Blockages to Service sustainability of Water, Sanitation and Hygiene in Schools
Case study of selected public schools in Kampala Uganda

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OIDA International Journal of Sustainable Development, Ontario International Development Agency, Canada
ISSN 1923-6654 (print) ISSN 1923-6662 (online) www.oidaijsd.com
Also available at http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html

Abstract: When Water, Sanitation and Hygiene (WASH) are not adequately available in schools, children`s safety and health are compromised as their precious education time is lost collecting water and or queuing up to access the limited sanitation facilities. This has a regressive bearing on (1) privacy and dignity (2) school attendance (3) student health (4) learning outcomes (5) gender equity and (6) poverty. Every child deserves an opportunity to learn in a safe and healthy environment. Safe drinking water and a safe place to use the toilet are as important as teachers, classrooms, and books. Generating evidence on the cause of service failures and low sustainability of school Water Sanitation and Hygiene services is essential to improve the quality of education. This study assessed blockages to WASH service sustainability of Water Sanitation and Hygiene in Kampala's public primary schools to inform the development of sustainable WASH in school's service delivery and management models. Data collection methods included desk reviews, key informant interviews and focus group discussions. WASH blockages analysis was conducted to give a visual representation of the challenges and barriers prohibiting sustainable access to WASH in Schools. Key study findings highlighted three categories of blockage including; enabling environment, WASH infrastructure supply, and service sustainability.

Keywords: Education, Hygiene, Sanitation,Water, Blockages, Kampala

Introduction

Kampala Capital City Authority (KCCA) is charged with administration, and provision of infrastructure and services for Uganda's largest urban centre, political seat and economic hub. Provision of education services including regulation, coordination, general administration and management of educational institutions is overseen by the Directorate of Education and Social Services (DESS), while the Directorate of Public Health and Environment (DPHE) facilitates and provides support to secure the health and productivity of Kampala's population. Adequate water, sanitation and hygiene (WASH) facilities contribute to KCCA's over-arching goal of creating an environment that enables development.

Water, Sanitation and Hygiene in Schools (WinS) provides a healthy and comfortable environment that helps improve children's health and boosts educational attendance and achievement. WinS interventions lead to reduced WASH-related disease thereby improving children's cognitive function and attention; reduce days missed from school and provide more time on the learning task; thus, improving performance of the students and thereby achieve quality education. Adequate WinS services have special significance for school-age girls who have reached puberty girls by ensuring their privacy, dignity, comfort and safety during menstruation. Provision of WASH services in schools thus contributes to inclusive and equitable socio-economic growth and development.

Introduction of universal education two decades ago has dramatically increased net primary and secondary school enrolment in Uganda. Primary school enrolment has increased threefold from 2.8 million in 1997 to 8.7 million in 2017, while 65% of the 1.5 million in high school are universal secondary education (USE) students (MoES, 2017). Rapidly increasing enrolment has led to challenges in Uganda' education system, including inadequate access to school WASH facilities and limited teaching staff. The Ministry of Education and Sports (MoES) and partners have

risen to the occasion through education programmes and infrastructure supply – including sanitation facilities. Nonetheless, additional work is necessary to achieve sustainable access to WASH in Schools.

As with other sub-national governments, KCCA is responsible for allocating funds in its budget for schools. Whereas there is no specific budget allocation for WASH in Schools, the School Facilities Grant (SFG) can be utilized to cover cost of new infrastructure – including latrines/toilets. The rule of thumb is such that schools can use up to 5% of the SFG for WASH-related costs. Once a school has received WASH hardware, it is the school's responsibility to operate and maintain the facilities.

In spite of the aforementioned progress with respect to universal education, primary school completion rate stands at 60%. Reasons for poor retention are many, but anecdotal evidence suggests inadequate WASH in Schools plays a role. Studies have established barely 40% of Kampala's public primary schools meet the national standard for pupil to toilet/latrine ratio of 40:1. And the challenges of latrines in urban settings aside, the sanitation technology of choice for 57% of Kampala's (KCCA) primary schools is ventilated improved pit latrines (42%) and traditional latrines (15%). Two factors were cited for choosing pit latrines: i) ease to maintain and operate; and ii) centralized sewerage covers less than 10% of the city and is out range for most public schools.(GIZ RUWASS and KCCA, 2014) Inadequate resources at the disposal of public school management teams make provision of drinking water, soap for hygiene, adequate menstrual management, and so on an uphill task(WAU and KCCA, 2015).

