



Scaling School Water, Sanitation, and Hygiene in Rural Kenya:

An Assessment of the Kenya Education Sector Support Program

SWASH+: Sustaining and Scaling School Water, Sanitation, and Hygiene Plus Community Impact

Summary

Background: As part of formative research into the pilot test for a KESSP enhanced model, which prioritizes school Water, Sanitation and Hygiene (WASH), and in order to gain greater understanding on potential challenges to direct funding, Emory/GLUK researchers conducted an assessment of five schools in Bondo District that had previously received KESSP funding for school WASH. The assessment reviewed the present KESSP model, including training, prioritization of WASH, budget and funding, quality, monitoring, roles and responsibilities, sustainability, and design. Data were collected in June and July, 2009 through direct observations and structured interviews with head teachers and other school infrastructure committee members from the community.

Findings: The training was considered positive by participants though it lacked an operation and maintenance component. There were no clear systems in place for monitoring progress and usage of the WASH facilities. The KESSP plans lacked budgets or plans for maintenance and repair, reflecting a likely weakness in long-term sustainability. The quality of latrines varied depending on the expertise of the artisans. Many artisans could not read plans well enough to carry out the design as proposed. Roles and responsibilities need clarification (from those in the school committees to students cleaning the latrines.). No schools receiving funds for WASH through KESSP implemented the recommended latrine/washroom design, citing high cost and lack of expertise or examples in how to construct it.

Recommendations: Training needs to be inclusive of all aspects including operations and maintenance and monitoring. Budgeting for repairs and maintenance needs to be considered from the start or else funds will not be available when needed and sustainability will be threatened. The KESSP design needs to be simplified so that artisans can properly interpret it. A model latrine could be built to show artisans what may be expected. If roles are not clarified, responsibility will be easily avoided. Clarification of roles needs to happen early and these roles and responsibilities need to be checked to ensure that people are doing what they are expected to do. The KESSP design is too costly and often too complicated to construct. Designs need to be more simple and affordable.

About SWASH+

SWASH+ is a five-year applied research program to identify, develop and test innovative approaches to school-based water, sanitation and hygiene interventions in Nyanza Province, Kenya. Implementing partners are CARE, Emory University, Water.org.

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EMORY UNIVERSITY CENTER FOR GLOBAL SAFE WATER, CARE, WATER.ORG



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List of Acronyms

BSIIG – Basic School Infrastructure Improvement Grant

BOQ – Bill of Quantities

DEO – District Education Office

DICT – District Infrastructure Coordinating Team

FPE – Free Primary Education Funds

KESSP – Kenya Education Sector Support Program

MOE -- Ministry of Education

MOPHS – Ministry of Public Health and Sanitation

MOPW – Ministry of Public Works

NGO – Non Governmental Organization

ROM – Repair, operations, and maintenance

SHC – School Health Club

SIC – School Infrastructure Committee

SIDP – School Infrastructure Development Plan

SIIG – School Infrastructure Improvement Grant

SIIP – School Infrastructure Improvement Program

SIMU – School Infrastructure Management Unit

SMC – School Management Committee

SWASH+ - Sustaining and Scaling School Water, Sanitation, and Hygiene, Plus Community Impact

VIP – Ventilated Improved Pit (latrine)

WASH – Water, sanitation, and hygiene

ZTC -- Zonal Technical Committee

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Introduction

SWASH+ conducts learning and applied research designed to generate strategic information on school water, sanitation, and hygiene (WASH) that can influence policy and practice and result in greater impacts and sustainability. The project is undertaking a new strategic direction that would focus on collaborative learning with the Ministry of Education and other relevant line ministries to develop a scalable model for school WASH in Kenya. In keeping with trends towards devolved funding, this collaboration examines the Kenyan Education Sector Support Program (KESSP) through the School Infrastructure Improvement Program (SIIP) and will pilot test a set of enhancements to the current KESSP approach.

