



## EVALUATION REPORT

### End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Project

**November 2013**

This publication was produced at the request of the United States Agency for International Development. It was prepared independently by International Business & Technical Consultants, Inc. (IBTCI) under Task Order AID-611-TO-13-00005. It was authored by Joseph Limange, Matilda Shatunka, and Fidelis Don Chulu. The views expressed in this report do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

**COVER PHOTO**

**Credit:** Joseph Limange

**Caption:** A ninth grade pupil at Ndeka Basic School in Isoka District of Zambia pumps water from a conventional borehole provided by the USAID/Zambia School WASH and Quality Education Project.

# End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Activity

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November 26, 2013

## DISCLAIMER

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# ACRONYMS

APM	Area Pump Mender
DAPP	Development Aid from People to People
DBO	District Buildings Officer
DBS	District Education Board Secretary
DESO	District Education Standards Officer
DF	District Facilitators (for DAPP)
DHID	Department of Housing and Infrastructure Development
DHMT	District Health Management Team
DWA	Department of Water Affairs
D-WASHE	District Water Supply, Sanitation and Hygiene Education
GRZ	Government of the Republic of Zambia
HWT	Hand Wash Tanks
IMII	India Mark II Hand Pump
M&E	Monitoring and Evaluation
MCDMCH	Ministry of Community Development , Mother and Child Health
MESTVEE	Ministry of Education, Science, Technology, Vocational Training and Early Education
MEWD	Ministry of Energy and Water Development
MOLGH	Ministry of Local Government and Housing
NRWSSP	National Rural Water Supply and Sanitation Programme
O&M	Operation and Maintenance
PTA	Parents and Teachers Association
SCM	Supply Chain Management
SOMAP	Sustainable Operation and Maintenance Approach
ToT	Training of Trainers
USAID	United States Agency for International Development
VIP	Ventilated Improved Pit Latrine
WASHE	Water supply, Sanitation and Hygiene Education

# EXECUTIVE SUMMARY

International Business & Technical Consultants, Inc. (IBTCI) prepared this End of Project Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Activity. The \$8,209,838 project, activity number 611-A-00-09-00001-00 (Paul Simon Water for the Poor Earmark), was implemented by Development Aid from People to People (DAPP) from March 11, 2009 and is scheduled to end September 30, 2013. The Project's primary target included pupils, teachers, and the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE), with local communities being a secondary target.

## EVALUATION PURPOSE AND RATIONALE

The evaluation was centered on the project hypothesis that with the attainment of equitable and inclusive academic institutions that have a conducive learning environments (ones with adequate WASH facilities and services), there will be increased learners (especially girls who have reached puberty) and teacher attendance, decreased pupil dropout rates, and an increased performance in reading.

The evaluation was meant to serve several purposes: To learn the extent to which the project objectives and goals - at all result levels particularly focusing on WASH hardware development, training in hygiene education, community participation and systems strengthening - were achieved; to inform the design of possible future development of national guidelines for the implementation of WASH in schools; to assess the contribution of project interventions to improving pupil and teacher contact time (time on task), learner attendance and pupil/teacher retention; to review the cost-effectiveness and sustainability of the innovative approaches for WASH service provision in the pilots tested in the project; and to assess the sustainability of the project in terms of future replication and implementation by the Government of the Republic of Zambia.

## PROJECT BACKGROUND

The main objective of the School WASH and Quality Education Project is to improve access to water and sanitation services in schools in all 12 districts of Northern and Muchinga Provinces and to promote improved learning outcomes.

The School WASH and Quality Education Project had two components of implementation. Phase 1 was implemented from March 2009 to March 2012 and Phase 2 from April 2012 to September 2013. In the second phase, all 950 schools were identified for systems' strengthening and sustainability through rolling out the Sustainable Operations and Maintenance Approach (SOMAP).

## EVALUATION METHODS AND LIMITATIONS

**Interviews:** The evaluation used a mixed method evaluation approach combining qualitative and quantitative methods complemented with quasi-experimental design to access the project by interviewing some 1,286 respondents. Pupils surveyed constituted the largest proportion of 48%, followed by teachers surveyed (31%). The focus group discussions for PTA members, teachers and pupils constituted 15% with other stakeholders constituting the remaining 6%.

**Facility Inspection:** The evaluation inspected about 178 facilities in 64 schools selected for visits on the basis of being representative of schools supported by the project. The facilities inspected include: 52 traditional Ventilated Improved Pit Latrines (VIP), 6 ablution blocks, 3 advanced latrines, 4 integrated and 3 manually drilled boreholes. Others include 6 push and lift pumps, 1 spring protection, 51 hand washing tanks with bolt taps (and some with garden taps), 23 talking walls, 27 conventional boreholes and 2 hand-dug wells.

**Secondary Data:** The evaluation team reviewed implementation and policy documents from both Phase 1 and Phase 2 of the WASH Project. The team further reviewed and collected data on pupils from 97 schools. These schools included 54 treatment schools who benefited from the WASH project support and 43 control schools who did not benefit from the project support. The records

included tracking the attendance of 7,549 pupils (2,501 girls and 3,139 boys) over the six-year period from the treatment group and the attendance of 1,909 pupils (883 girls and 1,026 boys) from the control group. Data on teacher retention was also collected from 52 schools spanning from 2005 to 2013. This presented pre-project and post-project retention for comparison. There were 638 teachers (326 female and 312 male) from schools that benefited from the project's support who were tracked over this nine-year period.

