan.

5.0 Qualitative interview Findings

5.1 interviewee profile

The interviews for this monitoring period were conducted from 22-26th May 2013. Finding the time when the same 10 people are home and available to be re-interviewed was a huge challenge. Ultimately, semi-structured face-to-face interviews were conducted with all but one of the participants from the last period monitoring. The remaining person was reachable via phone, so a phone interview was conducted. Edu Kwashie, (replaced by Mamoda Taufiq of a similar profile in the last monitoring) was still unavailable and should be considered as a permanent drop from the longitudinal study (see Baseline Report for a summary of the interviewee profiles and Milestone 4b for continuity.)

Apart from these interviews, some informal discussions were held with the leadership of the community and the sanitation committee, which provided important insight to validate most of the answers from the formal participants.

The same Baseline and Monitoring Plan (BMP) from the previous reports was used, though modified somewhat to reflect on the CLTS implementation and progress made so far. The questionnaire (see appendix 1) basically sought to identify knowledge and attitudes around sanitation, behaviours, use and maintenance of sanitation facilities, hand hygiene, knowledge of health risks associated with faecal contamination and the community's engagement with the digital platform, meetings and participation in the CLTS activities. Some of this information was obtained through direct questions on personal and household practices, and some through indirect questions about neighbours and the community at large.

As usual, formal interviews were conducted with attendants from 5 of the main public toilets in the Ayigya Zongo community (Market, Massasa, Affordable Housing, Ziko and School toilets). These respondents are important because they are close witnesses to behaviours around open defecation, public toilet usage, and dumping of faeces in bags. With these participants, the probability of meeting the same person each round for an interview is nearly impossible, as they operate on irregular shifts in some cases with four others. Therefore, two attendants from the previous survey and three new ones were interviewed. To gain insight on the solid waste management situation, which in this case is particularly important due to faeces usually mixed with general waste for dumping, an important interview was also conducted with the dumpsite attendant of the only formal dump in the Ayigya Zongo community.

Results from the qualitative analysis of semi-structured/informal interviews completed with the different types of community members are described below:

5.2 Sanitation conditions and behaviours

As earlier reported, general sanitation in Ayigya Zongo still remains the same, characterised by very abysmal sanitary conditions resulting from indiscriminate dumping of solid waste (usually mixed with faecal matter), open defecation and flying toilets littered in various parts of the community. Moreover, toilet facilities and informal dumpsites are located in close proximity to residential houses, which one respondent Latif Abdul Awal says produces an obnoxious stench, especially during desludging. Many of the public toilets are mostly dirty, and flooded with maggots, cockroaches and flies. Delayed de-sludging at times renders them full and unusable for extended periods. Even the newly built toilets are not properly maintained, one respondent explained. One female respondent reported on having to wash down anytime she visited the toilet as she puts it *“it’s like the smell enters your body and makes you sticky”*. Two male respondents reported having to remove their shirts anytime before using the public toilets in order not to come out with the smell sticking on to them.

A considerable level of dissatisfaction in the use of the shared toilet facilities was observed amongst all respondents except for 76 year old blind Adiza Yusif, who said *“I am content with whatever the situation is because I can’t see it anyway”*. Mamoda Taufiq, who does not have a toilet at home and yet will still never use the public toilets because he prefers to open defecate anytime, simply said *“I can’t be bothered because I don’t ever use it”*. The other respondents all seemed to demand better maintenance and proper management of the public toilets, as these were their only real option (except for the only participant who has an in-home toilet, Latif Abdul Awal).

Further discussions with the 5 toilet attendants provided additional information on the community’s usage of the public toilets. One attendant explained: many people misuse the toilets, sometimes squatting instead of sitting, sometimes defecating around the hole and not into it, peeing all over making it messy and thus increasing the natural odour. Two attendants noted the need to educate the entire community regarding the proper use of the public latrines.

As respondents expressed their dissatisfaction on the state of sanitation in the community, they also applauded some significant improvements that had occurred in the community. Notable amongst them was the demolition and fencing of the abandoned market square that served as an open defecation field for both the young and the old (all but one had seen it). The community clean up exercises (6 respondents heard about it but only one took part), and the waste container installed some few

months ago (all but one had seen it) were also cited as very good steps in the right direction.

5.2.1 Use/ Non-use of public toilets

The toilet situation of the respondents had not changed i.e. none of them had acquired or was planning to build an in-home toilet. However, one of the respondents stated she now uses the Massasa toilet most of the time instead of the market toilet (walking an extra distance of about 100m), as it was much cleaner than the latter. Four females out of the 6 respondents relied heavily on public toilets (80% of the time) but would sometimes resort to the use of toilets in bags at night or when heavily pressed. Two young females have maintained since the baseline report that they never use toilet in bags. None of the women said they open defecate. Two mothers: Rahinatu Abdellah, 45, and Wasilatu Asiamah Nuhu, 43, seem to put in more effort than others to ensure that their children visit the public toilets or use chamber pots instead of using the open fields nearby. Apart from the self-professed open defecator, all four male respondents never defecated in the open or used bags. Most respondents maintained that some neighbours and household members often use bags or practice open defecation.

Seven respondents felt that open defecation in the community has reduced, and attributed this to the clearing and fencing up of the Bolatongo dumpsite. Respondents felt people are more afraid to go into the fenced area to defecate. 6 people felt the sign placement at various OD sites does deter people from defecating there. One respondent attributed the reduction in open defecation to the announcements made during the sanitation week celebration. Five respondents however felt the rate of dumping faeces in bags had not changed. One respondent said pointing to a suspicious bag lying around "*I think that's one*".

The dumpsite and toilet attendants interviewed verified most of the reported behaviours explaining that, people still dump faeces in bags but do so now with caution as there is a growing awareness that they could get into trouble when caught. Therefore, people dump it more often at night. The proportionate estimate of toilet users maintained the trend shown in the last report. The attendants estimate that fewer than 10% of toilet users are children under age 10, about 15% elderly (mostly men), and the majority are adults (teenagers, youths) with the elderly preferring the cheaper squat option and younger ones preferring the western style sit type.

5.2.2 Reasons for not using public toilets

The reasons for non-use of public toilets were mostly the same as reported before. For women and children, reasons given centered mostly on safety at night. The fear of

being raped or attacked persists. One respondent said she would only go at night if she had somebody accompanying her. The fact that some of the toilets had irregular closing and opening times added to the reasons for not even trying at certain times for you might get there only to find it closed. The cost, cleanliness, and maintenance of the toilet are still major issues. Due to her disability, for the blind woman, the cost of toilet was mostly zero depending on the attendant present. However, for her children and grandchildren, it was very expensive put together. Therefore, the children in the house all defecate at the dumpsite.

The respondent self-identifying as an open defecator is put off using public toilets not only by the cost but also by the fact of being confined to one spot and, as he puts it, having to “*shit on shit*”. He does not like the idea of seeing someone else’s shit. Some respondents also cited people’s laziness or selfishness in wanting to keep their own areas clean but disregarding others’ space as another reason for non use. More answers this time round centered on the lack of knowledge about the consequences of open defecation and called for more awareness promotion and education.

5.2.3 Hand washing

The sanitation week promotional activities among other things were highly focused on hand hygiene. At the trigger meeting, a demonstration was done to show attendees how best to wash hands with soap. The facilitator demonstrated the difference between hand washing with simply water and then the benefits of adding soap. Only 2 of the 10 respondents however attended the meeting or actively took part in the other activities. However many of the respondents listened in to the radio programme or had a visit from the sanitation promoters, so it can be assumed that they had a message or two about hand hygiene.

All respondents said they mostly washed their hands after using the toilet. As this was not the case before, it suggests that continued monitoring or repeated mentioning/questioning of the topic of sanitation and health might be influencing answers from the participants. One respondent however said he mostly washed hands on instances when he heads directly back home but does not make the conscious effort to do so all the time. Yet responses from all 5 toilet attendant continue to indicate that there is very minimal hand washing done at public toilets with only a few (25%) washing hands mostly with just water when available.

All respondents agreed that adequate hand washing facilities at the toilet would encourage immediate hand washing after toilet use. The hand washing setup used for the demonstration during the trigger meeting was kept at the Massasa toilet. During the interviews 3 weeks later, the rubber bucket had burst. Inquiring from the attendant, he

said that this had resulted from the frequent back and forth lifting for refilling. In addition, after the accompanying soap got finished, the attendant did not replace it saying he had no money for that and further said '*somebody might just take it home for personal use so why bother?*'

5.3 Attitudes toward sanitation

The general attitude towards sanitation amongst the respondents remained relatively the same. However the number that earlier cited open defecation as a very common and widespread problem in the community had reduced from eight to 6. Therefore 2 more respondents now felt the problem of open defecation was limited to only a few people in the community - mostly children and some self-centered adults. This time round all participants felt open defecation was unacceptable with the self-identifying open defecator saying "people *should go further down the bush to do it not near where anybody will see it*"

Many respondents thought sanitation was beginning to gain priority in the community, with some respondents citing the sanitation week celebration and community clean up as an example. Although only 2 participants attended the trigger meeting and clean up exercise, all participants seem to have heard a thing or two about the week's activity either through the information vans, radio or door to door campaign. When asked why there was little participation on their part, respondents cited various reasons ranging from disability, being unwell, or simply being busy at that time. All respondents however maintained they are committed to the welfare of the community and are willing to work together for its betterment. One respondent suggested he had texted in earlier because he wanted to take action. Two others had attended previous meetings and all had talked to others about the sanitation situation in the community. Almost all respondents had contributed in one form or another to a community action towards general cleanliness of the area in the past. All respondents but 2 were aware of the new sanitation committee and all agreed (including those who did not know of its existence) that they could work to change the sanitation situation in the community.

When asked what they thought could be done about the sanitation situation, the answers ranged from building more in-home toilets to fining offenders to serve as deterrents to others. Many more (7) cited the ongoing public education and awareness campaign around sanitation using public forums, radio etc. as the best way forward. For others though, like Mamoda Taufiq, "*nothing will make me cease using the bush, not even a household toilet*".

5.4 Health Knowledge

As was the general trend, responses on health knowledge was relatively unchanged from previous responses. Though respondents cited various reasons for diarrhoeal diseases ranging from *eating too much food* or *food that does not agree with one's stomach* to *contaminated food*, they were all able to make a connection between faeces and diarrhoea except for one respondent. On the perception of health impacts from using public toilet, the younger women cited 'white' chlamydia as resulting from heat emanating from the public toilets. One specifically said, "*When the toilets are full and almost spilling over, the heat coming out from within can cause white.*" Participants who made a connection between faeces and health cited eating food that has come into contact with flies, not washing hands after toilet use, and the smell of toilet causing catarrh as their reasons. No respondent however thought cholera was a problem in the community but all were aware (except one) of the connection between cholera and exposed faeces.

5.5 Knowledge of the System

Responses from the last survey (when the new signs had not been posted) indicated that all respondents understood the signs (except for the blind woman who had not seen the signs), one way or the other, either on their own or from the previous interview with the WSUP staff person. After seeing the new signs themselves this time round, all sighted participants (most of who are illiterate) thought the signs were self-explanatory. One respondent made a specific reference to the new signs at location 4 (Last Stop), saying it's very educative with the vivid designs depicting how flies move directly from faeces to food.

When asked if the signs were likely to deter people from the practice of open defecation, they mostly answered yes (7), it was already deterring people; two people added that it could educate children as well. Two still conditionally agreed it would deter people, maintaining that there needed to be other measures in place, and that it deters adults, but not children; One suggested the setting up of volunteering groups to police the area, and another said that the sanitation committee could set up by-laws to ensure compliance. One person was however not sure it would, saying "*many people cannot be bothered if it's there or not*". Six people (compared to two the last time) admitted to discussing the signs with others. The Fulani chief, being part of the sanitation committee, maintained that he's been a very strong advocate of the signs discussing and promoting it with several others in the community.