WaterAid Uganda (WAU), is implementing a 3-year Sustainable WASH Services (SusWASH) project. Part of the project seeks to improve systems and capacity of KCCA and other WASH actors to provide universal access to equitable and sustainable citywide WASH services. WAU will support KCCA and other government agencies to create a common WASH improvement plan, monitor progress, reflect on results, determine and implement course-corrections.

Study Goals

The purpose of this assessment is to contribute to the development of sustainable WASH in Schools service delivery and management models. The study sought to generate evidences on the cause of service failures and low sustainability of school WASH services, which in turn adversely impact the quality of education. The blockages to WASH in Schools were grouped in three categories: enabling environment (policies, planning, budget), WASH infrastructure development (access, equity and capacity), and sustainability (O&M inputs, maintenance and utilization). The specific objectives of this Assignment were to:

a) Assess blockages to service sustainability of WASH in Kampala's public schools
b) Define cause-effect relationships of WASH service failures
c) Recommend appropriate models for sustainable delivery of WASH services in schools

Scope

The study covered public primary and secondary schools within Kampala. KCCA directly administers 79 primary schools, and provides indirect support to 22 government-aided secondary schools. The consultant conducted desk reviews, key informant interviews and a focus group discussion with relevant officers from KCCA's public health and education directorates. Additional primary data was gathered from 12 publicly-owned schools pre-selected at KCCA's direction. The Consultant also provided support in shaping the process of the assessment – including identifying the areas of focus for data collection and analysis. This included developing appropriate WASH blockage analysis tools, and briefing WAU and KCCA staff with respect to applying aforesaid tools to collect data at city and school levels. The Consultant also took the lead to adapt the WASH blockage analysis tools to WaterAid's mWater web and mobile-based Applications.The Consultant analysed both secondary and primary data, and prepared this report.

Methods

This chapter elaborates the broad approach to the Assessment; data types that formed basis of study; sampling procedure; and data collection and analysis techniques. A series of meetings with WaterAid Uganda to reach consensus on minimum requirements for sustainable Water, Sanitation and Hygiene in Schools, this formed the basis for blockage analysis. With consensus attained, an inception report was drafted and bottleneck analysis tools for city-level and school-level data collectiongenerated. The Inception Report was presented and discussed at a meeting organised by WaterAid Uganda(WAU) and attended by relevant KCCA staff. The purpose of the meeting

was to enrich the study by collecting KCCA's views on the same. Pre-selection of schools for primary data collection and adoption of Water Aid's mWater Apps was also agreed-to during the Inception meeting.

Sampling

A purposive sampling technique was adopted to identify 12 public schools for visitations and collecting observational data on WASH facilities. Schools were selected from each of the five divisions that make Kampala. The sampling took into consideration equal opportunities for learners, underserved schools (high pupil-to-stance ratio)(WAU, 2017) and pro-activeness of school management. The pre-selected schools are presented in the table below.

Table 2-1 Sample Schools

#	School	Division	Selection Criteria
	Uganda School for the Deaf, Ntinda	Nakawa	Equal opportunities
	Mulago School for the Deaf	Kawempe	Equal opportunities
	Buganda Road Primary School	Central	Highest pupil: stance ratio (132:1)
	Railway Children Primary School	Makindye	High pupil: stance ratio (93:1)
	Nateete Muslim Primary School	Rubaga	High pupil: stance ratio (79:1)
	Nateete Muslim High School	Rubaga	Requested DESS for intervention
	Kibuye Primary School	Makindye	High pupil: stance ratio (68:1)
	St Ponsiano Kyamula P/S	Makindye	High pupil: stance ratio (71:1)
	Mirembe Primary School	Makindye	High pupil: stance ratio (56:1)
	Katwe Martyrs Primary School	Makindye	High pupil: stance ratio (68:1)
	Kansanga Primary School	Makindye	High pupil: stance ratio (75:1)
	Kampala High School	Central	Requested DESS for intervention