Within KESSP, SIIP is a program that aims at assisting Kenya's poorest schools and communities to improve their primary school infrastructure. In this program, primary schools, selected based on need and priority, receive an annual infrastructure improvement grant each year for five years. This grant is known as Basic School Infrastructure Improvement Grant (BSIIG). In addition to BSIIG, some schools with have severe shortage of infrastructural provision receive a one-off grant in order to carry out more extensive infrastructural development or rehabilitation works. SIIP is coordinated centrally by the School Infrastructure Management Unit (SIMU). At the district level the program is managed by the District Infrastructure Coordination Team (DICT), which is made up of district-level heads of various line ministries, including the Ministry of Education (MOE), Ministry of Public Health and Sanitation (MOPHS), and Ministry of Public Works (MOPW). At the school level, SIIP is managed by the School Infrastructure Committee (SIC).

As part of formative research into the pilot test for a KESSP enhanced model, and in order to gain greater understanding on potential challenges to direct funding, we conducted an assessment of five schools that previously received KESSP funding for school WASH in Bondo District. We also conducted an assessment of KESSP-designed latrines and washrooms in three Nyando District schools that were constructed by Water.org (formerly Water Partners International). This report summarizes the key findings from this assessment in order to answer the following general questions about the present KESSP model:

1. **Training:** Was the level of training for SICs sufficient to develop the School Infrastructure Development Plan (SIDP) and to carry out the project?
2. **Prioritization of WASH:** How do schools prioritize school WASH in their infrastructure plans, and to what extent are important non-hardware aspects such as hand washing, water treatment, and education included?
3. **Budget and funding:** Was the budgeting process adequate and **did** the level of funding given by KESSP adequately cover both capital and recurrent costs?
4. **Quality:** What is the quality of the infrastructure and services provided to the schools and is the local private sector able to sufficiently provide it?
5. **Monitoring:** Was monitoring carried out as expected, and were important issues addressed through this process?
6. **Roles and responsibilities:** How well do the school staff, SIC, local community, and government monitoring bodies carry out their roles in implementing a KESSP-funded school WASH project?
7. **Sustainability:** Are there any threats to the likely sustainability of KESSP projects?
8. **Design:** Is the latrine block design recommended by KESSP affordable, technically feasible, and acceptable to pupils?

Methods

Data were collected in June and July, 2009 through direct observations and structured interviews with head teachers and other SIC members from the community at schools that had previously received KESSP funding for water, sanitation, or hygiene projects and in July, 2009 in schools in which Water.org implemented the KESSP latrine and washroom design. Interviews about attitudes, perceptions, and use of washrooms in particular were also conducted with a convenience sample of girls from Water.org's KESSP latrine design schools. Former KESSP-funded schools visited were Got Matar, DierAora, Minyonge, Kametho, Nyamira, Ndiwo, and Wambasa, all in Bondo District. Water.org's KESSP latrine design schools were Kamunda, Ger Liech, and Bunde in Nyando District.

Findings

Findings have been grouped into two broad categories: planning and implementing KESSP-funded projects, and KESSP latrine/washroom assessment.

Planning and Implementing KESSP-funded Projects

Generally, KESSP-funded projects in the schools included construction of additional classrooms, school fencing, rain school water harvesting system, and KESSP design latrines and washrooms, depending on the school's SIDP priority. In this assessment, only schools whose KESSP implementation included some WASH component were targeted. This section presents results of the assessment of these schools.

Preparation and training for KESSP Implementation: In all the former KESSP-funded schools, head teachers and SIC members reported satisfaction with training for SIDP development. They noted that the training helped them in prioritizing school infrastructural needs. They also reported that training on financial management for KESSP was generally adequate. Also, they reported that the local community was well involved in the planning process and that their views were adequately reflected in the project's prioritization and in the actual implementation.

In two schools, community contribution was achieved by involving them to contribute stones, water, supervision, and labor. Furthermore, in some schools, it was observed that despite money being disbursed early, rules were robust enough to ensure that planning processes were properly followed. All schools also reported receiving good guidance from DICT's coordinator (a staff from DEO). However, all the schools reported inadequate support during preparations from other key line ministries represented in the DICT (namely MOPHS, MOPW, and the District Accountant). These ministries were not even represented in DICT trainings. Because of lack of MOPH and MOPW involvement in the trainings for KESSP implementation, many respondents indicated that they were ill-prepared to effectively supervise construction of KESSP latrine design. Also, respondents reported that there were unclear instructions on how to account for 5-10% administrative/ miscellaneous funds.