6.0 Summary of monitoring results by baseline indicators

The result obtained from this phase monitoring survey is summarized for each of the three indicator areas identified in the BMP to characterize the existing sanitation conditions and behaviours in the community as follows:

6.1 Indicator Area 1: Behaviours, use and maintenance of improved sanitation facilities, hand washing

- The wide majority of people living in Ayigya do not have household toilets and rely on public toilets.

o This remains the current state with no real indication of the situation changing anytime soon. While evidence of increased investment in improved sanitation is typically an important indicator to measure effectiveness any of CLTS intervention, it is particularly difficult to estimate in this context. Also given the complexities of an urban context, i.e. the land tenure, multi-landlord and squatter status, urban dwellers are often reluctant to make any permanent investment. One respondent however reported having approached his landlord to construct a toilet. Others have stated there is no possibility of getting an in-home toilet due to the lack of space or in some cases the capital to construct. Therefore, steps toward investment in household latrines may be more gradual and not visible within the pilot time period given the presence of several existing community toilets.

- Due to a variety of barriers to public toilet use, some people practice open defecation and dump faeces in bags around the community. For this reason, solid waste collection is linked with sanitation.

o This remains the current state with promising signs of improvement. The recent demolishing and fencing up of the Bolatongo dumpsite is deemed by many to have drastically reduced open defecation and dumping of faeces (in bags or mixed with solid waste) at the area. Also the community cleanup exercise and installation of dumpsters may be deterring people from dumping/open defecation in localized areas. Many respondents this time round agreed that the signs, sanitation committee and the on-going awareness promotion will work together to improve the situation.

- The condition of public toilets and the cost of using them are likely key reasons for non-use

o This largely still remains true. There are however signs of improvement with the Sanitation Committee promising to work closely with toilet attendants to improve conditions i.e. extend the closing and opening times, install hand washing facilities,

monitor desludging times. The cost of toilet for children is also another issue that received great attention. Many people are optimistic that the awareness creation and sanitation promotional activities done would improve conditions.

- Women, children, the disabled and the elderly are likely to make up of the majority of non-users due to inability/fear of traveling to toilets, restrictions against children and incompatible design for children, and the lack of willingness to give children money for using public toilets.

o This remains the current state with promising signs of improvement. As stated earlier, some mothers now seem to encourage their children to use public toilets instead of defecating in the open

- People often rent their houses from landlords who have not constructed household toilets, or have removed them and are unwilling to install them. Some people have urged their landlords to build them toilets.

o This remains the current state, where the landlord issue was often raised as a reason that a household might not be able to have a household toilet.

- Hand washing with soap immediately after using toilets is not practiced, as public toilets do not provide soap.

o This remains the current state. Apart from the Massasa toilet, which benefited from a hand washing set up, no new hand washing facilities were recorded at the public toilets. There was evidence of the reported misuse of soap and lack of proper care of facilities, as recorded with the burst water bucket example. Also, attendants' lack of interest to provide soap was further established due to the Massasa attendant's refusal to replace the accompanying soap after depletion.

6.2 Indicator Area 2: Knowledge and Attitudes around sanitation

- The practice of open defecation and dumping of faeces in bags is seen as a common problem but is unacceptable by many.

o This situation is gradually changing. A few more respondents this time agreed open defecation is reducing, citing the localized improvements that have occurred; but they maintained that toilets in bags were still the same. On a positive note however, with the implementation of the CLTS program, capacity has been developed, institutional champions and natural leaders at different level (youth promoters, sanitation committee) have emerged to champion the cause of sanitation in the community.

- People think there is a need for household toilets, but recognize that it is a challenge for all houses to have them given the difficulties in de-sludging trucks accessing them via unpaved and narrow alleyways.
- o *This remains the current state, with the reiterated barrier of landlords' lack of commitment and lack of finance.*
- Many people know that exposed faeces can lead to diarrhoea and cholera, and recognize flies and unwashed hands as the vectors, but some do not know this.
- o *There seem to be an increasing awareness of the connection between faeces and health, with more people giving correct and specific answers this time which could be suggestive that repeated questioning is influencing/educating respondents. However, the general community has begun to take steps to ensure that the environment is kept clean eg. Bolatongo: the entire area has been cleared and fenced and there are ongoing talks for a private contractor to build a multipurpose market for the community.*
- There are some who believe that using a public toilet can cause poor health, namely through the smell, and vaginal infection.
- o *This remains the current state, the issue of vaginal infection seems to have gained ground with some young females citing personal instances of occurrence. More education is needed moving forward with the CLTS program*
- Community members have engaged in solid-waste cleanups in the past and are expected to engage actively in such activities.
- o *Even though there was an impressive turn up for the community clean up exercise, only two of the respondents interviewed took part, citing various reasons for not partaking. There is a need for more commitment on the part of community members to address the sanitation situation. Positively though, the Sanitation Committee are planning a collaboration with Public Health Officers to enforce environmental sanitation laws in the community.*

6.3 Indicator Area 3: Engagement with the digital platform and community meetings

The platform re-launch (Milestone 4a) results indicated a positive sign of Clean Kumasi's traction in the community, as there seems to be a renewed interest in the platform following the relaunch. However, it was not seen as a completely satisfactory means of motivating engagement, necessitating exploration of other means to increase community wide engagement beyond the signs. It was therefore hoped that

commencing with CLTS type activities listed above would increase community's engagement. Preliminary data obtained showed that since "sanitation week" started, there has been some renewed interest in flashing, but nowhere near enough to suggest that "sanitation week" has had a significant impact on the amount of flashing. This suggests that, even though people appreciated the new signs, and with the entire buzz around awareness creation, people still did not deem it necessary to flash. However, there was an encouraging turnout for the community meetings, clean up and trigger meeting (with several people who had been recruited offline) suggesting that people took action in their own way but not necessarily by flashing the number on the signs.

There are positive signs of improvements with increasing collective commitment by the all stakeholders and with some new emerging interests; this time round, there were quite a number new attendants and public health officers present at meetings; even the assemblyman who had earlier been difficult to trace visited the team during the sign posting exercise. Capitalizing on this emerging interest and the commitments made could lead to significant progress towards improved local hygiene and community cleanliness.

7.0 Conclusion

The community's interest in improving sanitation is being aroused with time and requires constant education to ensure sustenance. Residents are now becoming increasingly aware of the repercussions of their insanitary practices and therefore the need for a paradigm shift. However, challenges do exist, in terms of the fact that some landlords allude to lack of funds for construction of household toilets even if they feel the need to do so. More importantly, the lack of space for construction of household toilets poses a huge problem due to the nature of households in the community. Generally, the response from community leaders on sanitation improvement has been positive during the course of the survey.

The sign posts on sanitation have been very instrumental in creating awareness on the issue of poor sanitation in the community. It has provided an avenue for discussions among the residents on the poor environmental conditions in their community. This is therefore an effort worth sustaining in order to ensure that sanitation in the community always becomes part of residents' discussions in their various homes and workplaces.

Ensuring resident's involvement in the communal meetings through the digital platform has also been effective though it is below expectations. The major issue to be addressed here is how to get more residents to participate in communal meetings on sanitation. This will create a platform for exchange of ideas and brainstorming on the most efficient ways to deal with the current state of sanitation in the community. It will

also cause a renewal in their commitment towards sanitation improvement. As the survey points out, residents would be able to take the necessary action to improve sanitation when they are, among others, well aware (conscious) of the repercussions from their insanitary practices, have the necessary resources (financial and technical) to do so and has an innermost conviction to change their attitude towards the environment. Prominent among these factors aforementioned is constant education of residents. Therefore, much effort should be directed at getting residents constantly educated through communal meetings, flyers, posters, sign-posts, etc. The key questions to be answered here are: What will cause residents to lend themselves to constant education on sanitation in order to cause behavioural change? How can behavioural change on sanitation be effected and sustained among residents?



MILESTONE 6

UPDATED INDICATORS

Testing a Digital Platform's Ability to Recreate the Success
of Rural Community-led Total Sanitation in Urban Communities

1. Background

In September 2012, IDEO.org and WSUP began testing an innovative mobile platform's ability to recreate the successes of Community Led Total Sanitation (CLTS) in an urban context. The platform was a tool to assemble and activate residents of Ayigya Zongo, Kumasi to eliminate open defecation (OD) and demand for improved sanitation and hygiene behaviors through the use of social pressure and collective action. The platform brought a small group of community members together to start a dialogue on the sanitation conditions. A number of natural leaders emerged and a WASH committee was formed to mobilize solutions to improve the prevailing sanitation situation.

A Baseline report documented existing sanitation conditions and practices to provide a "before" picture on which to evaluate the changes over time. It was also used to better focus the scope and direction of the project, after valuable insights into the characteristics of the community came to light. It was then updated following the launch of an intensive Community Led Total Sanitation Facilitation (CLTS) campaign. Wherein a CLTS facilitator led the community in understanding the sanitation challenge in an attempt to trigger shame and disgust amongst community members to take action. As the various iterations made with the platform, and methods employed in the project up to the start of the CLTS implementation has been described in earlier reports, a detailed discussion of the approach is not felt necessary here. However, this final report dwells on the aftermath of the CLTS campaign and attempts to make a longitudinal comparison of the previous data points and information collected over time to measure the progress made toward the identified indicators as follows:

- Behaviors, use and maintenance of improved sanitation facilities, and hand washing
- Knowledge and attitudes around sanitation
- Engagement with the digital platform and community meetings/activities

In order to measure the change in the selected individuals over the course of the pilot, as earlier prescribed by the BMP, this report structure shifts from the more synthesized discussion around baseline indicator areas to highlight more on changes to the individual's (longitudinal study participants) perspectives on sanitation, personal behaviors and actions taken.

2.0 Pilot Status: Platform update, Community Engagement & Actions after CLTS Campaign

2.1 Platform Update

Please refer to Milestone 3A (Platform Refinement), Milestone 4B (Platform re-launch) and Milestone 5 (section 2.0, Platform Update – reposting signs ahead of the CLTS campaign) for a detailed account of the various stages, iterations and improvements made to the platform. The platform worked well to bring community members together to discuss sanitation issues. Many residents agreed it helped in creating more awareness

on the issue of poor sanitation in the community. It also provided a basis for the implementation of the CLTS campaign.

It was hoped that commencing the CLTS campaign would have encouraged many people to engage actively with the platform via flashing to report incidences of OD. Though the community interest and engagement during the CLTS campaign was encouraging, engagement with the platform on the other hand was not enough to suggest the investment made was worthwhile. The decision to print the posters in flexi instead of stickers did not seem to make a huge difference as some signs (and poles) were missing shortly after re-posting (either stolen or brought down by the rains).

It is felt that the signs served their purpose – getting a group of people together to start the sanitation dialogue. Natural leaders (Sanitation committee, Imams, youth groups etc.) had emerged to drive change. The simple messages on the signs provided a vivid link between feces and health. It had provided a great avenue for discussions among the residents on the poor environmental conditions. Many community members agreed it deterred people from dumping or defecating in the point of interest (POI) areas. And it is definitely an investment worth sustaining to ensure that sanitation in the community is a part of residents' every day discussions. However, with the frequent removal of the signs and the decline in the number of flashes, it was not deemed necessary to re-invest in the signs unless they were made more permanent and fixed in such a way that they were difficult to be removed or brought down by the weather (or people). Subsequently, the remaining signs, which were dirty and partially hanging, were all brought down including the plywood, which hosted them. This action has however left the community leadership and some respondents worried that the localized improvements that had occurred at the POI areas would not be sustained with the removal of the signs.