Data Collection

This study used qualitative and quantitative data to assess the sustainability of WASH in Schools in Kampala. During the month or so of assessment, access to school WASH services was investigated at KCCA and school levels. Prior to field assessment, an extensive review was conducted on national policies and practices regarding inclusive education, chiefly as they apply to WASH in Schools. It was established blockages to sustainable school WASH in Kampala are akin to challenges at a national level, albeit in a more charged political environment. Semi-structured interviews were held with representatives of WAU and with relevant KCCA staff. All participants in the interviews are directly involved with establishing or implementing inclusive school WASH policies. Interviews were also conducted with head teachers of the 12 pre-selected schools. An informal focus group discussion (FGD) was held with KCCA staff from the Public Health and Education directorates on May 31, 2018. Tools developed for the purpose of collecting qualitative data at city and school levels were put to use. Visitations to collect evidences on the status of WASH facilities and hygiene practices in sample schools were conducted using the mWater Surveyor Mobile App. The consultant conducted brief training on the tools for enumerators and supervised data collection. Training of enumerators and data collection took place between May 16 and May 23, 2018.

Blockage Analysis

The data collected at school and KCCA levels was analysed using blockage analysis tools. Blockage analysis is a visual representation of the challenges and barriers prohibiting sustainable access to WASH in Schools. The blockages identified thereby inform focus areas for remedial interventions. It should be noted that whereas blockages show where the difficulty in service provision lies, they do not pinpoint the factor(s) responsible for the service failures.

This Study adopted three broad categories to ascribe indicators for effective WASH in Schools. The categories are: i) enabling environment; ii) developing infrastructure; and iii) sustaining services. Each of the three categories has three sub-components. Enabling environment constitutes policy, planning and budget. Developing infrastructure constitutes access, equity and capacity; whereas sustaining services entails O&M inputs, ownership and use as sub-components to further analyse the blockages. The WASH in Schools service delivery pathway considered for the study is presented as follows.

Fig 2-1 Service Delivery Pathway for WASH in Schools

Each of the indicators for effective school WASH was assigned stoplights as follows: red (in place and functioning well), yellow (in place but not fully functioning) and green (non-functional or not in place). The table that follows further illustrates the stoplights along with their justifications.

Table 2-2 Stoplight Description

Colour	Code	Description
	No blockages	No need for further interventions. Existing interventions are sufficient to achieve effective school WASH.
	Some blockages	There are some bottlenecks to school WASH, and stakeholders need to address or remove these bottlenecks at effective school WASH.
	Major blockages	These are major blockages to effective school WASH, and KCCA should take the lead to remove those blockages.

In order to define cause-effect relationships, the study adopted problem trees to highlight the underlying problems and root causes of blockages to sustainable school WASH services

Blockages to WASH in Schools

The section is a presentation of challenges and barriers to sustainability of school WASH services. Blockage analysis investigated the enabling environment, development (or supply) of infrastructure, and sustainability of school WASH services. Key areas in need of improvements were identified through discussions with KCCA and school-level WinS experts.

City-Level: Policy and Practice

The bottleneck analysis identified access to basic water, hygiene education, equity and maintenance of WASH facilities as strengths in school WASH programs, as tables 3-1 to 3-3 show.

Table 3-1 Stoplights: Enabling Environment

Cat.	Performance Measure	Stoplight Evaluation of Existing Situation
Enabling Environment		
Policy	Is WinS included in KCCA's development plans or strategies? (Availability of WinS strategy)	WinS strategy not in place, but covered in WASH strategy (ends 2019)
	Are there clear roles and responsibilities for WinS at city-level? (Directorate-specific WinS roles and responsibilities)	DESS gets technical support from DPHE depending on intervention (solid waste, WASH, environment mgt). WASH Unit is under-staffed - only 4 officers at the Centre. There is no Focal Point for WinS.
	Are there agreed minimum KCCA standards for WinS?	Minimum standards for sanitation technologies in draft, awaiting KCCA Council approval
Planning	Are there clear KCCA WinS targets? (Availability of WinS operational plan)	Investment targets (pupil:stance ratio) exist, but achievement constrained due to inadequate resources
	Is there a dedicated WinS monitoring and evaluation system?	Education Officers (DoESS) conduct inspections, but WASH is not targeted in appraisal tool
	Is hygiene education/promotion part of the school curriculum?	Hygiene education is part of the national school curriculum
Budget	Is there a budget line for WinS? If yes, is the WinS public budget increasing?	No specific budget line, but 5% of government grant allocated to WASH
	Is there a budget line to support WinS improvements?	No specific budget; KCCA maintenance budget targets public sanitation facilities
	Is public funding spent at schools most in need of WASH interventions? (Equity considerations)	KCCA interventions (investments, pit-emptying, and hygiene promotions) biased towards public schools.