All the schools reported inadequate support during preparations from other key line ministries represented in the DICT (namely MOPHS, MOPW, and the District Accountant).

Moreover, in all the schools, the respondents reported that they received no clear training or specific instructions relating to Repair, Operation and Maintenance (ROM).

Prioritization of WASH: Schools requesting funds through KESSP are to set their own prioritization and timeline of infrastructure needs. Although some of the former KESSP-funded schools had prioritized construction of latrines, or water facilities, none of the WASH priorities included non-hardware aspects such as hand washing, water treatment, and education. During training for KESSP implementation, there was no emphasis on water treatment, hand washing, or other software aspects of WASH. In three schools, it was reported that the community prioritized construction of classrooms and school compound fencing to WASH infrastructure. In the order of which components of KESSP they would construct first, most schools indicated in their SIDP that classroom construction (or compound fencing in one school) was a higher priority than increasing number of latrines.

Only one school had a hand washing station; no schools had soap for hand washing; only one of the schools provided water for drinking on the day of visit; none of the schools had treated drinking water.

Data from direct observation of the school facilities showed that only one school had a hand washing station; no schools had soap for hand washing. Two schools reported providing drinking water for students; however, only one of the schools provided water for drinking on the day of visit; none of the schools had treated drinking water, and there were no provisions for water treatment. Generally, many of the respondents perceived that rainwater was safe for drinking and treating it was not a necessity. Schools with rainwater tanks did not consider water treatment during rainy seasons.

Budgeting and Funding: All schools reported that they had internalized the KESSP budgeting process. Overall, the respondents felt that the budgets were adequate and well planned for in terms of good quality infrastructure by local standards. However, respondents reported that inflation and fluctuation of prices was a major challenge. Due to long timeframes, there was wide variation in cost of building materials. The schools did not factor in sufficient time to account for seasonal variations in labor and materials availability.

None of the schools had a clear budgetary allocation for recurrent repair, operations and maintenance (ROM) of WASH (including [re]purchasing water treatment, soap for hand washing, latrine cleaning products, repairing broken taps, repairing gutters, emptying filled latrines, etc). Moreover, there were no definite plans for sourcing for these funds, although some schools suggested using repairs and maintenance allocation in the Free Primary Education (FPE) funds¹. All the interviewed head teachers reported that FPE funds were generally inadequate, and could not sufficiently cover additional expenses. In all the schools, respondents reported that KESSP trainings and manuals were silent on budgeting for water treatment products and hygiene promotion activities.

None of the schools had a clear budgetary allocation for recurrent repair, operations and maintenance of WASH.

¹ The Kenyan Government issues approximately KSH350,000 of Free Primary Education funds to schools annually to be used to finance teaching and learning materials, school activities, basic school repairs and maintenance, and other management-related expenses.

Construction and Installation: At the time of the assessment, some schools had not completed construction of selected school infrastructure. All former KESSP schools invited for tenders and conducted interviews with *fundis* (contractors) before contracting them. Suppliers were also identified through a tendering process. Overall, schools were satisfied with *fundis*' workmanship. In most instances, the community members were employed as casual unskilled laborers during the implementation process. This was perceived as key to ensuring some local involvement in the process.

The KESSP latrine design was generally expensive to implement at the current level of funding.

Some *fundis* had under-quoted their quantities during the tendering process as a trick to win the tender award.

Two schools, which contracted two *fundis* to construct the different latrine banks, reported dissatisfaction with lack of uniformity in workmanship, partly because each *fundi* interpreted the KESSP design differently, and partly due to variance in workmanship skills. In most schools, *fundis* were unable to accurately implement the KESSP design. Respondents noted that the KESSP latrine design was generally expensive to implement at the current level of funding. Head teachers from three of the schools visited suggested that a model of the design be built in the district to provide a visual guide to the local *fundis* on the accurate implementation.