**Limitations:** Three main limitations were faced by the evaluation. First the project's performance management plan was incomplete. Most of the indicators in the PMP are output based and most of the few outcome and impact indicators did not have counterfactual baseline data. Therefore it was difficult to determine if the project's targets were achieved. Second, the District Education Board Secretariats could not provide data on student attendance. The schools also faced the same challenge, making it very difficult to get student attendance data. Further, we could not get adequate school-based data on student performance. Third, the mission provided the evaluation team with the wrong monitoring and evaluation plan for the exercise. The right M&E plans was sent to the evaluation team two weeks after the evaluation team had submitted the draft evaluation report. The team therefore had to reanalyze the data to ensure that it could respond to the requirements of the new M&E plan.

**Evaluation Ethics:** Even though not a human subject research study, because children and community members are key stakeholders, the evaluation team sought and acquired ethical clearance from the Humanities and Social Science Research Ethics Committee of the University of Zambia (UNZA). Approvals were also received from the Ministry of Local Government and Housing with authority letter # MLGH/101/18/22 and from the Ministry of Education, Science, Vocational Training and Early Education with permission letter # MOE/101/8/2.

## EVALUATION FINDINGS

The evaluation was required to answer four questions. The findings are summarized below in response to the questions:

### ***Evaluation Question 1: To what extent were the project's targets achieved and why?***

#### **Condition of Project Activities and Facilities:**

**Provision of WASH Facilities:** The survey established the project has provided water facilities to 49.5% of the sample of purposively selected schools and sanitation facilities to 83.0% of the selected schools. The project targeted providing water and sanitation facilities to 50% of the schools. It was therefore able to achieve its target on sanitation facilities but not the water facilities.

**WATSAN Committees:** The project aimed at ensuring that 50% of the schools benefiting from its support have active WASH committees. This target has been achieved, with 52.9% active WASH committees. Some 59.6% of schools in urban locations have active WASH committees compared to 51.6% of schools in rural areas. The project also had a target of ensuring 90% of the latrines remaining clean; however this target was not achieved. The evaluation found that only 67% of the latrines were kept clean by the schools. It further targeted achieving 90% functional level for hand pumps, but the evaluation found that only 64% of the hand pumps were functioning well.

**Knowledge of Hygiene:** Most respondents believe in washing hands with soap after defecation and before eating. Among teachers 96.7% and 84.4% stated that they would wash their hands with soap after defecation and before eating respectively. Among pupils some 92.2% and 66.9% would also wash their hands after defecation and before eating respectively. However such knowledge is limited as to other occasions such as before preparing food, after cleaning a child's bottom, after cleaning the house and before feeding a child. Only 35.5% of teachers and 16.7% of pupils believe in washing hands with soap before feeding a child.

**Knowledge of IEC Materials:** Both pupils and teachers are widely aware of IEC materials provided by the WASH Project to their schools. However, only 13.5% of pupils have excellent understanding of these materials. Some 42.8% gave good understanding, 19.1% with average understanding and 24.6%

with weak or no understanding of these materials. The understanding of these materials was however higher among teacher. Some 49.5% had excellent understanding, 40.5% good, 7.3% average and 2.8% weak or no understanding of the IEC materials.

**Facility Usage and Disease Incidence:** The survey found that 94.4% of the pupils and 84.3% of the teachers had used the latrine provided by the project and that 85.3% of the pupils and 84.0% of the pupils had also used the water facility. During the two weeks preceding the survey, 15.1% of the pupils and 9.3% of the teachers had experienced diarrhea while 18.2% of the pupils and 15.1% of the teachers had family members experiencing diarrhea.

**Quality of Education:** The reading ability of learners from grade 4 to grade 9 was generally poor with only 30% able to read the English text book of their grade level fluently. The results also shows that 35.5% of pupils in schools that benefited from the WASH project in 2010 could read fluently as compared to 28.1%, 23.6% and 8.3% for 2011, 2012 and 2013 beneficiaries respectively. This shows a clear relationship between the year of benefit and reading ability and substantiates the hypothesis that provision of WASH facilities to schools improves English reading skills.

***Evaluation Question 2: What was the level of functionality of the innovative WASH technologies and approaches and responsiveness of the beneficiaries to them in the project?***

**Handing Washing Tanks with Bolt Taps:** The evaluation found that 41.2% of the hand washing tanks are functioning well; however some 37.3% either had their taps leaking or contained polluted water. A further 15% were broken down, with 5.7% still under construction. The main part that broke down was the bolt taps. All the bolt taps were not functioning and the project was in the process of replacing them with garden taps.

**Push and Lift:** The push and lift was found to be very effective with about 58.3% of those constructed functioning very well, 33.4% functioning but with difficulties and 8.3% broken down. The system was, however, found to be labor intensive, especially for very young pupils.