2.2 Community Engagement and actions after CLTS

Community work done after the trigger meeting included regular meetings with the Sanitation Committee (SC), routine visits to the POI areas and informal public toilet inspections. Capitalizing on the great turnout at the trigger meeting and the various commitments made by Public Health officers (from the KMA), schools, mosques etc., follow-up visits were made with the SC to leverage the commitments made to the community's advantage. One good lead the SC is pursuing is a promise made by the management of the waste company (Asadu Royal Waste management), the same company that had installed a waste bin at Laststop (earlier reported) to install more waste containers in the community to improve the solid waste management (which is directly linked to the toilet situation) in the community.

Engagement with the SC has been encouraging. The focus has been on helping the committee implement the action plan earlier agreed upon. The solutions identified amongst other things included, improving public toilet conditions (regular desludging, improved cleanliness, improved lightning etc.). The issue of children use of public toilet is also being pursued (either to use for free or at a subsidized fee). School sanitation improvement is also highly been embarked upon. There's been a lot of dialogue with school authorities in this front. But at this stage, it largely remains "all talk" with no action taken. School authorities have suggested collaboration with the Parent Teacher Association to improve the toilet situation in the school. Household toilet promotion is

also an aspect to be pursued by the committee but they do recognize the challenges involved (lack of capital, space, desludging challenge etc.). The SC is supposed to initiate bi-monthly meetings and invite the project coordinator to attend but so far the reverse has been the case. The turnout to meetings has also not been as encouraging as before. With the project concluding soon, it is imperative for the SC to recognize their “faith” and take charge of their “destiny”.

The general community meetings on the other hand have encountered a lot of scheduling difficulties. There seem to be a general lack of drive or lack of interest on the part of the community organizers. No date seemed to work well with anybody. In light of this, relatively very limited formal engagement on the community level has occurred since the trigger meeting. However, one main Clean Ayigya meeting (with the initial community group members) did occur on 14/07/2013. A final meeting has been scheduled for the 07/09/2013 for a final hand over of project to the community.

2.3 Qualitative interview Findings

Interviews for this final update were conducted from 17 - 21st August 2013. Out of the 11 respondents sampled for the longitudinal study in Milestone 3, one person (Edu Kwashie) dropped out by the first and another (Ima Talata) by the second monitoring period. The first dropout was replaced with a resident of a similar profile (Mamoda Taufiq). As the BMP initially targeted 10 longitudinal participants, adding on the eleventh for contingency and also for her perspective as a toilet attendant (before formally including toilet attendant participants), it was not deemed necessary to replace the second dropout. The questionnaire used for the study has primarily focused on the indicators areas identified by the BMP stated above. It also collected information on interviewee profile i.e. age, household size, others in the compound, and length of stay in the community. It attempted to identify respondents' economic status with the amenities they possessed. It also inquired about in-home toilet ownership or use of public toilets. Following the various iterations made to the platform, and the launch of the CLTS campaign, the later questionnaires had featured a few extra questions aimed at gathering data on the updated indicators. Some new questions included whether participants attended community meetings, if they were willing to pay more for improved services, what specific changes they wanted to see, their perception of the new signs, perception about the sanitation committee etc. (see [Appendix for](#) a template of the updated questionnaire for this report).

Given the need to use qualitative rather than quantitative research methods (limited resources and scope of the pilot). The study concentrated on a longitudinal tracking of some selected few community members who were purposively sampled to be representative of the community. However, it is recognized that the findings from this selected few cannot be extrapolated as proportionally indicative of the wider community. Also, some bias must be expected from the “self selecting” respondents who had engaged with the platform either via texting in a message (when that was the case) or having attended one of the earlier community meetings. Their concern for the sanitation situation is evident in the fact that they took action and this may influence their answers i.e. giving predetermined answers or saying what they think interviewee wants to hear which may reduce the potential to induce personal change during the pilot. Therefore, some “neutral” participants were identified and included in the study to offset this bias.

Formal interviews (toilet attendants) and Informal discussions were done with some key informants i.e. neighbours of respondents', sanitation committee, Imams, schoolteachers and children for their perception of change in the wider community. All these insights into the general sanitation conditions and behaviours are synthesized to provide a measure of the changes influenced by the pilot and this is summarized for each of the three indicator areas identified in the BMP in section 5.0 (also see sec. 4.1 for key information on participants). Section 4.1 below, will also combine data collected on the longitudinal participants from the 1st- 4th wave to track changes in the selected individuals over the course of the pilot.

2.4 Update on longitudinal study Participants

To complement the previous reports, which have largely focused on the "general" sense of the average behaviours and conditions, the interview transcript up until the last survey has been tidied up, adding on new insights to each person, to essentially demonstrate the individual changes in attitude, knowledge and behaviours over time.

1. **Alahaji Abdul Munim Abubakar**, 45 years old, is a high school graduate married with 2 children (a nineteen year old teenager and a newborn). Though originally from the North, he has lived his whole life in Ayigya Zongo, and says he loves his community and as such; he takes active part in all community events from funerals to outdoor ceremonies. He was selected as sub chief of the community (chief of the Fulani people) some years ago. Alahaji works part time as a clothing designer and is also on the board of the KMA for the Ayigya Town Council. He is the landlord (by inheritance) of a family home where he lives with his aged mother and is responsible for over 15 other people, including his late brother's children and a mentally retarded nephew.

There used to be a bucket latrine in his house, and then a dug pit latrine, but due to desludging problems, it was rendered unusable so the family now relies on the public toilets (Ziko), which is nearby, and he would never personally rely on a plastic bag or OD because he sees it as "*demeaning*". The women and children in the household rely on the old Ziko (more affordable option) toilet at night (which is not locked). And his elderly mother and the young children use chamber pots at home, and the faeces are then mixed with other solid waste from the house and taken to the dump area. His retarded nephew is however able to use the public toilets unassisted. He feels that open defecation is very common in the community and considers it unacceptable. He says children usually do OD and believes the primary reason for this is poverty, and the costs of using the toilets for large families (like his). He is satisfied with the public toilet conditions as "*The old block was messy and smelled badly but the new block is in good condition*"

The children in Alahaji's family are often affected by diarrhoea, and he recognizes the connection between faeces, flies and food. He indicates he washes his hands regularly as part of his Muslim practices and especially before eating and after using the toilet. "*Being clean is a way for us to express our character as good Muslims*" he said. He thinks that all households should have toilets at home, and though he recognizes the challenge of desludging all the household toilets given the road conditions, he suggests the government should improve the road. As an Ayigya town council board member, he advocates for cleanliness in the community, he organized for the construction of household drainage systems in his area. He did see several signs for the system, but

didn't understand them or the objective and asked Ima Abuima about them (who he had seen with the team putting them up). He attended the early community meetings and was one of the early natural leaders who emerged. He has since been an instrumental part of the team making a difference in the community. He's been able to use his position as a sub chief to arrange for the community group to meet with the main chief and was mainly responsible for the formation of the SC in the first place. He was amongst the community leaders trained to lead the CLTS facilitation process and took centre stage during the sanitation week activities and was also part of the community members who did the radio program.

Sharing his experience on the sanitation committee he said, *"I must say that the task is a very difficult one. You could do a lot of sensitisation today and people seem to have heard, even make promises to improve behaviours, but when you look at the situation after some time, you will see that really nothing has really changed"*. He however stated that, the sanitation committee is working hard to change the situation, one issue at a time. *"You cannot force good behaviour down people's throats, there needs to be a self conviction to change so, you advocate for change then wait to see"*.

Alahaji realizes how dangerous open defecation and unsanitary habits in the community is, and as a family man and a community leader, he deems it a personal responsibility to do all he can to improve the situation. He stresses the need for people to have in-home toilets where possible and the need for regular triggering and sensitization to ensure good behaviour.

2. **Felix Kweku**, 30, has only lived in Ayigya for two years and rents a house with his wife and only child (four years old). He has completed junior high school and works as a mason. Due to the absence of a household toilet, he and his wife always use public toilets (never a bag or open defecation) and primarily use the market toilet near his house, though he complains of the bad smell and insects, its their only real option and hopes that the situation could be improved. His child uses a chamber pot, which his wife later dumps in the toilet, though she has to pay for this, she's usually met with strong resistance by the toilet attendant as the practice of pouring chamber pot content into the toilets mostly renders them messy. He believes open defecation is not very common, in his area. Though he hasn't seen people using bags as toilets, he sees the bags dropped in the alleyways, so he knows that people do it. Felix believes people open defecate because the toilets are not clean so they are better off using the bushes than paying for a dirty facility, but he doesn't attribute it to unaffordability or laziness.

Diarrhea is not a problem in his household and he recognizes that it can come from not washing hands after using the toilet (though there is no hand washing facility at the toilet, he washes his hands when he returns home). Felix is very concerned about open defecation and the mess at the public toilets makes him sometimes not want to use them. While he thinks people do need household toilets, he suggests it should only be encouraged where possible, and be limited to a few houses due to the problem of emptying. He advised that if everybody in the community were to own household toilets, the situation would be worsen giving the desludging problems. He doesn't think the PT's are expensive and is willing to pay "as much as it takes" to use an improved PT or have a household toilet especially for his wife and kid.

He recognises that OD is unacceptable and says “*it sickens him to see such filth in the community*”. He thinks most people care about sanitation and are willing to work together to improve it, but some simply can’t be bothered. Although he saw multiple signs for the system, he didn’t bother to read any, but asked a WSUP team member about it when he saw her attending to one. He thought the later signs were more “attractive” and easy to understand. He personally saw groups of people gather around to discuss the content on the board (usually children). Felix never attended any community meetings or took part in any action. He reported being busy throughout sanitation week and beyond. He however said he is willing to work together with others to improve the situation and had initially talked to some people in the community about unsanitary practices (e.g. a man burning toilet near the water point).

3. Ima Mariam Mamprusi, 76, has lived in Ayigya for twelve years where she rents a home with her six children and ten grandchildren. She has no formal education and is retired charcoal seller living on remittances from her children and friends. There is no household toilet so she always relies on the market toilet though she complains of smell and insects. The distance travelled to the toilet is also a major problem due to her mobility challenge. The women in the household pay to use public toilets (never using bags) and at night they use the public toilets that stay open and are close by` (though she sometimes wakes her grandchildren to accompany her). Her grandchildren use diapers or chamber pots, and wrap faeces in bags to take to the dump. Although her neighbours don’t open defecate, she sees piles of trash (sometimes mixed with faeces) left behind her house.

She thinks open defecation is not very common (and is unacceptable) and that only a few people do it because they are very lazy or just selfish about wanting to keep their own spaces clean, but littering the alleyways. Ima Mariam was initially unaware of the cause of diarrhea other than eating too much, she later recognises that flies can cause disease when they move from faeces to food. She thinks the public toilet charge is expensive and wished for it to be free. She would like to see toilet conditions improved but is not willing to pay any extra fee for that.

She feels that sanitation is important in the community, and people want to avoid being fined by the KMA, so they keep their surroundings clean but disregard communal space. Although she saw the sign at the market toilet, she couldn’t read or understand it. Answering the same questions about sanitation and health over the period, Ima’s answers largely remained unchanged but she seems now to make the connection between faeces and health saying, “ when faeces come into contact with food, it causes sickness”. Although she is appalled by the situation she doesn't think that discussing it with anyone will change it. She never attended any community meetings or took part in any of the sanitation activities done. She explained she had to stay home all the time to cater for her grandchildren. She has however taken part in communal labour in the past and has always encouraged her older grand children to use the PT. She is of the opinion that working together with the SC, the situation will improve.