Two of the schools reported challenges with contracted *fundis*' ability to pay local unskilled workers daily. In these instances, the *fundis* asked for advances, which is not permitted in KESSP procedures, in which payment is made by check only at specific phases. Two schools reported that their *fundis* had under-quoted their quantities during the tendering process as a trick to win the tender award. This affected the implementation process. In addition, one head teacher suggested that there is need to separate WASH programs from other school improvement programs; that WASH should be a project on its own in order to allow for greater concentration on it and not other more prioritized activities like classrooms.

None of the schools had any clear mechanisms to measure (or monitoring forms to document) changes in inputs, processes, outcomes, or impact of the SIIP

Monitoring of Implementation: Only the MOE (through District Education Office [DEO]) visited the schools regularly during the construction process to monitor progress; little input and no monitoring visits were reported from the MOPHS and MOPW. The SIIP recommends involvement of all DICT members, to supervise and monitor performance of all consultant design and supervisory support by undertaking monthly or bi-monthly site visits. The DICT secretary (a representative of the MOE) made most monitoring visits alone. Lack of involvement of the MOPHS was evidenced by the schools' inability to attend to public health-related details of the Ventilated Improved Pit (VIP) latrines (such as the venting pipe fitted with gauze). In most schools, head teachers and SIC did not understand the value of the VIP latrine and chose to ignore such details in the construction. In most of the designs, there was no allowance for an exhaustion man-hole as per the KESSP latrine design specifications, indicating lack of monitoring and feedback from the MOPW. However community interest and informal monitoring of the projects was reported in most schools visited. In three of the schools, it was reported that the general community also frequently visited to monitor progress of the constructions. In one school, this included involvement of the local provincial administration's office and local councilor. It was also observed that none of the schools had any clear mechanisms to measure (or monitoring forms to document) changes in inputs, processes, outcomes, or impact of the SIIP. However, the schools kept a visitors' log book to record the details of the officers who visited the school for monitoring, and any suggestions they made to the process and design.

Roles and Responsibilities: Clarity of roles and responsibilities in project design and implementation has been identified as key to enhancing accountability and effective implementation and sustainability. In this assessment, it was clear that the local community (represented by the School Management Committee [SMC²] and SIC) had a clear role in planning and prioritization of the KESSP SIDP. The community was also keen in checking on progress of constructions through informal inquiries, thus ensuring timely delivery. It was also observed that there was a good working relationship between the school head teachers (secretary to SMC) and their deputy head teachers (secretaries to the SIC). Their roles were clearly demarcated and role relationships defined. School heads and their deputies were doing well in managing the funds and keeping separate records (for SMC and SIC).

Most of the school heads reported role overload – demands relating to regular teaching, school administration, management of FPE funds, and management of KESSP funds. They observed that managing KESSP and other emerging school programs was an additional source of role overload. One main suggestion to deal with role overload was to implement KESSP and other major school construction projects during school holidays, and not within the school term. Another suggestion was that schools be allowed (and funds availed) to contract accounts clerks to support the school administration in financial reporting and management.

Previous studies³ by SWASH+ suggest that clear definition of roles and responsibilities for various components of WASH at the school level, including water (provision, treatment, maintenance), hygiene education (teaching and monitoring children), and sanitation (latrine repairs, maintenance), is a key determinant to sustainability of school WASH. In this assessment, most of the schools did not have any clear role definitions on who coordinates cleaning, identifying repair needs, or repairing the latrines. However, in all the schools, the teacher on duty was directly in charge of ensuring the latrines were clean; both boys and girls (in upper classes –grades 4-8) had the responsibility of cleaning their latrines, with duty rosters pinned in some of the classes. Although most schools visited reported having established school health clubs (SHC), most of these clubs were dormant, and had not been actively involved in any WASH education or advocacy within or outside of the schools. In one school (in which CARE implemented the Safe Water System) the SHC was reportedly responsible for coordinating daily water collection and treatment, although observations during study visits found that none of the schools had treated water for drinking on the day of visit. In some schools, teachers in charge of the SHC or environment and sanitation were responsible for WASH-related activities in the school. However, the roles of such teachers were not well indicated.

Although several actors were aware of their roles and responsibilities, there were role conflicts between the SIC and SMC, which would benefit from clarification or restructuring in the future.