**Manually Drilled Boreholes:** Manually drilled boreholes are desirable and highly efficient because of the use of local materials and much unskilled labor for drilling. However, a manually drilled borehole is limited to depths of about 20 meters and therefore requires areas with a very high water table or else it dries up during the dry season. All the manual drilled boreholes that were inspected during the evaluation were dried up. Also, the drilling team has to relocate the site whenever the drilling hits a rock, no matter the depth of drilling that has already been achieved.

**Spring Protection:** Spring protection was found to be very effective. However, this depends upon the existence of a spring and the local topography of the spring and beneficiary community since the flow of the water is gravity dependent. The surroundings of the spring also need regular cleaning to ensure the water does not get polluted.

**Integrated Latrine:** Integrated latrines were found to be very interesting and liked by the beneficiaries since it combines both sanitation and hygiene facilities at the same location for beneficiaries. However they have several design limitations including the location of the wash rooms for girls, the design of the slab and drop-in holes, and the location of the vent pipes. All the integrated latrines constructed by the project have some parts broken down, and therefore none is functioning effectively.

***Evaluation Question 3: Could the approaches applied in the project be replicated and managed sustainably by the local institutional framework for the Education and WASH sectors in Zambia?***

The evaluation found that some of the approaches could be replicated and managed sustainably by the local institutions; however, some cannot.

The push and lift pump, hand washing tanks, manually drilled boreholes, and spring protection can be replicated but each of them has conditions under which they can be replicated. The hand washing tanks should be replicated but not with the bolt taps. Garden taps should be used instead. The manually drilled boreholes should be replicated in areas with very high water table and few rocks. Spring protection can also be replicated but since that is dependent upon the existence of a spring

and the topography of the area, they may not be replicated at will. The push and lift pump can, however, be replicated everywhere. The WASH committees can also be replicated in every school along with the talking walls.

The bolt taps should not be replicated because of their numerous limitations including easy rusting and breaking down and their inability to be repaired.

The project has not been able to achieve its target of establishing 12 spare parts outlets. Currently none of these have been established. However the project is coordinating with District Councils to establish spare part outlets through the SOMAP initiative. Most Area Pump Menders (APMs) travel to Lusaka to get spare parts for the water facilities.

***Evaluation Question 4: Was there a link between provision of safe and adequate WASH facilities in schools and pupil school attendance and teacher retention? How relevant were the project interventions in improving student/teacher school attendance and retention?***

**WASH Facilities and Pupils Attendance:** A trend analysis of pupils' attendance before, during and after the provision of WASH facilities to schools indicates a reduction in pupils' attendance before and during the construction of WASH facilities. However, attendance, particularly for girls picked up immediately after construction of the facilities and continued to increase. There is therefore a strong relationship between provision of WASH facilities and pupils attendance. A confirmatory analysis using an experimental design to trace attendance before, during and after the provision of WASH facilities also showed attendance of both beneficiary and non-beneficiary schools being erratic before the provision of the facilities. Attendance in beneficiary schools started increasing right after the provision of WASH facilities; however, attendance in non-beneficiary school continued to be erratic.

**WASH Facilities and Teacher Retention:** A pre- and post-project analysis of the trend of teachers in 52 schools that benefited from the WASH Project does not support the hypothesis that providing WASH facilities to schools improves teacher retention. There has been a consistent increase in the average number of teachers in these 52 schools since 2005. This increase continued at the same rate during the construction period but the rate reduced during the benefit period. This means there are other factors that are influencing teacher retention or numbers of teachers in schools.

## CONCLUSIONS

Based on the findings enumerated above, the evaluation draws the following conclusions:

### ***1. Extent of Achievement of Project's Targets***

**Provision of WASH Facilities:** The project has provided water facilities to 49.5% of the purposively selected schools and sanitation facilities to 83.0% of the selected schools. The project targeted providing water and sanitation facilities to 50% of the schools.

**WATSAN:** The project exceeded its target on ensuring that 50% of schools provided with WASH facilities have active WASH committees by 2.9%. However the project failed to achieve its target on ensuring 90% of the latrines remained clean. Only 67% of the latrines were kept clean by the schools. It also failed to achieve its target of ensuring that 90% of hand pumps remained functional. Only 64% of the hand pumps were functioning well.

**Knowledge of Hygiene:** Among teachers 96.7% and 84.4% said they would wash their hands with soap after defecation and before eating respectively. Among pupils some 92.2% and 66.9% would also wash their hands after defecation and before eating respectively. However, only 35.5% of teachers and 16.7% of pupils believe in washing hands with soap before feeding a child.

**Knowledge of IEC Materials:** Both pupils and teachers are widely aware of IEC materials provided by the WASH Project to their schools. However, only 13.5% of pupils have excellent understanding whilst 24.6% have weak or no understanding of these materials. The understanding of these materials was however higher among teacher where 49.5% had excellent understanding, and only 2.8% with weak or no understanding of the IEC materials.

**Facility Usage and Disease Incidence:** About 94.4% of the pupils and 84.3% of the teachers had used the latrine provided by the project. Also 85.3% of the pupils and 84.0% of the pupils had also used the water facility. During the two weeks preceding the survey, 15.1% of the pupils and 9.3% of the teachers had experienced diarrhea while 18.2% of the pupils and 15.1% of the teachers had their family members experiencing diarrhea.