Discussions with relevant stakeholders revealed there is neither a city-level strategy nor development plan for WASH in Schools. Roles and responsibilities at KCCA-level are shared between the education and social services directorate (administration, management and regulation), and public health and environment directorate (technical backstopping). Nonetheless, absence of a school WASH Focal Point limits effectiveness of WinS interventions. Operationalisation of sanitation technology standards would also guide implementation of WinS.There is no specific WASH in School plan, although KCCA's investment targets include bringing the pupil-to-stance ratio close to national standard (40:1). Absence of WASH-specific indicators in the checklists for school monitoring activities contributes to low quality of school WASH services.Funding for WASH in Schools is bundled into the overall

education budget, rather than allocated specifically. Funds are thus not allocated for WASH maintenance; purchase of cleaning materials.

Table 3-2 Stoplights: Infrastructure Supply

Cat.	Performance Measure	Stoplight Evaluation of Existing Situation
WASH Infrastructure Development		
Access	Do schools have access to improved water sources?	All schools have water on their premises
	Do schools have access to improved sanitation?	An estimated 92% of schools have latrines that are usable, but pupil-to-stance ratio does not meet national standards
	Do schools have access to hand washing facilities?	Coverage of hand-washing facilities is universal, but soap and water are not always available
Equity	Is gender equity and MHM addressed for WinS?	Schools have sex-separated facilities that offer privacy to girls, but water and soap for MHM, and disposal of menstrual materials are wanting
	Is accessibility for younger children and/or PWDs addressed for WinS?	At least 83% of schools have facilities that address needs of younger children and/or PWDs
	Is socio-economic disparity addressed for WinS interventions?	Interventions (investments, pit-emptying, hygiene promotions) biased towards public schools; non-state actors like Cheshire Services, WAU target less privileged
Capacity	Are there capacities within schools, KCCA for effective WASH in Schools?	WASH Unit to provide technical support for WinS is in place, but it is over-stretched
	Is hygiene education a priority for KCCA? (Availability of WinS training manual for teachers)	KCCA promotes peer-to-peer learning, but a WinS training manual is not in place
	Are learners engaged in WinS? If yes, how?	Learners in 58% of the schools are involved in WinS such as toilet cleaning

Provision of handwashing facilities is near-universal, but intermittent supply of soap and/or water hampers hygienic practices. Schools often attribute absence of soap to vandalism by nearby communities. Vandalism of school WASH facilities is partly caused by absence of perimeter walls and/or chain-link fencing at most public schools.

With City Hall stretched, there is no clear mechanism on how schools can access essential O&M inputs for WASH. Besides pit-emptying services, maintenance of school WASH facilities is left to schools – with varying results. Schools with strong management committee easily mobilise resources (from parents) for O&M, but the same cannot be said of schools with weak leadership.

Table 3-3 Stoplights: Service Sustainability

Cat.	Performance Measure	Stoplight Evaluation of Existing Situation
Sustainability of School WASH		
O&M Inputs	Are essential inputs for O&M readily available? Roles of KCCA division offices, SMCs, PTA?	Portion of GoU grant can be used for WASH inputs, and schools can collect contributions from parents: conditions vary
	Is there a local organisation that supports O&M for WinS services?	KCCA technicians/plumbers/masons undertake WinS O&M issues on demand basis
	Is there adequate and reliable funding for WinS O&M costs?	National policy allows schools to solicit contributions from parents, but low-prioritisation of WASH limits resource envelope
Ownership and Maintenance	Are school WASH facilities regularly maintained? Who is responsible for WASH maintenance in schools? Who is responsible for solid and liquid waste (faecal sludge) management in schools?	Timetables for routine maintenance available in all schools, while KCCA offers free pit-emptying services for public schools
	Do schools provide soap, toilet paper and other cleaning materials? Who is responsible for provision of cleaning materials?	Schools are responsible for provision of cleaning materials, but conditions vary
	Do schools treat unsafe water? Are there specific guideline for treating unsafe water in schools? Who is responsible for treating unsafe water in schools?	Schools are responsible for safety of water provided to learners, but in absence of guidelines quality cannot be guaranteed
Use	Are safe water practices being followed by students?	Safe water practices vary across schools
	Are there regular WASH in School promotions to encourage learners to use improved toilets at school?	At least 67% of the schools reported adequacy of hygiene promotion activities
	Do learners wash their hands with soap/substitutes at critical times at school?	Availability of soap at handwashing facilities varies across schools and time