² The SMC is mandated by the MOE to supervise and coordinate management of school affairs, including FPE funds and other school improvement projects. Its members are annually elected by the community to represent different interests. The school head teacher is the secretary to SMC and responsible for implementing SMC decisions. SIC is a separate committee, with membership drawn from the community, school staff, and MOE representatives. Within SMC, there is a sub committee called School Infrastructure Management Sub Committee (SIMSC). It is charged with the responsibility of supervising and coordinating SIIP at the school level; its mandate is limited to SIIP. Technically, SIC reports to SMC. The SIIP management handbook (KESSP, 2001) is explicit that SIC is a separate committee from SMC and should keep separate records. However, dual membership in the committees is not clearly addressed. Moreover, although SMC is annually elected, the manual is silent on the tenure of the SIC.

³ See SWASH+ reports on sustainability of school WASH and enabling environment.

Some schools mentioned that role conflicts between SIC and SMC complicated the initial phases of the project, although this was resolved through DICT coordinator's intervention, which included role clarifications and relationships. This role conflict resulted from inadequate definition of role boundaries between SMC as the final authority in managing all school affairs, and SIC as a committee established principally to coordinate the KESSP SIIP. Some suggestions were made for (a) making SIC an autonomous committee to manage the school's SIIP, and (b) making SIC a sub-committee within SMC so that conflicting authority issues are clearer. As it were, the chairman of SIC needed not be a member of SMC, which raised concerns of overall backstopping on management of the KESSP-funded project. Moreover, it was observed that there was no clarity on the tenure of SIC, yet SMC was elected by the community annually. Subsequently, some schools experienced discontinuity in the SMC chairmanship, which affected continuity of SIC. Respondents suggested harmonizing the tenure of SIC with that of SMC.

Sustainability and community factors: Sustainability of the design was generally hard to judge because most facilities were new; some were still under construction, and some had not yet been used. It was observed that use of local *fundis* increases possible sustainability in case of repair needs. Although community involvement was reported in most schools, participation of the community was generally limited to community representatives serving on the SMC and SIC.

Interviews with head teachers and SIC members revealed three main themes relating to the general relationship between the community and the school projects: apathy, theft, and prohibited use of school WASH facilities.

Emerging pertinent questions on sustainability:

- ❖ Is WASH a priority for the community?
- ❖ Is the community willing to pay for improvements and repairs?
- ❖ Is the community aware of WASH conditions in schools and their impacts on students?

- ❖ **Apathy:** There was a general lack of community involvement, support, and ownership of the KESSP-funded projects. In one school, parents refused to help in construction of new latrines. In one of Water.org's KESSP latrine design schools, some parents reported expectations that the NGOs that initiated the projects should provide soap and other maintenance materials with the general sentiment: it's your project, you provide it (not a direct quote). In four schools, head teachers reported a challenge relating to the community perception that KESSP funds are sufficient for "all" school needs and thus they did not see the need of contributing to project implementation.
- ❖ **Theft:** In three KESSP-funded schools, there were reports of theft and vandalism of WASH facilities by some community members. These included stealing taps, hand washing containers, latrine doors, and cement for construction.
- ❖ **Prohibited Use:** In two schools, there were reports that some community members routinely break into latrines on weekends and evenings to use them. In such cases, students must clean the community's mess in the mornings. The schools staff expressed fear that efforts to inhibit illicit use are futile as latrine locks, fences, and other forms of deterrence may be broken. One head teacher suggested the need to allow communal use of latrine for a nominal fee which could be used to monitor, clean and maintain latrine; however, the means of implementing fee collection is not clear.

These challenges in community participation are not unique to the KESSP process and have been a common experience in other work SWASH+ has done in schools. These issues raise some pertinent questions on sustainability: Is WASH a priority for the community? Is the community willing to pay for improvements and repairs? Is the community aware of WASH conditions in schools and their impacts on students? These concerns highlight the need for greater community involvement in project identification, implementation and evaluation, and frequent feedback on actual expenditures.