**Quality of Education:** Reading ability of learners from grade 4 to grade 9 is generally poor with only 30% able to read the English text book of their grade level fluently. There is a positive relationship between the year of benefit and reading ability. Therefore the hypothesis that provision of WASH facilities to schools improves English reading skills is supported.

## ***2. Level of functionality of the Innovative WASH technologies***

The conclusions drawn on the level of functionality of the innovative WASH technologies based on the finding explained above are:

**Hand Washing Tanks with Bolt Taps:** The hand washing tanks are functional and durable; however the bolt taps are easily corroded and easily break down. The bolt taps are also not repairable when they break down, resulting in the malfunctioning of 53% of the tanks.

**Push and Lift Pump:** The push and lift pumps are very effective with 70% of those constructed functioning very well, 20% functioning but with difficulties and 10% broken down. The system was however found to be labor intensive especially for the very young pupils.

**Manually Drilled Boreholes:** Manually drilled boreholes are cost effective in comparison to conventional boreholes and hand dug wells. However the depth is just about 20 meters and often dries up during the dry season. All the manually drilled boreholes that were inspected during the evaluation were dried up.

**Spring Protection:** Spring protection is very effective. However, it depends upon the existence of a spring and the local topography of the spring and beneficiary community since the flow of the water is gravity dependent.

**Integrated Latrine:** Integrated Latrines were found not to be functioning effectively. Various parts of the systems had broken down, especially the water supply system. Pupils therefore had to travel some distance to fetch water for use in the integrated latrine. Where the water supply system was functioning, it requires about 2 hours of pupils time to pump water required for a day.

## ***3. Replication and Sustainable Management***

The evaluation concludes that some of the approaches should be replicated but others should not.

The push and lift pump, hand washing tanks, manually drilled boreholes, and spring protection should be replicated but each of them has conditions under which they should be replicated. The hand washing tanks should be replicated with the garden taps. The manually drilled boreholes should be replicated in areas with very high water tables and few rocks. Spring protection should be replicated but since that is dependent upon the existence of a spring and the topography of the area, it cannot be replicated everywhere.

The push and lift pump should be replicated in schools that have larger enrollments. Also the WASH committees should be replicated in each school along with the talking walls.

The bolt taps should not be replicated because of their numerous limitations.

None of the 12 spare parts outlets the project planned have been established.

## ***4. Linkage between provision of safe and adequate WASH facilities in Schools and pupil school attendance and teacher retention***

**WASH Facilities and Pupils Attendance:** There is a strong relationship between provision of WASH facilities and pupils' attendance, proving WASH facilities increase pupils attendance. The increase in attendance is immediate for girls but gradual for boys. However pupils' attendance falls during

construction of the WASH facilities. The hypothesis that safe and adequate facilities in schools improve pupils' attendance is therefore accepted.

**WASH Facilities and Teacher Retention:** There is no relationship between provision of safe and adequate WASH facilities in schools and teacher retention. The hypothesis that provision of WASH facilities to schools can improve teacher retention is therefore rejected.

## RECOMMENDATIONS

The evaluation makes the following three main recommendations based on the findings and conclusions:

It is recommended the hand washing tanks with garden taps, push and lift pumps, manually drilled boreholes and spring protections be replicated. However the bolt taps should not be replicated. The WASH Project should use the remaining time to strengthen the non-functional WASH Committees and support schools without WASH committees to establish such committees. The WASH Project should also stop replacing the bolt taps for the schools but should strengthen ownership and let the schools replace the taps for themselves. The next project should also consider training more APMs, one teacher from each school provided with a water facility and another from the school's community.

Any next project should place more emphasis on establishing spare parts outlets. Three alternatives are proposed; supporting commercial sales outlets to include hand pump spare parts, supporting APMs to purchase some spare parts and sell alongside their repair works as mobile sales outlets and supporting the District Councils to establish spare part outlets through the SOMAP initiative. The design of the current project is good, leading to the numerous achievements indicated in the report. However, the following should be considered for future designs of similar projects.

**Software Component** - The project gave a lot of attention to the construction of the facilities but little attention to the "software" component of the project such as formation of WASH Committees, training of WASH committees, involvement of communities and monitoring of the activities of these schools to ensure that facilities provided are sustained.

**Selection of Schools** - Several schools are in need of these facilities, especially in rural areas. However, the tendency of schools not "owning" the project and even abandoning the project is real. Any subsequent project should therefore ensure that the provision of such facilities to schools is demand-driven. This can be done by setting standards for qualification of which schools must work to achieve, such as assembling the up-front materials and at least 5% of the capital cost contributed into an O&M account with supporting document to prove this. Two standards are recommended: A pre-qualification should be that the schools have at least two classroom blocks with an office. This would ensure that latrines are not provided to schools that may end up collapsing, thereby wasting the funds. While these conditions are not difficult to fulfill, they would actually ensure that the schools own the facilities provided. This would further ensure they do not wait for the project to fix any challenges with the facility.