4. Miriam Kornyoh, 38, has lived in Ayigya for 17 years and rents a house with her husband and two children (ages: 9 and 16). She is a high school dropout and works as a hairdresser/trader. Due to the lack of a household toilet, she uses the market toilet, though she is unsatisfied with the conditions (smelly and full of used paper) and says it can make you lose the urge to go to the toilet. She sometimes relies on a bag at night to

avoid the risk of attack while going to the public toilet. She objects to the fact that children must pay to use the public toilets so she tries to avoid the fee by bringing her own anal cleansing materials for the children to use. She says that open defecation is very common (some neighbours do it) and people do it for fear of being attacked at night, though the main reason is poverty, and selfishness.

Miriam says that diarrhoea does occur in her family and she recognizes its cause as not washing hands after using the toilet and before eating. However, she also suggests that using public toilets can cause “white” (vaginal infection from the heat). She believes that open defecation is unacceptable, and though it is a difficult problem to stop, it would improve people’s health if they could and that more people should be encouraged to build toilets if they can be emptied from their houses. While sanitation is extremely important in the community, a few people don’t care. She has previously complained to others about people dumping faeces around her shop, and she joined a hairdressers association in a clean up. She had previously complained bitterly about the conditions at the Market toilet She previously reported on having to wash down anytime she visited the toilet and said, *“It’s like the smell enters your body and makes you sticky”*. But by the second monitoring period, Miriam had switched toilets. Now using the Masasa toilets, which are generally believed to be cleaner, having to walk for close to 200m more. She had earlier stated she was not willing to pay more for improved toilet conditions as she felt the toilet fee was already expensive, so it now seems like she is getting good value for her money at the Masasa toilets. Although she saw the earlier signs near the market toilet, she didn’t read it, but her husband did and explained it to her. She spoke with her husband and neighbours about it and thought it will deter people from indiscriminate dumping. She believed that the new signs were more understandable without her requiring any further explanations from anyone. She also stated that incidences of OD reduced when the signs were placed citing the improvement around her salon as an example but feared, with the removal of the signs, the situation would go back to how it was so she advised for the signs to be replaced`.

5. Rahinatu Abdellah, 45, was born in Ayigya and owns a house with her husband and four children; she has no formal education and is a provisions shop owner. With no household toilet she uses the Masasa toilet and says the condition is OK now, though the old one was horrible and at times unusable. She sometimes relies on a plastic bag when it is urgent or the toilets are closed at night due to the very unsafe conditions (risk of rape) near the affordable housing area, and then takes it to the dump with the general waste, or discretely leaves it at the public toilets. The young children also rely on bags in chamber pots. She says that open defecation is a very common problem in the community, her neighbours do it too, and the reason is primarily the risk of going to the toilets at night, though the smell and queue may also deter people. Rahinatu says there is no problem with diarrhea in the household and it is caused by food poison and flies- and she later makes the connection that flies carry disease by moving between faeces and food.

She suggests that there is a risk of getting “white” or chlamydia from using the public toilet. She sees open defecation as a very big problem and is willing to pay more for improved sanitation, including the contribution toward a household toilet. She thinks sanitation is an important issue in the community but a few people don’t respect themselves and the environment. She has talked to others about sanitation and feels the number of people leaving bags of toilet/open defecation near her store has decreased

recently. She had earlier reported not having seen the signs even though she admitted to using the Masasa toilets every day. She however did see the new signs and thought they drove home the underlying message. She reported having taken part in a recent Muslim woman discussion, on sanitation after which she's started putting pressure on his husband to construct an in-home toilet but there is not enough money at the moment. She had however not attended any previous meetings or taken part in any sanitation activities apart from the one she stated having done many years ago.

6. **Victoria Abofour**, 17, has lived in Ayigya for 10 or more years and she lives in a rented house with foster parents (where she seems to work as somewhat of a maid as well). She is a junior high student at Ayigya public school. There is no household toilet, and though there are free toilets at school, she doesn't use these and uses the Masasa toilet when she comes home from school because she would rather pay to use a clean toilet than those at school. At night she "rarely" relies on a plastic bag, but some of the women in the household more regularly use plastic bags and dump the faeces near last stop. Children defecate at the dump near the school and this is widely seen as normal. She thinks such behaviour is a common problem in her community and that most neighbours do it because they don't have a toilet at home and feel lazy, don't have money, or they don't want the smell of the public toilet to stick on their clothes. She feels it's unacceptable and would like to see the bushes around last stop cleared up. Victoria says that diarrhea does occur in the household and she later connects cholera to flies coming in contact with an infected person's stool.

She also believes that the smell of the public toilet can give you cold (catarrh), and she has heard that you can get chlamydia from the public toilet, though she's not sure if its true. She thinks that the cost of using the public toilets is fair, but the toilet should be free for children. She thinks that sanitation is not an important priority in the community as evident by the poor maintenance of public toilets. She washes her hand with soap at all times and says she's learnt from school that good hand hygiene equates to good health. Though Victoria has talked to her peers about sanitation. She had helped with previous clean ups, attended meetings and had also taken part in a recent clean up done by the church. She maintains she doesn't think that she can change much at her age. However, she's always been a strong advocate of the signs pointing it out and explaining content to the children who come around to defecate. She believes the sign deterred children especially from defecation at the POI areas and wished for them to be replaced.

7. **Wasilatu Asiamah Nuhu**, 43, was also born in Ayigya and rents a house with her husband and four children (ages 13-23). She has no formal education and works as a food seller. She doesn't have a toilet in her house and always relies on the Masasa toilet, nearby. She says its relatively clean compared to the surrounding toilets, but before the new one, the situation was very bad. Although she says she never uses bags, a lot of neighbours still do it when the toilets have closed, and dump them around the last stop area or the alleys. However, she thinks that open defecation is not very common, limited to some few people, especially now that the addition of new toilets has made the situation better. She finds open defecation very disturbing, but thinks the price of public toilets inhibits some people from using them, or that people just don't have the right change (coins). She feels that its expensive for her whole family to use them, and wishes she could pay just 10pesewas. Wasilatu says that diarrhea is not a problem in here community, but and understands that it is caused by dirty environments. She mentioned not washing hands after using the toilet as a cause of cholera, and says that

she washes her hands when they are dirty and after using the toilet or handling children's faeces. She also believes the flies and bad smell from the toilet can cause sickness and you can get chlamydia from using it.

She says that people need household toilets, and though this is the best solution, "landlords, don't prioritize it. They even convert toilet rooms for rentals." She also however said "sometimes it seems you are better off walking long distances to the PT than having to deal with the sharing toilets in a compound house like mine (an estimate of about 30 others in the compound). It would be a problem when it comes to cleaning, sharing cost for desludging etc. At least with the public toilets, you are saved all the trouble". Sanitation is a somewhat important priority in her community; some people are very concerned (like herself), while others care only about the cleanliness of their own households. She says she literally had to police the area behind her shop and fight with the people who dumped bags of trash or faeces there. As a food seller, she makes sure to practice good hygiene at all times, washing her hands all the time but more carefully and with soap after handling her child's faeces. She couldn't read the earlier signs but the new signs were self-explanatory. She heard about the sanitation week activities at the mosques and on the radio but she didn't attend the trigger meeting or take any action. She however said, when she heard the programme being aired, she was proud to be part of the study.

8. Mamoda Taufiq, 25, has lived in Ayigya for 12 years and lives in a different room with his aged grandmother and siblings. He has no formal education and does odd jobs for a living. There is no household toilet and even if there were, Mamoda reports he will not feel comfortable using it. Yet he also complained about the poor conditions at the public toilet but couldn't be bothered because he doesn't use it. "I prefer to use the bushes, at all times and not even a household toilet will make me stop". He says the insides of the public toilets are too hot for human comfort and as such prefers to use bushes where he is also free to smoke along side relieving his bowels. He cannot bear the stench, the long queues and having to pay to defecate. He stated that the women in the household, including his old grand mother use the public toilets all the time even at night. But use bags when urgent, which is later dumped with the solid waste on the dumps. The little children primarily use the dumps or chamber pots while those above age 10 pay to use the PTs. He has never participated in any clean up or activity in the past and doesn't think anything in the community has changed in a very long time. He doesn't always wash his hands after visiting the toilet. Stating that he only does that sometimes when he remembers (usually simply with water). When he saw the sign (old) at laststop, he didn't understand them, and didn't talk with anyone about them. He had however wondered who had put them up and what it meant

He was able to make the connection between faeces and health stating that when flies move from faeces to food, they cause illnesses. He didn't seem to think that there was any problem to the community with his preference to OD as he said " I go further down the bush so that should not be anybody's business". He earlier seemed to think that OD should be acceptable but later his response changed to unacceptable. A toilet at home would be great for her grand mother but there is no space or the money to construct one. He had heard about the sanitation activities but did not take part in any because he is always busy.

9. **Latif Abdul Awal**, 28, has lived in Ayigya for over twenty years in a home owned by his father. He has some form of tertiary education and works as a film director and also in a pharmaceutical shop. He lives with his father, father's three wives, and 20 other children in a house directly opposite the market toilets. He is the only respondent who has a flush toilet in his house (they have three of them). He says the toilets at home are very hygienic and is emptied every three months. He reported that only a few houses in this neighbourhood have toilets and the large majority depends on the public toilets yet the public toilet conditions are poor. He has only at one time attempted to use one of the public toilets in the community and described the experience as "horrible". He further complained of the obnoxious stench from the nearby toilets, especially during desludging and advised that emptying could be done at dawn, when everybody is asleep instead of at mid mornings as the smell sometimes gets unbearable.

He had also noticed that many people had to hang their clothing on the toilet walls before using the public toilets in order not to come out with the smell sticking on to them. In his opinion, the public toilets are a poor technology choice for the larger community and they should not be sited close to human residence. He also complained about his neighbours who usually dump chamber pots contents behind the public toilet instead of taking it inside (toilet attendant would not have it either way) as an appalling practice. He feels that open defecation is a big problem in his area adding that people leave plastic bags with faeces in the alleyways and one has to walk carefully to avoid stepping on them. Even though his house reflects more affluence (beautifully built and walled), he is not comfortable bringing home his friends because of the appalling surroundings. His family often experiences diarrhea due to overeating for their annual feast, though he also says that open defecation is another factor, and that flies landing on your food can cause cholera. He also believes that the smell of the toilet can make you ill (give you catarrh).

Latif thinks it is unhealthy for children to OD, but attributes this behaviour to the unhygienic conditions of the public toilet. He doesn't think the current public toilets fees are expensive but could be reduced or made free for children to go more. He is of the opinion that, household toilets are more important than piped water. He suggests for every household where in – home toilet is possible, one should be constructed. He has noticed the signs at the toilets, but said he read them more than three times and couldn't understand them (didn't know the word "Bangida"). He didn't send a text because he didn't think that would warrant serious attention so he called instead to voice his concerns about sanitation. He had earlier suggested using illustrations on the signs. So when he saw the new signs he was very pleased. "The signs were great! They did more than raise awareness, they also deterred people from dumping and defecating there," he said. Latif had helped in previous community cleanups organized by a community-based fan club but emerged as a real sanitation champion during the community meetings and sanitation week. He helped with community mobilisation and also helped the sanitation committee plan and execute all activities. He was part of the youth promoters who went on air with the community leaders to get the word out to the larger community.