An additional threat to sustainability was the lack of provisions for repair and maintenance of the WASH infrastructure. In some schools, no allowance was given for manholes for exhaustion of latrines. The head teachers said that they planned to construct other latrines once the current ones were filled indicating a desire not to sustain the structures but to merely replace them.

KESSP Latrine /Washroom Design Assessment

The recommended KESSP latrine/washroom design structure includes three VIP latrine stalls, one handicap-accessible latrine door and five hand washing stations including one for the children with special needs, one washroom for bathing, and multiple metal taps extending into a common concrete hand washing basin. Water is piped to the taps from a 200 litres elevated rainwater catchment tank fixed to the roof of the latrine block. We assessed the extent to which these plans were followed in schools that had previously received KESSP funds for latrine construction.

In addition, Water.org implemented this design in three Nyando District schools, with some modifications⁴ so that the feasibility and acceptability of the design could be assessed. Below are the results.



Figure 1. Exterior and taps of KESSP-design latrine/washroom facility at Kamunda Primary, constructed by Water.org.

Overall design implementation: Generally, schools that had previously received KESSP funds to construct latrines expressed that the design was expensive and could not be implemented accurately using the allocated funds per unit latrine. On the actual design that was implemented by these schools, it was evidenced that the KESSP design was not followed in constructing the sanitation facilities. For example, in some KESSP-funded schools there was no provision for adapted latrines for students with physical

⁴ Modification to the design included: (a) relocating the position of the bathroom as the original design would mean that bath water would drain into the pits hence affecting the degradation of waste in the pits. This resulted in two major changes; (b) increasing the number of latrine stances from 4 to 5; and (c) relocating the water tank to outside the facility.

disabilities⁵, and in cases where it was allowed, the door and latrine spacing was inadequate to allow for access by students on wheelchairs.

Most of the schools did not construct latrines that allowed for ventilation improvement (VIP latrines) recommended in the design. Only one of the former KESSP design schools constructed a hand washing facility within the KESSP design latrine/washroom building. Only two schools included a washroom in their design; others indicated that there was no need and had to modify the design to allow for an additional pit latrine. Furthermore, most of the schools did not include a provision for manholes for exhausting the latrines. In schools that had installed hand-washing stations, most of the sink taps were well beyond the reach of small children.

In schools in which the KESSP latrine design was constructed by Water.org, the total cost of constructing the facility was approximately Ksh 515,000, which is well above the Ksh 300,000 cost estimate given by KESSP⁶.



Figure 2. Latrines constructed with KESSP funds at DierAora Primary did not use the recommended KESSP design.

Photo by Leslie Greene.

Use of washrooms: Washrooms are purported to improve pupil hygiene and potentially to give adolescent girls a means to wash discreetly during menstruation. SWASH+ has previously found a high demand for washroom facilities among girls in some schools. In the former KESSP-funded schools that had a washroom provision, the headteachers reported [and corroborated by direct observation] that none of the washrooms was already in use, although the latrines were in use for more than two months. However, in the schools where Water.org implemented the design, there was some evidence that the washrooms were in use; some girls reported that they could not use the washroom sometimes because of long queues of girls waiting to use the facility. Upper primary school girls were reported to use the washrooms more than other categories of

“When attending [while menstruating] we use it because going back home to change takes a lot of time, so it really saves time...I can bathe anytime I feel like” (Girl, 14 years old).

⁵ Though this was provided in the pilot sites, their usage is below expectation as these schools have no children within the category of special needs. Normal children try to use but mess them a lot. From Water.org’s point of view, there should be a provision of a potable stool with a hole in the middle for these children to use while in the toilet. This way we can still have normal children use the latrines and the handicapped too without messing it.

⁶ The difference in costs could be attributed to difference in materials used/ possible ratio of materials used/ cost of contractors, difference in design implemented This also varies with the topography of the soil. Expenditure for hard and soft formations vary.

pupils. Apart from bathing, the girls interviewed indicated that they also used the washrooms for changing sanitary towels and changing stained uniforms. The girls who reported using the washrooms also indicated that it was convenient.