School-Level Bottlenecks

The bottleneck analysis identified access to water sources on premises, gender-appropriate sanitation facilities, functionality of handwashing facilities, equity and routine maintenance of WASH facilities as strengths in school-level WASH services, as shown in Tables 3-4 to 3-7.

Table 3-4 Stoplights: Access to Basic Water (WHO & UNICEF, 2017)

#	Performance Measure	% Compliance
1	School has a water source within the compound	100%
2	Water source available in the compound is functional	100%
3	Drinking water is available throughout the school year	67%
4	Water source is accessible to all learners including the youngest children and PWDs	92%
5	Water source is compliant with national standards for drinking water (tested in last 12 months)	17%

Owing to costs associated with piped water supply, surveyed schools employ a mix of sources for drinking water, cooking, flushing, cleaning and other needs. Nonetheless, **compliance of drinking water to national standards is suspect:** only one school (Kampala High) reported to have quality tests. The other schools could not provide evidence for quality of water provided to learners.

Table 3-5 Stoplights: Access to Basic Sanitation (WHO &UNICEF, 2017)

#	Performance Measure	% Compliance
1	School has improved toilets/latrines that are usable	92%
2	Number of usable toilets/latrines meet national standards (pupil to stance ratio 40:1)	25%
3	Culturally appropriate anal cleaning materials are available	75%
4	School has separate toilet blocks for boys and girls	100%
5	Toilets are accessible to all learners including the youngest children and PWDs	67%
6	Latrines or septic tanks are emptied (or safely covered) when they fill up	92%

Sanitation facilities in the surveyed schools meet functionality and single-sex criteria for mixed schools, but fail abysmally with regard to national standards for student to stance ratio. Only the two primary schools for children with special needs (Ntinda and Mulago Schools for the Deaf), and Kampala High School have adequate toilet stances for their learners. Buganda Road and Railway Children Primary Schools have more than double the minimum standard (40:1) (Unknown, 2018). New sanitation infrastructure to reduce the pupil: stance ratio to a reasonable level is necessary.

Table 3-6 Stoplights: Hygiene Practices

#	Performance Measure	% Compliance
1	School has hygienic, safe and private facilities for girls to manage menstrual hygiene	100%
2	Water and soap are available in girls' toilets for menstrual hygiene management	67%
3	There are covered bins for disposal of menstrual hygiene materials in girls' toilets	92%
4	School has disposal mechanisms for menstrual hygiene waste	83%
5	School has functional handwashing facilities	100%
6	Soap and water are available at the handwashing facilities	58%
7	Handwashing facilities with soap are available inside or near the toilets	67%
8	Handwashing facilities with soap are available near food preparation areas	83%
9	Handwashing facilities are accessible to younger children and PWDs	83%
10	Group handwashing activities are conducted for all learners at least once a week	50%
11	Solid waste (or garbage) is collected from the school or buried/burned on the premises	Collection – 67% Burning – 33%

As intimated in the preceding section, all schools score with respect to gender and equity considerations. Availability of private facilities for girls and bins to manage menstrual hygiene is commendable. Notwithstanding,

supply of soap and water for learners is not consistent due to reasons cited in Section 3.1. Girls and boys are thus unable to fully-adapt hygienic practices due to intermittent supply of critical inputs (soap and water). Such barriers to effective hygiene bring into question the level of ownership and/or awareness of benefits of handwashing and menstrual hygiene. It does not help only 1 in 3 schools reported that hygiene volunteers (student clubs, teachers, WASH committee, etc.) receive training on hygiene practices. Inadequate training is exacerbated by lack of a WinS training manual for teachers and volunteers at City-level.