10. **Adiza Yusif**, 76, has lived in Ayigya for 50 years and rents a room with her family (10 children). She has no formal education, is retired, and is also blind. She has no household toilet and uses the market toilet, though sometimes must rely on a plastic bag, and when she is sick and unable to walk she uses diapers. She says that it is a daily struggle for her to get to the toilet and she needs very careful assistance to use the public toilets. She is content with the conditions and says "*I am content with whatever*

the situation is because I can't see it anyway". She says at night, she, like other women, must use bags. The lack of a toilet is major problem for the whole household because the stress posed to her and her escort is huge. They have complained to the landlord several times but he refuses to build a toilet. She doesn't understand people who are able to see and walk freely but choose to defecate around, and believes it is an attitude problem.

She thinks most neighbours open defecate and that it is very common, although she cannot see this, she can smell it. She thinks that they do it because of lack of money, laziness, and the walking distances to the toilets. Although she is often allowed to use the public toilets for free because of her age and condition (but not always depending on the attendant on duty), she feels the cost for her whole family to use the toilet is expensive. Adiza says there are instances of diarrhea in her household and that flies moving from faeces to food cause them. She says that everyone should have a toilet at home, and especially for her, this would be a great gift. She believes that sanitation is an important issue in Ayigya, and that Muslims are a very clean people but a few people make it difficult to keep the environment clean. She hasn't talked to others about sanitation apart from her landlord who she's pressured to build a toilet. She had not seen or heard about the signs until the start of the survey. Through out the monitoring period, her answers have largely remained unchanged. She however newly admitted to washing hands with soap more frequently.

2.5 Results from Toilet attendants & Key informant interviews

2.5.1 Toilet attendants

Attendants from the Masasa, Old Ziko, Market and Affordable toilets were interviewed for this period. All but one (at the Old Ziko toilet) had been interviewed before. When asked if sanitation was a priority in the community, one attendant said it was important, 2 answered somewhat important and another answered not important. Only the Massasa attendant was of the opinion that people were pleased with conditions (agreeably) whilst the three others responded displeased. Most respondents in the longitudinal study seemed pleased with the Massasa toilets with one woman walking extra miles to use it. This goes to validate that there are legitimate reasons for non-use of the public toilets. 2 respondents (At Ziko and Affordable) toilet area stated the sanitation community, advising them to improve conditions, had approached them. Only the Massasa toilet provided handwashing facilities. The handwashing facility was not however accompanied with soap. This time round the visible OD around PTs seemed to have reduced with 3 attendants suggesting OD was 'common' as against one very common/widespread. Previously, these same respondents had all answered as very common/widespread.

2.5.2 Other Key informants

Several informal discussions were held with different key community members and groups including the Imams engaged in the sanitation week, schoolteachers, and a dumpsite attendant. The issue of open defecation and its potential health impacts was one of the main topics discussed. During a visit to the head teacher of the school, the sanitation committee lead discussed the possible solutions to the school sanitation problem. The head teacher acknowledged that it is essential for children have access to clean latrines and hygienic toilets. Yet she acknowledged the difficulties of maintaining

the school toilet due to lack of funds. The school toilet is currently being run as a public toilet to generate funds for regular desludging. The school children are therefore to use the toilets at no charge but with community members using the toilets during school hours, the children 'troop' on to the dump to defecate as the attendants usually complain about children keeping too long at going to toilet or making the place dirty. She acknowledged this situation is a recipe for disaster as the open defecation field is in close proximity to the school and promise to do something about it. She further said they are educating the children to practice good hygiene "we try to teach children about hygiene during the religious and moral lessons and encourage them to share the message with their peers at home".

One Imam during a discussion acknowledged the sanitation challenge in the community is a huge problem and advised all community members to take part in the efforts aimed at reversing the situation. He said that there are strong community structures in place citing the well-respected Chief and the various sub chiefs, the Assemblyman and the newly formed WASH committee in the community as examples. He also stressed the responsibility on the part of churches/mosques saying "these places are the most appropriate to bring about changes in attitudes and behaviours as it is easier for followers to adopt new behaviours when they are promoted through them."

The SC also recognises the immediate solution to the sanitation challenge in the community is improving public/ school toilet conditions and are working towards that. A member also suggested the use of social pressure through publicly naming and shaming open defecators as the key to ensuring good behavior as opposed to an earlier suggested option of fining offenders when caught. Explaining this, he said that option could be pursued but he fears that would make the committee unpopular and create a notion that they are there to extort money from community members. One member Ahlaji Abdul said, "our work should not be simply limited to advocating for good behaviour but we must follow up and do regular check-ins to see what has been done and take it from there". He believes that even though there is a huge challenge at hand and a very long way to go, they have to start somewhere. He reckoned all stakeholders have a role to play and collating the various individual efforts will ensure that sustainable improvements will occur. All the various groups engaged were fairly positive about the projects potential to support attitude and behaviour change at the individual and community levels.

MILESTONE 7

FINAL REPORT

Testing the ability of a Digital Platform to Recreate
Community-Led-Total-Sanitation

IDEO·ORG

+

WSUP

Water & Sanitation
for the Urban Poor



The document fulfills IDEO.org's contract with USAID (Grant No AID-OAA-F-12-00009) to redesign a digital platform's ability to recreate the success of 'Community-Led Total Sanitation (CLTS) in an urban area.

Executive Summary

IDEO.org and Water and Sanitation for the Urban Poor (WSUP) partnered in Kumasi, Ghana to test if an innovative information communication technology (ICT) platform can be used to recreate the success of Community Led Total Sanitation (CLTS) in an urban context. The team explored how a digital platform can infuse demand for sanitation and facilitate community action to increase use of improved sanitation and hygienic behaviors, and decrease open defecation. To assess the ability of a digital platform to achieve these results, a Baseline and Monitoring Plan (BMP) was developed to track sanitation conditions and behaviors. In accordance with the BMP this final report seeks to summarize progress over the course of the engagement in the following areas:

- Knowledge and attitudes around sanitation
- Behaviors, use and maintenance of improved sanitation facilities, and hand washing
- Engagement with the digital platform and attendance at community meetings/activities

Background

In September 2012, IDEO.org and WSUP began testing an innovative mobile platform's ability to recreate the successes of Community Led Total Sanitation (CLTS) in an urban context. The platform was a tool to assemble and activate residents of Ayigya Zongo, Kumasi to eliminate open defecation (OD) and increase demand for improved sanitation and hygiene behaviors through the use of social pressure and collective action. The platform brought a small group of community members together to start a dialogue on the sanitation conditions. A number of natural leaders emerged and a WASH committee was formed to mobilize solutions to improve the prevailing sanitation situation.

Program Design & Implementation

In determining whether or not an innovative information communication technology (ICT) platform can be used to recreate the success of Community Led Total Sanitation (CLTS) in an urban context, IDEO.org and WSUP piloted three community-facing touch points to engage public in the Clean Kumasi platform - Physical signage, Voice/Text Messages, and a Facebook Map App.

Signs were posted at community points of interest with an emphasis on unofficial dumping sites, including mosques, churches, public toilets and dumping sites. Signs solicited people to report via text message whether they saw human waste. We later revised the signs into local languages where human waste became the Hausa terms 'kashie' and 'bangida', as well as the word 'toilet,' a term widely used euphemistically to refer to feces.

The voice and text message component served as the direct dialogue with residents contributing their reports to the Clean Kumasi platform. Residents either sent in a text message or 'flashed' number on the signs. Text messages were populated on the map and respondents received an automated response telling people how many others were talking about that site and referred them to the Facebook application. To 'flash' the phone number, residents would call the number and hang up before a person picked up the line, allowing Clean Kumasi to recognize the caller's number so a Clean Kumasi team member could call back at a later time.

The Facebook app component displayed map visualizations of the sanitation status for various landmarks selected as part of the Clean Kumasi prototype. Importantly, the Facebook app also provides a community-building functionality with around these individual landmarks, each of which have their own Facebook page. The Facebook app served as an outreach mechanism for those with a regular Internet connection, such as decision makers in government ministries or private sector leaders. Another emergent motivation for the use of the Facebook app is that smartphone service providers are partnering to offer Facebook on cellphones without data fees in Ghana, allowing numerous community members access to this channel.

Please refer to Milestone 3A (Platform Refinement), Milestone 4B (Platform re-launch) and Milestone 5 (section 2.0, Platform Update – reposting signs ahead of the CLTS campaign) for a detailed account of the various stages, iterations and improvements made to the platform. The platform was successful in bringing community members together to discuss sanitation issues. Many residents agreed it helped in creating more awareness on the issue of poor sanitation in the community. It also provided a basis for the implementation of the CLTS campaign.

It was hoped that commencing the CLTS campaign would encourage many people to engage actively with the platform via texting and flashing to report incidences of OD. Though the community interest and engagement during the CLTS campaign was encouraging, engagement with the platform on the other hand was not enough to suggest that the iterations and revisions made to the signage were worthwhile. The decision to print the posters in flexi instead of stickers did not seem to make a huge difference as some signs (and poles) were missing shortly after reposting (either stolen or brought down by the rains). Subsequently, the remaining signs, which were dirty and partially hanging, were all brought down including the plywood, which hosted them.

However, the signs served an important purpose – getting a group of people together to start the sanitation dialogue. Natural leaders (Sanitation committee, Imams, youth groups etc.) had emerged to drive change. The simple messages on the signs provided a vivid link between feces and health. It provided an avenue for discussions among the residents on the poor environmental conditions. Many community members agreed it deterred people from dumping or defecating in the point of interest (POI) areas. While investment in sustaining these signs would ensure that sanitation in the community is a part of residents' every day discussions, the frequent removal of the signs and the decline in the number of flashes indicated that re-investment in these resources should be considered only in certain circumstances. Signs would need to be made more permanent and fixed in such a way that they were difficult to be removed or brought down by the weather (or people). This action has, however, left community leadership and some respondents worried that the localized improvements that had occurred at the POI areas would not be sustained with the removal of the signs.

Developing a CLTS program around the digital platform called for extensive planning and iteration by the project staff, not least because the urban environment introduced the complexities of dealing with the multi-landlord system, land tenure and city planning authorities. Thus an experienced Ghanaian CLTS facilitator was brought in early on to evaluate and recommend the best way moving forward with an integration of traditional CLTS methodologies.

As it seemed with the progress made at that time, the traditional CLTS triggering stage had been jumped and the project had entered into the post-triggering phase. Typically, in CLTS facilitation, the community mapping exercise and the 'walk of shame' would have identified the open defecation areas and helped community members to appreciate the extent of open defecation - they should have become disgusted and ashamed of their actions and the experience would have moved them to want to do something about it. With the areas of interest already identified by a similar approach but limited in extent (done with only a few members of the community and signs already posted), widespread disgust of the situation had not yet occurred.

Therefore, a long brainstorming session to identify what could be done alongside the platform was held with four experienced WSUP staff including the sanitation advisor who was visiting at the time. In the final approach, Clean Kumasi leveraged direct community engagement with the flashers living near a particular location. They developed micro communities living immediately around the spots of open defecation, and the natural leaders who emerged took charge and drove that particular group. The groups were later unified for a more comprehensive triggering meeting.

The external CLTS facilitator and WSUP staff planned specific thematic meetings with different groups to get all stakeholders aligned with the strategy, including women's groups in the community. One issue raised during these meetings regarding the causes of OD was safety at night for women and girls. Many were afraid to use the public toilets for the threat of enduring sexual violence. Another meeting was organised with the youth groups (mostly male football clubs) and finally with the opinion leaders of the community. This approach of engaging not only existing formal community leaders but also other social structures in the community allowed for a cohesive and integrated strategy.