The washroom use at Kamunda Primary School was quite successful, in part due to the high level of support from the school administration. Teachers and pupils reported that lower primary girls would queue for bathing at the end of the school day and that boys were also given

“Some of the big girls also urinate in it when the queue for the [pit] latrine is long and they are very pressed. This makes the place to smell of urine” (Girl, 12 years old).

opportunity to bathe at designated times after school. At Ger Liech and Kamunda, pupils often fetched water from an on-site earthpan source for bathing, and the school provided soap. However, washrooms were not as successful in Bunde and the KESSP-funded schools. Most of the girls interviewed also reported that there was no actual provision of water, soap, basins and other washing products in the facilities. While some of the girls expressed no reason for not liking the washrooms, many of the girls said that sometimes they do not use the facilities because of bad smell. One of the interviewed girls said: “Pupils from nursery and baby class use it [washroom] for long call and this makes it to smell bad and attract flies” (Girl, 12 years old).

On perceptions of girls on the washroom design, some of the girls interviewed reported that the washrooms were dark when the door closed and that they feared washing in the dark. The washrooms also lack a drying rack for clothes and/or a dry ledge for sanitary napkins, although it is unclear whether such items would be used for this purpose. In one of the schools (Bunde), the washroom drains were clogged by turbid water.

Maintenance and repair: On minor repairs, the school staff reported that they lacked tools and knowledge to make minor repairs such as repairing a leaking pipe connected to a tank. Major repairs were a potential concern. Exhaustion of filled latrines was a concern as evacuation trucks have never been to these communities and many roads impassable for large vehicles. Cost to exhaust (~ 4,000 KSH) was a noted concern. Asked about what aspects of the washrooms needed to be improved, most of the girls interviewed from schools with KESSP design latrines implemented by Water.org suggested that there was need to improve drainage of the washrooms so that they do not get blocked, and to provide cleaning materials (brooms, soap, water).

“They should provide a tank inside so that water is present all the time and so that I am not seen fetching water from the outside. Lack of water to use for bathing and cleaning is a problem” (Girl, 13 years old).

Safety: In schools that installed hand-washing tanks within the latrine facilities, some students expressed that they were scared of filling water tanks. The tanks were observed to be on a platform approximately 1.5 meters above the ground, and the platform lacks a ladder or stairs to climb to assist in filling water (see Figure 3). Tanks that use rain collection system were observed to lack screens such that dead insects were seen in some of the tanks⁷.

Acceptability: Most of the girls interviewed in the three Water.org latrine schools expressed that the inclusion of a washroom in the KESSP latrine design was important, and that they liked the idea. In one of the former KESSP-funded schools, the SIC decided to modify the boys' latrines to include a washroom because the "boys would feel jealous and may frustrate the girls' use of the washroom facility" (SIC Chairman, Wambasa Primary School).



Figure 3. Girls at Kamunda School trying to access and pour water into the water tank.

Photos by J. Greene

Although there was a high demand for washrooms at Kamunda Primary School, some concerns remain about the acceptability among girls of using washrooms. For older girls, washroom use can be an indication that one has begun menstruation. This is especially true in settings where boys are not allowed to use the new facility.

"It is OK for other girls to know. But no [it is not OK] for the boys because they can embarrass you... they [boys] will know that you are on your periods" (Girl, 14 years old).

In all the three Water.org's KESSP latrine design schools, the topic of menstruation is taboo, and girls avoid any outward indications that they have their periods. Older girls reported that they are less hesitant to use the washroom if water collection can be done discreetly and beyond the purview of boys or children. In cases when girls must collect or carry water across a public space in order to use the washroom, several older girls said privacy is impossible and the washrooms are therefore not used.

"I would fear any of these boys knowing that i am menstruating, even if it means never using a school washroom"(girl, 15 years old, Ger Liech School).

⁷ Ideally, the tanks have filters/screens at the pipes connecting the roof with the gutters, to trap any debris from rainwater channeled from the roof. However, given the prolonged dry season, the pupils are fetching water from the earthpans and other sources and emptying into the tank, so the insects could either be from turbid water or get in when the lid is open and water being emptied. Ideally the lid should remain closed until during cleaning. While a filter can be put on the mouth, it will make cleaning and refilling of the tank difficult.