# I.0 INTRODUCTION

## I.1 EVALUATION PURPOSE AND RATIONALE

In May 2013, USAID/Zambia commissioned a final performance evaluation of the School Water Supply, Sanitation and Hygiene (WASH) and Quality Education Project, which began in March 2009 in 12 districts in Northern and Muchinga Provinces. The evaluation focused on establishing whether the project had achieved the goals/ objectives over the implementation period, assessing how the project was implemented, assessing how the project was perceived and valued by beneficiaries and stakeholders, determining whether expected results occurred and answering other questions that were pertinent to the design, management and operational decision making of the project. USAID/Zambia contracted International Business & Technical Consultants, Inc. (IBTCI) to conduct the evaluation.

The evaluation was centered on the project hypothesis that with the attainment of equitable and inclusive academic institutions that have a conducive learning environments (one with adequate WASH facilities and services), there will be increased attendance by learners (especially girls who have reached puberty) and teachers, decreased pupil dropout rates, and in increased performance in reading. The project was designed to create a conducive learning environment by providing water supply, sanitation and hygiene facilities in schools and teachers' houses within the school premises. It is believed that most girls who attend rural schools tend to drop out when they reach puberty due to poor water supply and sanitation facilities. It has also been observed that most female teachers are unwilling to be posted to rural schools partly due to poor water supply and sanitation facilities.

The evaluation was meant to serve several purposes:

- i. To learn the extent to which the project objectives and goals - at all result levels particularly focusing on WASH hardware development, training in hygiene education, community participation and systems' strengthening – have been achieved
- ii. To inform the design of possible future development of national guidelines for the implementation of WASH in Schools
- iii. To assess the contribution of project interventions to improving pupil and teacher contact time (time on task), learner attendance and pupil/teacher retention;
- iv. To review the cost-effectiveness and sustainability of the innovative approaches for WASH service provision in the pilots tested in the project and
- v. To assess the sustainability of the project in terms of future replication and implementation by the Government of Zambia.

## I.2 EVALUATION QUESTIONS

IBTCI was tasked to examine both gender and environmental issues within the context of the project and how they influenced the achievement of project objectives that may or may not have led to improved learner performance. The evaluation was, to the extent practicable examine aspects of the project that contributed to an enabling environment for quality education to take place, such as increased student/teacher attendance and retention and increased teacher/student contact time.

The evaluation addressed the following research questions<sup>1</sup>:

- I. **To what extent were the project's targets achieved and why?** Assessed whether the project managed to achieve planned results focusing on quality/quantity of outputs for the project (i.e. construction works, awareness levels of good hygiene among intended beneficiaries, strengthening systems involved in School WASH implementation/governance, and also lessons on what works, etc.). Any identified changes that had occurred during implementation of the project, both in the external environment or internal to the project, are indicated in the

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<sup>1</sup> See Evaluation Matrix on Annex F

evaluation report, especially where they might have had a bearing on project outputs and outcomes.

2. **What was the level of functionality of the innovative WASH technologies and approaches and responsiveness of the beneficiaries to them in the project?** Assessed the enablers and barriers to utilizing innovative technologies and approaches. Assessed the best practices and lessons learned during the application of the innovative technologies and approaches in the project.
3. **Could the approaches applied in the project be replicated and managed sustainably by the local institutional framework for the Education and WASH sectors in Zambia?** Assessed as to effectiveness, issues, and challenges.
4. **Was there a link between provision of safe and adequate WASH facilities in schools and pupil school attendance and teacher retention? How relevant were the project interventions in improving student/teacher school attendance and retention?** Assessed the relationship between provision of WASH facilities and services in schools to pupil school attendance and teacher/student retention, particularly for women and girls. Comparisons included attendance before and after the project; attendance rates between schools that didn't receive any support compared to those that did; and attendance rates among the different schools within the project that received different forms of support.

### 1.3 PROJECT BACKGROUND

The main objective of the School WASH and Quality Education Project is to improve access to water and sanitation services in schools in all 12 districts of Northern and Muchinga Provinces<sup>2</sup> and to promote improved learning outcomes. The project intended to accomplish the following specific objectives:

- Promote education access, gender equity, girls education, teacher retention and improved health outcomes in Zambian schools;
- Improve water supply by rehabilitating or constructing water points using conventional and/or appropriate technologies;
- Improve sanitation services in basic schools by constructing latrines;
- Improve local capacity to maintain water and sanitation facilities;
  - Improve water, sanitation and hygiene education in basic schools.

The School WASH and Quality Education Project had two components of implementation:

- Phase 1: from March 2009 to March 2012, covering 240,000 learners in 800 schools in all 12 districts of Northern and Muchinga provinces.
- Phase 2: (Extension) from April 2012 to September 2013 covering an additional 50,000 learners in 150 schools for hardware outputs such as water point and school latrine construction and software outputs, particularly hygiene education. In the second phase, all 950 schools were earmarked for systems' strengthening and sustainability through rolling out the Sustainable Operations and Maintenance Approach.