Evaluation Design

At the start of the engagement, a Baseline report documented existing sanitation conditions and practices to provide a “before” picture on which to evaluate the changes over time. It was also used to better focus the scope and direction of the project, after valuable insights into the characteristics of the community came to light. It was then updated following the launch of an intensive Community Led Total Sanitation Facilitation (CLTS) campaign. Wherein a CLTS facilitator led the community in understanding the sanitation challenge in an attempt to trigger shame and disgust amongst community members to take action. Please note that various iterations were made with the platform, and the methods employed in the project up to the start of the CLTS implementation have been described in earlier reports. This final report is focused on the aftermath of the CLTS campaign and attempts to make a longitudinal comparison of the previous data points and information collected over time to measure the progress made toward the identified indicators as follows:

- Behaviors, use and maintenance of improved sanitation facilities, and hand washing
- Knowledge and attitudes around sanitation
- Engagement with the digital platform and community meetings/activities

In order to measure the change in the selected individuals over the course of the pilot, as earlier prescribed by the BMP, this report includes a more synthesized discussion around baseline indicator areas to highlight more on changes to the individual’s (longitudinal study participants) perspectives on sanitation, personal behaviors and actions taken in Annex A.

Interviews for this final update were conducted from 17 - 21st August 2013. Out of the 11 respondents sampled for the longitudinal study in Milestone 3, one person (Edu Kwashie) dropped out by the first monitoring period and another (Ima Talata) by the second monitoring period. The first dropout was replaced with a resident of a similar profile (Mamoda Taufiq). As the BMP initially targeted 10 longitudinal participants, adding on the eleventh for contingency and also for her perspective as a toilet attendant (before formally including toilet attendant participants), it was not deemed necessary to replace the second dropout. The questionnaire used for the study has primarily focused on the indicators areas identified by the BMP stated above. It also collected information on interviewee profile i.e. age, household size, others in the compound, and length of stay in the community. It attempted to identify respondents’ economic status with the amenities they possessed. It also inquired about in-home toilet ownership or use of public toilets. Following the various iterations made to the platform, and the launch of the CLTS campaign, the later questionnaires had featured a few extra questions aimed at gathering data on the updated indicators. Some new questions included whether participants attended community meetings, if they were willing to pay more for improved services, what specific changes they wanted to see, their perception of the new signs, perception about the sanitation committee etc. (see Appendix for a template of the updated questionnaire for this report).

Given the need to use qualitative rather than quantitative research methods (limited resources and scope of the pilot). The study concentrated on a longitudinal tracking of some selected few community members who were purposively sampled to be representative of the community. However, it is recognized that the findings from this selected few cannot be extrapolated as proportionally indicative of the wider community. Also, some bias must be expected from the “self selecting” respondents who had engaged with the platform either via texting in a message (when that was the case) or having attended one of the earlier community meetings. Their concern for the sanitation situation is evident in the fact that they took action and this may influence their answers i.e. giving predetermined answers or saying what they think interviewee wants to hear which may reduce the potential to induce personal change during the pilot. Therefore, some “neutral” participants were identified and included in the study to offset this bias.

Formal interviews (toilet attendants) and Informal discussions were done with some key informants i.e. neighbours of respondents’, sanitation committee, Imams, schoolteachers and children for their perception of change in the wider community. All these insights into the general sanitation conditions and behaviours are synthesized to provide a measure of the changes influenced by the pilot and this is summarized for each of the three indicator areas identified in the BMP in section 5.0 (also see sec. 4.1 for key information on participants). Section 4.1 below, will also combine data collected on the longitudinal participants from the 1st- 4th wave to track changes in the selected individuals over the course of the pilot.

Findings

A final update on Indicators tracked over the course of the program is as follows:

5.1 Indicator Area 1

Behaviours, use and maintenance of improved sanitation facilities, handwashing and Health Knowledge.

- The wide majority of people living in Ayigya do not have household toilets and rely on public toilets.

o This still remains the general situation, though there is promise of improvement.

Though new toilet ownership is difficult to estimate for the larger community, there is an increasing awareness of the desirability of household toilets amongst the longitudinal participants. As reported earlier, one respondent had talked to her landlord about getting a toilet at home and another reported of having recently asked his husband to construct one. Toilet attendants had not noticed any change in public toilet usage (suggestive that no significant household toilets have been built?). The constraints to in-home toilet ownership (extensively discussed in previous reports) will continue to hinder progress. On the plus side, the community has several public toilets, which provide a good alternative, and for one respondent (Wasilatu), it seems preferable as its “problem free”. But majority of the toilets are not properly maintained. There is a desperate need to have toilets that are open and accessible 24/7, and are clean and hygienic. There are promising signs of improvement as the sanitation committee is working closely with the toilet attendants to improve conditions. Localized improvements were recorded at Masasa therefore showing some promise of improving.

- Due to a variety of barriers to public toilet use, some people practice open defecation and dump faeces in bags around the community. For this reason, solid waste collection is linked with sanitation.

o. This remains the case to a large extent but there are promising signs of improvement.

The practice of OD is still evident within the community. Faeces in bags are also a common sight. Apart from the improvement recorded earlier, sacred places like the mosques, churches and water points (where open defecation was sometimes also visible) had visibly improved. From all the routine visits done, there was no evidence of OD as was sometimes seen before. Informal conversations with individuals and some community leaders revealed that the signs scared of open defecators away and requested for their replacements. The change is also largely attributed to the on-going sanitation improvement campaign by the religious leaders and the SC.

- The condition of public toilets and the cost of using them are likely key reasons for nonuse

o. This still remains the case.

There is a considerable level of dissatisfaction in the use of the shared toilet facilities amongst all respondents including non-users like Awal and Mamuda. The queues are too long, what can we do other than use the bushes? “The toilets however still remain people’s real option providing some form of dignity or they resort to the practice of flying toilets or having to use a chamber pot at home or use the nearby bushes.

- Women, children, the disabled and the elderly are likely to make up of the majority of non-users due to inability/fear of traveling to toilets, restrictions against children and incompatible design for children, and the lack of willingness to give children money to using public toilets.

o. This remains the current state.

People like Adiza Yusif, the blind woman who has to painstakingly travel to the toilet everyday. Mostly requiring assistance from her ground children (putting extra burden on them). Another example is the school toilet situation described above. Often these poor, vulnerable and disabled people have the most need but have the least access to sanitation. They often find it difficult to use existing facilities because they are inaccessible. Like in the case of the children, it can be much nicer to go outside when school toilet conditions are that bad.

- People often rent their houses from landlords who have not constructed household toilets, or have removed them and are unwilling to install them. Some people have urged their landlords to build them toilets.

o. This remains the current state and will only improve with the implementation of strict policies whilst ensuring compliance. Many landlords do not prioritise sanitation and will always seek to maximise returns on their investments. It therefore beholds on tenants to of a house to collectively put pressure on landlords and demand for improved services. But often, due to high demand of rooms in these areas, this action can backfire.

- Hand washing with soap immediately after using toilets is not practiced, as public toilets do not provide soap.

o. This remains the current state. Toilet attendants' lack the interest to provide handwashing facilities due to misuse. At Massasa, the only place where there is some sort of an effort at providing handwashing facility, a barrel is filled with water and placed in front of the toilet but no soap is provided.

5.2 Indicator Area 2

Knowledge and Attitudes around sanitation

- The practice of open defecation and dumping of faeces in bags is seen as a common problem but is unacceptable by many.

o This situation is gradually changing. Localised improvements was recorded (as earlier described) and as it is widely agreed to have been influenced by the signposts and the sensitisation programs done, in the absence of these factors a decline in conditions should be expected, as large-scale behaviour change did not occur with the sanitation promotions done.

- People think there is a need for household toilets, but recognize that it is a challenge for all houses to have them given the difficulties in de-sludging trucks accessing them via unpaved and narrow alleyways.

o This remains the current state, with the poor planning housing situation, the traditional household toilet option may not be possible for several households in the community. The immediate option is to improve the existing public toilets. At one of the SC meetings, the possibility of a couple of houses coming together to share cost and construct a 'semi-public' toilet was explored. This is increasingly being viewed as an intermediate option especially for those houses where an in-home toilet is not possible.

- Many people know that exposed faeces can lead to diarrhoea and cholera, and recognize flies and unwashed hands as the vectors, but some do not know this.

o It seems by the end of the 4th survey all respondents made the connection between faeces and health, with more people giving more specific answers as opposed to vague answers i.e. *eating too much* being the cause of diarrhoea. The bias of repeated questioning might also be influencing/educating responses.

- There are some who believe that using a public toilet can cause poor health, namely through the smell, and vaginal infection.

o This remains the current state, the issue of virginal infection seems to have gained ground with some young females citing personal instances of occurrence. More education is needed on his front.

- Community members have engaged in solid-waste clean-ups in the past and are expected to engage actively in such activities.

o Although all respondents stated they were willing to work together to improve conditions, only 4 respondents had attended meetings or were actively involved in any of the sanitation activities. There seem to be a decline in the number of people who used to attend community meetings and lack of drive on the part of the community organizers themselves.

5.3 Indicator Area 3

Engagement with the digital platform and community meetings

While some community members and some members of the sanitation committee had not unanimously viewed the platform as having been effective to the core (citing various reasons ranging from little initial publicity, difficulty with understanding the signage, flashing to report not being their usual way of doing things etc.), they indicated that wider and more systematic implementation would be more effective if there had been clarity about the program around the signs before launching. For example, explaining why the signs were there, and what the follow-up actions participants could expect after a flash is received would have cleared some confusion. Following the removal of the signs, some residents and community leaders had requested them to be put back as they helped to improve the localized areas. One woman who had her salon close by the market toilet felt when the sign was up, it deterred people from defecating behind her shop. She felt with the signs gone, people would start to defecate around.

Conclusions & Recommendations

The program was successful in exposing community members to the dangers of open defecation and in inspiring people to take action in their respective communities. Additionally, there was meaningful engagement with local governments as evident by local officials bringing a dumpster to a community waste site and cleaning the area.

That said, the communities never really took full ownership of the CLTS campaign and its benefits. There seemed to be a general lack of interest and drive on the part of the community organizers and leaders. The lack of a deep commitment from the community – coupled with the local challenges around public toilet usage – limited the likelihood of success for the experiment, leading to less impactful results.

Comparing findings at the end of the pilot to the baseline survey, not very much has changed apart from the individual improvements listed above. There is a lack of household toilets (not more than 10% coverage, the SC reckon) with a large proportion of the community dependent on public toilets and several others practicing open defecation and dumping of feces in bags, despite the availability of several public toilets. Evidence gathered suggests that different patterns of behaviours and attitudes which are deeply rooted in people's material circumstances, cultural norms or as a result of their long-term practices, and which have become part of the way of life and is mainly the cause of the prevailing sanitation situation. However, there is an increasingly growing awareness of the repercussions of the situation and in which several community members and leaders have expressed frustrations and are willing to work towards improving the situation through collective action. This is evident in enthusiasm and involvement during the CLTS campaign, and their early formation of a WASH committee to pay attention to the situation. And for the first time in many years, at Ayigya Zongo, sanitation is receiving the highest endorsement, representation, and support by all stakeholders.

The desirability of household toilets is increasingly being recognised by many, yet also the awareness of the challenges in achieving this due to desludging obstacles and reluctant landlords. However, evidence gathered suggests that even when increased household toilet coverage does occur, automatic usage by all community members is not to be assumed, just as it is the case of the public toilet patronage. More proactive measures are therefore needed to support people to move towards desired behaviours. The committee would have to continuously work at changing peoples' behavioural attitudes to ensure usage. Recognising that, there is only so much that can be achieved with sensitisation and advocacy as actual practical changes only come about with the individual community member's conviction to change.