Conclusions and Recommendations

Summarized findings for each of the research areas and recommendations for an improved KESSP process are as follows:

- **Training:** Respondents from former KESSP schools expressed overall satisfaction in the amount of training they received in preparation for carrying out the KESSP project; however, operations and maintenance training was lacking, as was engagement by MOPHS and MOPW. The latter must be improved in future iterations of KESSP.
- **Prioritization:** Hand hygiene and water treatment were absent from schools that received KESSP funds for WASH projects, and there was clearly more focus on other school infrastructure like fencing and classrooms than on WASH. Hygiene, safe drinking water systems, and educational activities should also be promoted as part of KESSP, as these are highly important aspects of school WASH that are relatively low in cost. There is need for clarity of supply chain on soft goods such as soap, wash basins, sanitary napkins, brooms for cleaning, gloves, gumboots, detergent or chemicals to neutralize pit, and chlorine.
- **Monitoring:** Only the DEO was actively involved in monitoring the KESSP projects at the schools. A system that facilitates monitoring by other technical line ministries such as MOPW and MOPHS is needed, as the school projects suffered from the lack of these ministries' expertise. The SWASH+ enhanced model for KESSP has already proposed the introduction of a zonal level technical committee (ZTC) to provide supervision and monitoring of direct funding for school WASH. There were no clear systems in place for monitoring progress and the process of utilization of the WASH facilities. There may be a benefit from using child-based approaches for monitoring effectiveness of school WASH. This may be done through innovations such as enlarging the role of school health patrons, appointing WASH in students' prefects, and developing more vibrant and self-monitoring SHCs.
- **Budget and funding:** Budgets or plans for maintenance and repair were lacking in KESSP plans, reflecting a likely weakness in long-term sustainability of these projects. Training and feedback on SIDPs must encourage adequate budgeting for recurrent and repair costs. The schools should be provided with budget templates and a Bill of Quantities (BOQ) relating to the KESSP latrine model to avoid under-quoting or under-budgeting. The schools should also receive additional training on how to forecast annual ROM costs.
- **Quality:** Although there were concerns with the complexity of the KESSP design, schools were generally satisfied with the workmanship and quality of the local *fundis* they had contracted. However, local *fundis* had a hard time reading and accurately implementing the plans. If the KESSP design is to be standardized, there is need for constructing demonstration latrines in the intervention districts.
- **Roles and responsibilities:** Although several actors were aware of their roles and responsibilities, there were role conflicts between the SIC and SMC, which would benefit from clarification or restructuring in the future. Head teachers also complained of too many responsibilities with respect to KESSP projects. Schools must be encouraged to designate responsibilities for latrine cleaning, water provision and treatment in order to ensure sustained use. School Health Clubs or prefects could be made more active and play a key role in the ongoing maintenance and monitoring of facilities, with overall leadership from a designated school staff member.

- **Sustainability:** Community ownership and involvement beyond the planning stage was quite low and must be addressed if schools are to benefit from ongoing financial and in-kind support to sustain the programs. Better sensitization and information about actual disaggregated costs of WASH programs during the planning stage may assist in garnering greater community understanding of the need for their participation. Training and SIDP review support should insist upon the inclusion of budgeted funds for recurrent and repair costs.
- **Latrine/washroom design:** No schools receiving funds for WASH through KESSP implemented the recommended latrine/washroom design, citing high cost and lack of expertise or example in how to construct it. A more modest, lower cost design should be considered for future iterations of KESSP. In the Water.org schools having the KESSP design latrines/washrooms, the design was generally acceptable by school staff and students. To enhance acceptability and utility of the washrooms by girls, there is need to improve the design to allow for some illumination in the washrooms (no need to make them dark). There is also need to provide school-wide education with the view to removing the taboo from the concept of menstruation to remove normative barriers to utilization of washrooms. Provision of water in the facilities should be prioritized, and the hand washing stations should be low enough to be accessed by younger pupils.
- **Maintenance:** There is need for schools to designate people who are responsible for identifying, availing resources, and doing the repairs. There should also be clear plans for how the repairs are to be done, and within what duration after need identification. Maintenance scheme should also be built into KESSP design for evacuation.