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<sup>2</sup> See Districts Location Map in Annex B

## 2.0 EVALUATION METHODOLOGY

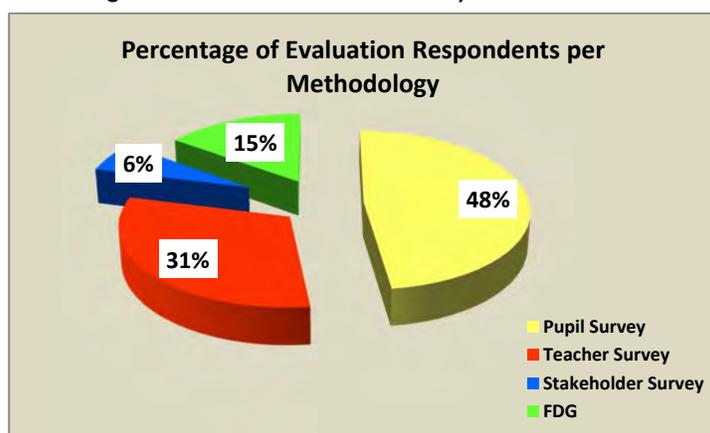
The evaluation team was cognizant that a rigorous end-of-project performance evaluation of the size and scope of the School WASH and Quality Education Project (“the WASH Project”) depends on targeting a sufficient number of benefitting schools and stakeholders, ensuring that its sample of schools is geographically and demographically diverse and representative, and triangulating data through its collection tools to reinforce findings and identify inconsistencies.

### 2.1 EVALUATION TEAM STRUCTURE<sup>3</sup>

The evaluation team was comprised of an international consultant serving as the Team Leader (Joseph Limange, MBA, PhD Candidate), two Zambian Research Specialists (Fidelis Don Chulu, MSc and Matilda Shatunka, MSc), and Six Research Assistants (Sharon Mwangani, Dip and Chendela Masengu, BA; Brian McTribouy, BA; Kaoma Musenge-Zimba, B.Com; Exilda Chisongo, Dip; and Mayondi Chilayi, BA). They were supported by a logistics coordinator (Chembe Nyendwa-Banda). The team worked under the direct supervision of the Project Director Gayla Cook from the IBTCI home office, with support from the Project Coordinator Irina Kuzemkina.

### 2.2 EVALUATION DESIGN

The evaluation used a mixed-method and experimental design that created a representative sample for the data collection. The team further ensured in-person site visits and data collection at all of these sample institutions, and maximized the use of existing valid data resources to help assess the reality of the hypothesis that WASH facilities can improve school attendance and teacher retention. This design enabled the Team to robustly address USAID/Zambia’s four key questions for this



evaluation and to test the WASH Project’s development hypothesis.

The team sampled 149 schools, within which the Team undertook site observations, key stakeholder interviews, focus group discussions (FGDs) and mini-surveys and records inspection. Of the 149 schools, 106 were schools supported by the WASH Project and the remaining 43 were selected as a control group. To ensure that the schools selected were highly representative, the Team prioritized schools by a

FIGURE 2.1- RESPONDENT PROPORTIONS

number of key criteria. These criteria included: *program emphasis* - considering the level of WASH resources directed toward a specific school or group of schools; *geography emphasis* - ensuring that all 12 targeted districts of Northern and Muchinga Provinces are visited<sup>4</sup>; *phase of implementation* - ensuring that schools selected were from both Phase 1 and Phase 2 and further ensuring that each year’s beneficiary group is represented (from 2009 to 2013); and *school demographics* - ensuring a relatively balanced gender population; small, mid-sized and large schools; rural and urban schools as well as government and community schools.

In all, the evaluation interviewed 1,286 respondents. Of this population, pupils interviewed in the survey constituted the largest proportion, 48%. This was followed by teachers interviewed in the survey (31%). The focus group discussions for PTA members, teachers and pupils constituted 15% with stakeholders constituting the remaining 6%.

<sup>3</sup> See detailed evaluation team biographies in Annex C

<sup>4</sup> See map in Annex B

## 2.3 ETHICAL CLEARANCE AND AUTHORIZATION

The evaluation adopted the highest standard of evaluation ethics to ensure the rights of respondents are respected. Even though not a human subject research, the evaluation team sought and acquired ethical clearance from the Humanities and Social Science Research Ethics of University of Zambia's (UNZA), Directorate of Research and Graduate Committee. The research was cleared with clearance # IRB: 00006464 and IORG: 00005376 as having "no issues involved that raise ethical concerns".

With the support of USAID/Zambia, the evaluation also sought and acquired permission from the Ministry of Local Government and Housing with authority letter # MLGH/101/18/22 and from the Ministry of Education, Science, Vocational Training and Early Education with permission letter # MOE/101/8/2.

The evaluation team went further to ensure that no respondent responded to questions against his/her will. The evaluation team therefore read a participatory information sheet<sup>5</sup> explaining the rights and responsibilities of respondent to ensure that each respondent had adequate information to make a decision in taking part or otherwise. When a respondent agreed to take part, the respondent was requested to sign an informed consent to acknowledge his/her wilful participations. For pupils who were below 18 years, the head teacher of the school or his/her representative witnessed the informed consent process and signed, granting teachers/parental consent before the interview was conducted.