Many people also have legitimate reasons for not using the existing public toilets, which were also largely validated by toilet attendants. The absence of hand washing with soap at public toilets also presents a huge challenge. Solving these issues will require more practical measures, which is to be achieved by the established community WASH committee in coordination with all relevant stakeholders through a combination of awareness raising, compulsion and enforcement, providing legislative structures to improve conditions.

Achieving obvious changes in behaviour is likely unrealistic in the specified time period, as this process takes time to occur and even made more difficult in a complex community like Ayigya. However, the capacity of the sanitation

committee has been built to continuously provide support to community with regular sanitation programmes, and awareness creation activities following the end of the project.

There is a need to stimulate demand, and to promote more understanding of the benefits of improved sanitation through awareness creation as the community's interest in improving sanitation was aroused and requires constant education and repetition by the sanitation committee to ensure sustenance. Recognising that it may not be possible for the committee to achieve it all, there should also be a focus on developing and maintaining networks of communication with the various stakeholder groups like community leaders, religious leaders and schoolteachers to all work to influence the situation.

The community seemed to be on the right direction with the earlier sanitation promotions done. However, the momentum gathered was lost following a short period of inactivity. Whilst recognising the need for constant advocacy and awareness creation, community members should not dwell or rely so much on what leaders or 'others' should do, but rather focus on practical and realistic actions, within their own capacity, which collectively leads to the desired results.

While some community members and some members of the sanitation committee had not previously viewed the platform as having been effective to the core (citing various reasons ranging from little initial publicity, difficulty with understanding the signage, flashing to report not being their usual way of doing things etc.), they indicated that a wider and more systematic implementation would be more effective if there was clarity about the signs before posting.

Scaling Plan

It is the opinion of IDEO.org that it is not necessary or feasible to further the duration of the Clean Kumasi program through public investment at this time. However, based on learnings in this field, IDEO.org feels enthusiasm around continuing to work in sanitation and hygiene at the community level. Specifically, IDEO.org believes that 'learning by doing' through the human-centered design methodology is an incredibly powerful tool to surface insights and solutions in this sector.

IDEO.org is committed to sharing learnings, successes and failures with the public. This commitment is rooted in an organizational belief that social entrepreneurs and implementers everywhere can learn from one another, institute changes in their own programming and therefore amplify their impact.

This program will serve as an excellent case study for groups working in behavioral change as it relates to the field of water, sanitation and hygiene.

Feedback for USAID

IDEO.org has greatly enjoyed working with William (Wes) Day (DIV) on the Clean Kumasi program. We were behind schedule at several points during our program and William's flexibility and guidance allowed us to ensure that we were experimenting and exploring different implementation methods and strategies in a way that heightened our impact.

IDEO.org's strength is surfacing powerful insights in poverty-related challenges through the human centered design methodology. We believe that our methodology was critical in determining the community's exposure to the benefits of CLTS and improved sanitation practices as a whole. Additionally, IDEO.org learned a great deal about working USAID/DIV that will benefit the organization in the future.

On a separate note, IDEO.org learned a great deal about remote, long-term program implementation and working with local partners in longer engagements.

Annex A

Longitudinal Study Participants

To complement the previous reports, which have largely focused on the "general" sense of the average behaviours and conditions, the interview transcript up until the last survey has been tidied up, adding on new insights to each person, to essentially demonstrate the individual changes in attitude, knowledge and behaviours over time.

1. **Alahaji Abdul Munim Abubakar**, 45 years old, is a high school graduate married with 2 children (a nineteen year old teenager and a newborn). Though originally from the North, he has lived his whole life in Ayigya Zongo, and says he loves his community and as such; he takes active part in all community events from funerals to outdoor ceremonies. He was selected as sub chief of the community (chief of the Fulani people) some years ago. Alahaji works part time as a clothing designer and is also on the board of the KMA for the Ayigya Town Council. He is the landlord (by inheritance) of a family home where he lives with his aged mother and is responsible for over 15 other people, including his late brother's children and a mentally retarded nephew.

There used to be a bucket latrine in his house, and then a dug pit latrine, but due to desludging problems, it was rendered unusable so the family now relies on the public toilets (Ziko), which is nearby, and he would never personally rely on a plastic bag or OD because he sees it as "*demeaning*". The women and children in the household rely on the old Ziko (more affordable option) toilet at night (which is not locked). And his elderly mother and the young children use chamber pots at home, and the faeces are then mixed with other solid waste from the house and taken to the dump area. His retarded nephew is however able to use the public toilets unassisted. He feels that open defecation is very common in the community and considers it unacceptable. He says children usually do OD and believes the primary reason for this is poverty, and the costs of using the toilets for large families (like his). He is satisfied with the public toilet conditions as "*The old block was messy and smelled badly but the new block is in good condition*".

The children in Alahaji's family are often affected by diarrhoea, and he recognizes the connection between faeces, flies and food. He indicates he washes his hands regularly as part of his Muslim practices and especially before eating and after using the toilet. "*Being clean is a way for us to express our character as good Muslims*" he said. He thinks that all households should have toilets at home, and though he recognizes the challenge of desludging all the household toilets given the road conditions, he suggests the government should improve the road. As an Ayigya town council board member, he advocates for cleanliness in the community, he organized for the construction of household drainage systems in his area. He did see several signs for the system, but didn't understand them or the objective and asked Ima Abuima about them (who he had seen with the team putting them up). He attended the early community meetings and was one of the early natural leaders who emerged. He has since been an instrumental part of the team making a difference in the community. He's been able to use his position as a sub chief to arrange for the community group to meet with the main chief and was mainly responsible for the formation of the SC in the first place. He was amongst the community leaders trained to lead the CLTS facilitation process and took centre stage during the sanitation week activities and was also part of the community members who did the radio program.

Sharing his experience on the sanitation committee he said, "*I must say that the task is a very difficult one. You could do a lot of sensitisation today and people seem to have heard, even make promises to improve behaviours, but when you look at the situation after some time, you will see that really nothing has really changed*". He however stated that, the sanitation committee is working hard to change the situation, one issue at a time. "*You cannot force good behaviour down people's throats, there needs to be a self conviction to change so, you advocate for change then wait to see*".

Alahaji realizes how dangerous open defecation and unsanitary habits in the community is, and as a family man and a community leader, he deems it a personal responsibility to do all he can to improve the situation. He stresses the need for people to have in-home toilets where possible and the need for regular triggering and sensitization to ensure good behaviour.

2. **Felix Kweku**, 30, has only lived in Ayigya for two years and rents a house with his wife and only child (four years old). He has completed junior high school and works as a mason. Due to the absence of a household toilet, he and his wife always use public toilets (never a bag or open defecation) and primarily use the market toilet near his

house, though he complains of the bad smell and insects, its their only real option and hopes that the situation could be improved. His child uses a chamber pot, which his wife later dumps in the toilet, though she has to pay for this, she's usually met with strong resistance by the toilet attendant as the practice of pouring chamber pot content into the toilets mostly renders them messy. He believes open defecation is not very common, in his area. Though he hasn't seen people using bags as toilets, he sees the bags dropped in the alleyways, so he knows that people do it. Felix believes people open defecate because the toilets are not clean so they are better off using the bushes than paying for a dirty facility, but he doesn't attribute it to unaffordability or laziness.

Diarrhoea is not a problem in his household and he recognizes that it can come from not washing hands after using the toilet (though there is no handwashing facility at the toilet, he washes his hands when he returns home). Felix is very concerned about open defecation and the mess at the public toilets makes him sometimes not want to use them. While he thinks people do need household toilets, he suggests it should only be encouraged where possible, and be limited to a few houses due to the problem of emptying. He advised that if everybody in the community were to own household toilets, the situation would be worsen giving the desludging problems. He doesn't think the PT's are expensive and is willing to pay "as much as it takes" to use an improved PT or have a household toilet especially for his wife and kid.

He recognises that OD is unacceptable and says "*it sickens him to see such filth in the community*". He thinks most people care about sanitation and are willing to work together to improve it, but some simply can't be bothered. Although he saw multiple signs for the system, he didn't bother to read any, but asked a WSUP team member about it when he saw her attending to one. He thought the later signs were more "attractive" and easy to understand. He personally saw groups of people gather around to discuss the content on the board (usually children). Felix never attended any community meetings or took part in any action. He reported being busy throughout sanitation week and beyond. He however said he is willing to work together with others to improve the situation and had initially talked to some people in the community about unsanitary practices (e.g. a man burning toilet near the water point).

3. **Ima Mariam Mamprusi**, 76, has lived in Ayigya for twelve years where she rents a home with her six children and ten grandchildren. She has no formal education and is retired charcoal seller living on remittances from her children and friends. There is no household toilet so she always relies on the market toilet though she complains of smell and insects. The distance travelled to the toilet is also a major problem due to her mobility challenge. The women in the household pay to use public toilets (never using bags) and at night they use the public toilets that stay open and are close by' (though she sometimes wakes her grandchildren to accompany her). Her grandchildren use diapers or chamber pots, and wrap faeces in bags to take to the dump. Although her neighbours don't open defecate, she sees piles of trash (sometimes mixed with faeces) left behind her house.

She thinks open defecation is not very common (and is unacceptable) and that only a few people do it because they are very lazy or just selfish about wanting to keep their own spaces clean, but littering the alleyways. Ima Mariam was initially unaware of the cause of diarrhoea other than eating too much, she later recognises that flies can cause disease when they move from faeces to food. She thinks the public toilet charge is expensive and wished for it to be free. She would like to see toilet conditions improved but is not willing to pay any extra fee for that.

She feels that sanitation is important in the community, and people want to avoid being fined by the KMA, so they keep their surroundings clean but disregard communal space. Although she saw the sign at the market toilet, she couldn't read or understand it. Answering the same questions about sanitation and health over the period, Ima's answers largely remained unchanged but she seems now to make the connection between faeces and health saying, "when faeces come into contact with food, it causes sickness". Although she is appalled by the situation she doesn't think that discussing it with anyone will change it. She never attended any community meetings or took part in any of the sanitation activities done. She explained she had to stay home all the time to cater for her grandchildren. She has however taken part in communal labour in the past and has always encouraged her older grand children to use the PT. She is of the opinion that working together with the SC, the situation will improve.

4. **Miriam Kornyoh**, 38, has lived in Ayigya for 17 years and rents a house with her husband and two children (ages: 9 and 16). She is a high school dropout and works as a hairdresser/trader. Due to the lack of a household toilet, she uses the market toilet, though she is unsatisfied with the conditions (smelly and full of used paper) and says it can make you lose the urge to go to the toilet. She sometimes relies on a bag at night to avoid the risk of attack while going to the public toilet. She objects to the fact that children must pay to use the public toilets so she

tries to avoid the fee by bringing her own anal cleansing materials for the children to use. She says that open defecation is very common (some neighbours do it) and people do it for fear of being attacked at night, though the main reason is poverty, and selfishness.