Table 3-7 Stoplights: Systemic Bottlenecks

#	Performance Measure	% Compliance
1	School has a committee responsible for WASH	83%
2	WASH committee is active and meets regularly	83%
3	WASH committee is actively engaged in hygiene work	83%
4	Hygiene volunteers (club, teachers, WASH committee, etc.) receive training	33%
5	School can access technical support for WASH maintenance (repair of facilities, pit-emptying, etc.)	92%
6	School has a specific budget for WASH service maintenance (O&M, cleaning materials, pit-emptying, etc.)	33%
7	Funds are sufficient to cover costs of WASH maintenance	0%
8	School has a specific plan for toilet cleaning, including clear roles and responsibilities	Timetable for cleaning (100%)
9	School has access to external funds for WASH	33%
10	What is the source of external funds (government, parents, civil society, etc.)?	Government (75%) INGO (25%)
11	School has adequate IEC materials (behavioural change products) for hygiene promotion	67%
12	Hygiene is taught at the school or hygiene is part of the curriculum	83%
13	School has WASH standards, regulations, guidelines, etc.	58%
14	Learners are involved in WASH maintenance activities e.g. toilet cleaning	58%

As with findings at the City level, a specific budget for WASH is lacking in most surveyed schools, and there was universal agreement with respect to adequacy of funds to cover costs of WASH maintenance. The block grants received from the public budget are largely to cover costs of scholastic materials, and WASH maintenance is more often than not at the bottom of the pecking order. Inadequate maintenance is a barrier to sustainability as it reduces the life of service WASH infrastructure. The impact of adequate WASH services on learning environments seems not to be fully appreciated: WASH in Schools-specific planning and budgeting would be a good place to start.

Conclusions

This study explored challenges and barriers to sustainability of school WASH services. Although findings were derived from pre-selected publicly-owned schools, the observations are relevant to institutions with the same ownership and management model. Conclusions that can be drawn from the assessment are presented as follows.

Lack of strategy and direction with respect to WASH in Schools. The first step towards improving provision and access to WASH in schools is through systematic understanding of what the needs are, which would in turn inform plans of action. Beyond construction of WASH facilities, which is done in an ad hoc manner, there is no direction with regard to desired change.

There is no system for monitoring WASH in Schools at all levels. In the absence of WASH-specific indicators for school monitoring activities, WASH facilities and hygiene practices in schools are excluded from the education sector's performance management systems. Inadequate and inconsistent WASH monitoring, data collection and management, and limited use of data to inform policy, are blockages to service sustainability of WASH in Schools.

Absence of specific budgeting for WASH in Schools. Amidst public budget limitations, WASH is nested within grants for school improvement activities. Lack of priority at planning and budgeting levels affects WASH implementation. With insufficient grants at their disposal, city and school administrations do not allocate specific budgets for WASH improvements. The high pupil: stance ratio in surveyed is evidence of WASH improvements playing catch-up with increased enrolment.

Hygiene facilities do not have water and soap at all times. School WASH infrastructure intended to address handwashing and menstrual hygiene is ineffective owing to intermittent supply of soap and/or water. Vandalism of WASH facilities by nearby communities was cited as a barrier to sustainable hygiene practices. Nonetheless, girls that have reached menarche are disproportionately affected by inadequate WASH as menstruation comes with the need to use the facilities more frequently. In the absence of provisions to wash and/or dispose menstrual materials, girls avoid school all-together – with attendant negative educational outcomes.

Adequate funding should be provided for maintenance. Investments in operation and maintenance of school WASH facilities improve usability and service sustainability. Whereas schools are in-charge of WASH maintenance, the state and day-to-day operations of facilities varies depending on management's ability to mobilise contributions from parents and other sources.

Lack of standards, guidelines and manuals for WASH in Schools. While minimum construction standards exist, little else is standardised when implementing WASH in Schools. Absence of training manuals for WASH volunteers (student clubs, teachers, committees) limits awareness.

Acknowledgement

This research was supported by the Directorate of Public Health and Environment (DPHE) at KCCA. Special thanks go to the Deputy Director DPHE, Dr. Najib Lukooya Bateganya for his technical support and the entire KCCA staff from the water and sanitation unit of the DPHE including Emily, Eva, Richard, Josephine and Sharone.Acknowledgement also goes to the WaterAid staff Chanchal Kumar and Asuman Waiswa for the technical input and logistical support respectively.

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