## 2.4 DATA COLLECTION METHODOLOGY

### 2.4.1 Initial Discussion

The evaluation team started the evaluation with a review meeting with the USAID/Zambia to further understand the assignment and responsibilities of the evaluation. Following this meeting, the team met with representatives of Development Aid from People to People (DAPP), the organization that implemented the USAID/Zambia WASH Project. The DAPP team was led by the Country Director. The meeting further shed light on the responsibilities of the project and methodologies used in accomplishing these responsibilities. With this firm background of the project, the team could finalize the evaluation methodology, questionnaires, and plans.

### 2.4.2 Data Collection Methods

**Data Collection Strategy:** The evaluation team comprised of nine people including three specialists and six research assistants as interviewers for questionnaire administration. After a full day training for the research assistants, the team divided into three sub teams, with each team composing a specialist and two research assistants. Each of the three sub teams covered four Districts for data collection within a two week period. All 12 Districts<sup>6</sup> in Northern and Muchinga Provinces were included in the data collection. A total of 106 schools were visited. A purposive sample method was used to select the schools. The criteria for selection included; beneficiary status (phase 1 and 2), level of WASH resources directed towards the school, community type (urban and rural status), type of school (government or community) and geographical location (district).

To facilitate data collection and ensure high quality data with high integrity, Smart Phone technology was used for the data collection. The questionnaires were loaded onto smart phones. Once the interviewer entered the answer to any question, it was automatically stored on the phone. The data was immediately submitted upon completion of the interview, preventing anyone from tempering with it and ensuring that all data collected was submitted in a timely manner. This efficient method meant no data entry was required as data collected was immediately exported into an SPSS template for analysis.

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<sup>5</sup> Attached as Annex G

<sup>6</sup> The 12 Districts include: Mpika, Chinsali, Isoka, Nakonde, Kasama, Mbala, Mungwi, Luwingu, Chilubi, Mporokoso, Kaputa and Mpulungu

**Secondary Data Collection**

The evaluation team reviewed documents from both phase 1 and phase 2 of the School WASH and Quality Education Project. Document reviewed included contractual agreement, program descriptions, extension documents, work plans and monitoring & evaluation plans. To effectively identify any possible relationship between provision of WASH facilities to schools and pupils’

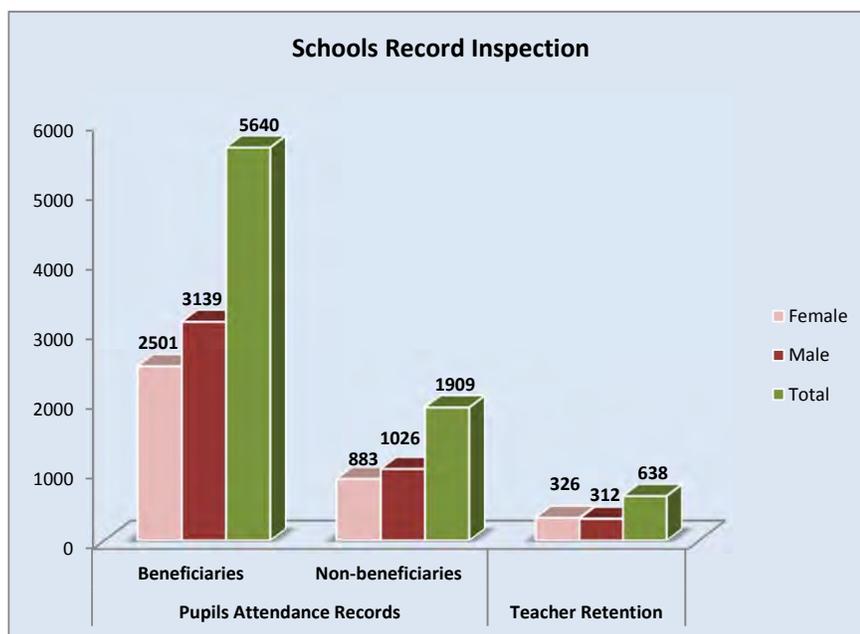


FIGURE 2.2- SCHOOL RECORDS INSPECTED

school attendance and teacher retention, the evaluation team reviewed and collected data on pupils from 97 schools. These schools included 54 schools which benefited from the WASH project support and 43 control schools which did not benefit from the project support. An experimental design approach was used in responding to evaluation question 4. The data collected covered a six-year attendance record including the immediate three years preceding the construction of the facilities, the year of construction and the two years after the construction of the facilities. This enabled both a pre-project and post-project attendance comparison and a treatment versus control comparison analysis to determine the relationship between WASH facilities and pupil attendance. The records included tracking the attendance of 7,549 pupils over the six-year period. These records included the attendance of 2,501 girls and 3,139 boys from 52 schools that benefited from the project’s support as the treatment group and the school attendance of 883 girls and 1,026 boys from 43 schools that did not benefit from the project’s support as the control group.

Data on teacher retention was also collected from 52 schools. The data collected spanned from 2005 to 2013. This presented pre-project and post-project retention for comparison. There were 638 teachers (326 female and 312 male) from schools that benefited from the project’s support who were tracked over this nine-year period. Through this comparison, the evaluation was able to establish the relationship between provision of WASH facilities to schools and teacher retention.