Miriam says that diarrhoea does occur in her family and she recognizes its cause as not washing hands after using the toilet and before eating. However, she also suggests that using public toilets can cause “white” (vaginal infection from the heat). She believes that open defecation is unacceptable, and though it is a difficult problem to stop, it would improve people’s health if they could and that more people should be encouraged to build toilets if they can be emptied from their houses. While sanitation is extremely important in the community, a few people don’t care. She has previously complained to others about people dumping faeces around her shop, and she joined a hairdressers association in a clean up. She had previously complained bitterly about the conditions at the Market toilet She previously reported on having to wash down anytime she visited the toilet and said, “*It’s like the smell enters your body and makes you sticky*”. But by the second monitoring period, Miriam had switched toilets. Now using the Masasa toilets, which are generally believed to be cleaner, having to walk for close to 200m more. She had earlier stated she was not willing to pay more for improved toilet conditions as she felt the toilet fee was already expensive, so it now seems like she is getting good value for her money at the Masasa toilets. Although she saw the earlier signs near the market toilet, she didn’t read it, but her husband did and explained it to her. She spoke with her husband and neighbours about it and thought it will deter people from indiscriminate dumping. She believed that the new signs were more understandable without her requiring any further explanations from anyone. She also stated that incidences of OD reduced when the signs were placed citing the improvement around her salon as an example but feared, with the removal of the signs, the situation would go back to how it was so she advised for the signs to be replaced’.

5. **Rahinatu Abdellah**, 45, was born in Ayigya and owns a house with her husband and four children; she has no formal education and is a provisions shop owner. With no household toilet she uses the Masasa toilet and says the condition is OK now, though the old one was horrible and at times unusable. She sometimes relies on a plastic bag when it is urgent or the toilets are closed at night due to the very unsafe conditions (risk of rape) near the affordable housing area, and then takes it to the dump with the general waste, or discretely leaves it at the public toilets. The young children also rely on bags in chamber pots. She says that open defecation is a very common problem in the community, her neighbours do it too, and the reason is primarily the risk of going to the toilets at night, though the smell and queue may also deter people. Rahinatu says there is no problem with diarrhoea in the household and it is caused by food poison and flies- and she later makes the connection that flies carry disease by moving between faeces and food.

She suggests that there is a risk of getting “white” or chlamydia from using the public toilet. She sees open defecation as a very big problem and is willing to pay more for improved sanitation, including the contribution toward a household toilet. She thinks sanitation is an important issue in the community but a few people don’t respect themselves and the environment. She has talked to others about sanitation and feels the number of people leaving bags of toilet/open defecation near her store has decreased recently. She had earlier reported not having seen the signs even though she admitted to using the Masasa toilets every day. She however did see the new signs and thought they drove home the underlying message. She reported having taken part in a recent Muslim woman discussion, on sanitation after which she’s started putting pressure on his husband to construct an in-home toilet but there is not enough money at the moment. She had however not attended any previous meetings or taken part in any sanitation activities apart from the one she stated having done many years ago.

6. **Victoria Abofour**, 17, has lived in Ayigya for 10 or more years and she lives in a rented house with foster parents (where she seems to work as somewhat of a maid as well). She is a junior high student at Ayigya public school. There is no household toilet, and though there are free toilets at school, she doesn’t use these and uses the Masasa toilet when she comes home from school because she would rather pay to use a clean toilet than those at school. At night she “rarely” relies on a plastic bag, but some of the women in the household more regularly use plastic bags and dump the faeces near last stop. Children defecate at the dump near the school and this is widely seen as normal. She thinks such behaviour is a common problem in her community and that most neighbours do it because they don’t have a toilet at home and feel lazy, don’t have money, or they don’t want the smell of the public toilet to stick on their clothes. She feels it’s unacceptable and would like to see the bushes around last stop cleared up. Victoria says that diarrhoea does occur in the household and she later connects cholera to flies coming in contact with an infected person’s stool.

She also believes that the smell of the public toilet can give you cold (catarrh), and she has heard that you can get chlamydia from the public toilet, though she's not sure if it's true. She thinks that the cost of using the public toilets is fair, but the toilet should be free for children. She thinks that sanitation is not an important priority in the community as evident by the poor maintenance of public toilets. She washes her hand with soap at all times and says she's learnt from school that good hand hygiene equates to good health. Though Victoria has talked to her peers about sanitation. She had helped with previous clean ups, attended meetings and had also taken part in a recent clean up done by the church. She maintains she doesn't think that she can change much at her age. However, she's always been a strong advocate of the signs pointing it out and explaining content to the children who come around to defecate. She believes the sign deterred children especially from defecation at the POI areas and wished for them to be replaced.

7. **Wasilatu Asiamah Nuhu**, 43, was also born in Ayigya and rents a house with her husband and four children (ages 13-23). She has no formal education and works as a food seller. She doesn't have a toilet in her house and always relies on the Masasa toilet, nearby. She says it's relatively clean compared to the surrounding toilets, but before the new one, the situation was very bad. Although she says she never uses bags, a lot of neighbours still do it when the toilets have closed, and dump them around the last stop area or the alleys. However, she thinks that open defecation is not very common, limited to some few people, especially now that the addition of new toilets has made the situation better. She finds open defecation very disturbing, but thinks the price of public toilets inhibits some people from using them, or that people just don't have the right change (coins). She feels that it's expensive for her whole family to use them, and wishes she could pay just 10pesewas. Wasilatu says that diarrhoea is not a problem in her community, but she understands that it is caused by dirty environments. She mentioned not washing hands after using the toilet as a cause of cholera, and says that she washes her hands when they are dirty and after using the toilet or handling children's faeces. She also believes the flies and bad smell from the toilet can cause sickness and you can get chlamydia from using it.

She says that people need household toilets, and though this is the best solution, "landlords, don't prioritize it. They even convert toilet rooms for rentals." She also however said "sometimes it seems you are better off walking long distances to the PT than having to deal with the sharing toilets in a compound house like mine (an estimate of about 30 others in the compound). It would be a problem when it comes to cleaning, sharing cost for desludging etc. At least with the public toilets, you are saved all the trouble". Sanitation is a somewhat important priority in her community; some people are very concerned (like herself), while others care only about the cleanliness of their own households. She says she literally had to police the area behind her shop and fight with the people who dumped bags of trash or faeces there. As a food seller, she makes sure to practice good hygiene at all times, washing her hands all the time but more carefully and with soap after handling her child's faeces. She couldn't read the earlier signs but the new signs were self-explanatory. She heard about the sanitation week activities at the mosques and on the radio but she didn't attend the trigger meeting or take any action. She however said, when she heard the programme being aired, she was proud to be part of the study.

8. **Mamoda Taufiq**, 25, has lived in Ayigya for 12 years and lives in a different room with his aged grandmother and siblings. He has no formal education and does odd jobs for a living. There is no household toilet and even if there were, Mamoda reports he will not feel comfortable using it. Yet he also complained about the poor conditions at the public toilet but couldn't be bothered because he doesn't use it. "I prefer to use the bushes, at all times and not even a household toilet will make me stop". He says the insides of the public toilets are too hot for human comfort and as such prefers to use bushes where he is also free to smoke along side relieving his bowels. He cannot bear the stench, the long queues and having to pay to defecate. He stated that the women in the household, including his old grand mother use the public toilets all the time even at night. But use bags when urgent, which is later dumped with the solid waste on the dumps. The little children primarily use the dumps or chamber pots while those above age 10 pay to use the PTs. He has never participated in any clean up or activity in the past and doesn't think anything in the community has changed in a very long time. He doesn't always wash his hands after visiting the toilet. Stating that he only does that sometimes when he remembers (usually simply with water). When he saw the sign (old) at laststop, he didn't understand them, and didn't talk with anyone about them. He had however wondered who had put them up and what it meant

He was able to make the connection between faeces and health stating that when flies move from faeces to food, they cause illnesses. He didn't seem to think that there was any problem to the community with his preference to OD

as he said “ I go further down the bush so that should not be anybody’s business”. He earlier seemed to think that OD should be acceptable but later his response changed to unacceptable. A toilet at home would be great for her grand mother but there is no space or the money to construct one. He had heard about the sanitation activities but did not take part in any because he is always busy.

9. **Latif Abdul Awal**, 28, has lived in Ayigya for over twenty years in a home owned by his father. He has some form of tertiary education and works as a film director and also in a pharmaceutical shop. He lives with his father, father’s three wives, and 20 other children in a house directly opposite the market toilets. He is the only respondent who has a flush toilet in his house (they have three of them). He says the toilets at home are very hygienic and is emptied every three months. He reported that only a few houses in this neighbourhood have toilets and the large majority depends on the public toilets yet the public toilet conditions are poor. He has only at one time attempted to use one of the public toilets in the community and described the experience as “horrible”. He further complained of the obnoxious stench from the nearby toilets, especially during desludging and advised that emptying could be done at dawn, when everybody is asleep instead of at mid mornings as the smell sometimes gets unbearable.

He had also noticed that many people had to hang their clothing on the toilet walls before using the public toilets in order not to come out with the smell sticking on to them. In his opinion, the public toilets are a poor technology choice for the larger community and they should not be sited close to human residence. He also complained about his neighbours who usually dump chamber pots contents behind the public toilet instead of taking it inside (toilet attendant would not have it either way) as an appalling practice. He feels that open defecation is a big problem in his area adding that people leave plastic bags with faeces in the alleyways and one has to walk carefully to avoid stepping on them. Even though his house reflects more affluence (beautifully built and walled), he is not comfortable bringing home his friends because of the appalling surroundings. His family often experiences diarrhoea due to overeating for their annual feast, though he also says that open defecation is another factor, and that flies landing on your food can cause cholera. He also believes that the smell of the toilet can make you ill (give you catarrh).

Latif thinks it is unhealthy for children to OD, but attributes this behaviour to the unhygienic conditions of the public toilet. He doesn’t think the current public toilets fees are expensive but could be reduced or made free for children to go more. He is of the opinion that, household toilets are more important than piped water. He suggests for every household where in – home toilet is possible, one should be constructed. He has noticed the signs at the toilets, but said he read them more than three times and couldn’t understand them (didn’t know the word “Bangida”). He didn’t send a text because he didn’t think that would warrant serious attention so he called instead to voice his concerns about sanitation. He had earlier suggested using illustrations on the signs. So when he saw the new signs he was very pleased. “The signs were great! They did more than raise awareness, they also deterred people from dumping and defecating there,” he said. Latif had helped in previous community cleanups organized by a community-based fan club but emerged as a real sanitation champion during the community meetings and sanitation week. He helped with community mobilisation and also helped the sanitation committee plan and execute all activities. He was part of the youth promoters who went on air with the community leaders to get the word out to the larger community.

10. **Adiza Yusif**, 76, has lived in Ayigya for 50 years and rents a room with her family (10 children). She has no formal education, is retired, and is also blind. She has no household toilet and uses the market toilet, though sometimes must rely on a plastic bag, and when she is sick and unable to walk she uses diapers. She says that it is a daily struggle for her to get to the toilet and she needs very careful assistance to use the public toilets. She is content with the conditions and says “*I am content with whatever the situation is because I can't see it anyway*”. She says at night, she, like other women, must use bags. The lack of a toilet is major problem for the whole household because the stress posed to her and her escort is huge. They have complained to the landlord several times but he refuses to build a toilet. She doesn’t understand people who are able to see and walk freely but choose to defecate around, and believes it is an attitude problem.

She thinks most neighbours open defecate and that it is very common, although she cannot see this, she can smell it. She thinks that they do it because of lack of money, laziness, and the walking distances to the toilets. Although she is often allowed to use the public toilets for free because of her age and condition (but not always depending on the attendant on duty), she feels the cost for her whole family to use the toilet is expensive. Adiza says there are instances of diarrhoea in her household and that flies moving from faeces to food cause them. She says that

everyone should have a toilet at home, and especially for her, this would be a great gift. She believes that sanitation is an important issue in Ayigya, and that Muslims are a very clean people but a few people make it difficult to keep the environment clean. She hasn't talked to others about sanitation apart from her landlord who she's pressured to build a toilet. She had not seen or heard about the signs until the start of the survey. Through out the monitoring period, her answers have largely remained unchanged. She however newly admitted to washing hands with soap more frequently.