**Surveys of Schools** – A purposively-selected sample, consisting of 106 schools

spread across the 12 districts were

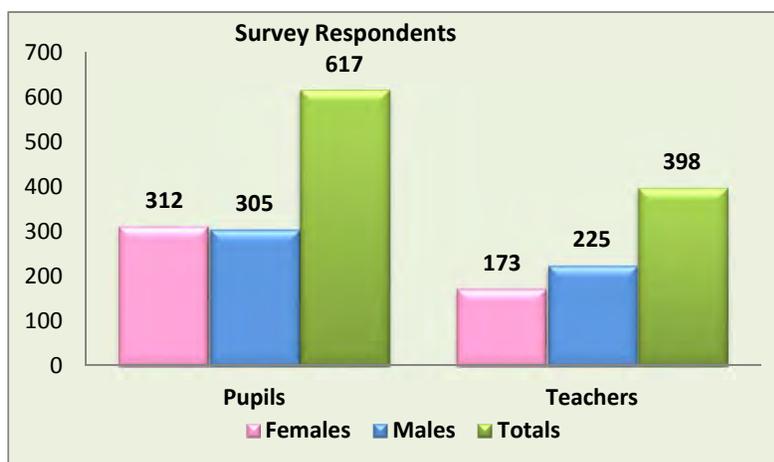
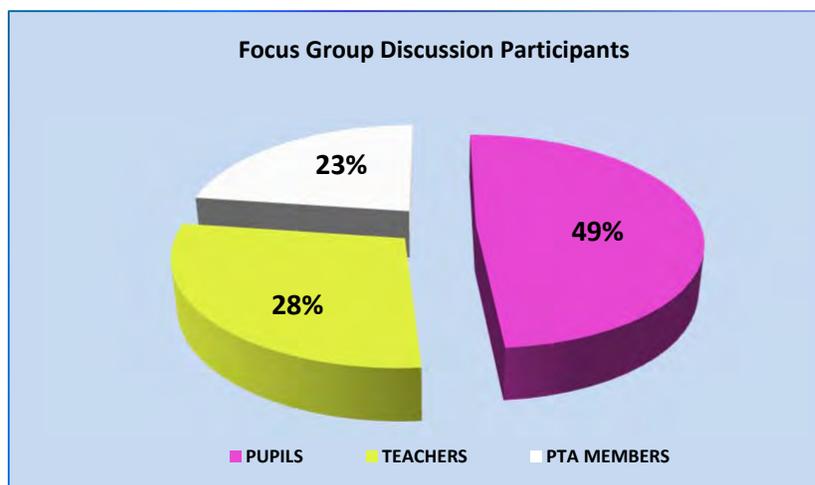


FIGURE 2.3 - SCHOOL SURVEY RESPONDENTS

selected by the evaluation team. About 84% of the selected schools benefited from Phase 1 of the project with the remaining 16% selected from the Phase 2 schools<sup>7</sup>. Research assistants administered questionnaires in these 106 schools under the direct supervision of sub team leaders. The pupils in each class were grouped by gender and one was selected at random. The team kept changing the gender of the respondent selected by grade in each school. This was to ensure a balance of genders among the respondents. The questionnaires were administered to a total of 1,015 respondents. These respondents included 617 pupils of which 312 (50.57%) were girls and the remaining 305 (49.43%) were boys. All the pupils were selected from grade 4 to grade 9. Also 398 teachers were interviewed. The teachers interviewed included 173 (43.47%) female teachers and 225 (56.53%) male teachers. The Head teachers were given the opportunity to be part of four teachers selected from each school for interviews. Where the Head teacher was not present, the assistant head or whoever was acting as the head was interviewed.

**Facility Inspections** – The evaluation teams also inspected about 178 facilities in the 64 schools visited. The facilities inspected included: 52 traditional VIPs, 6 ablution blocks, 3 advanced latrines, 4 integrated latrines and 51 hand washing tanks with bolt taps (and some with garden taps). Others included 6 push and lift pumps, 1 spring protection, 23 talking walls, 27 conventional boreholes, 3 manually drilled boreholes and 2 hand dug wells. The inspection of these facilities coupled with focus group discussions and stakeholder interviews formed the basis of analysis and recommendations on the innovative technologies.

**Stakeholder Interviews** – The team used a master question guide to conduct stakeholder interviews for about 78 key stakeholders. These included 65 males and 13 females. The selection of stakeholders for interview depended on knowledge of the project and related activities and office of responsibility of the individual. Stakeholders interviewed at the national level were representatives of Government of Republic of Zambia (GRZ) including representatives from the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE) the Ministry of Local Government and Housing (MLGH); and representatives from the NGO WASH Forum. Other staff interviewed included the Chief of Party for the WASH project; the Country Director and other staff of DAPP. At the provincial level, staff was selected from MESVTEE and MLGH. District level stakeholders interviewed included the District Education Board Secretaries (DEBS), District Buildings Officers, and Latrine Masons and Pump Menders selected from the 12 Districts.



**Focus Group Discussions** – The three evaluation specialists conducted a total of 36 focus group discussions involving 193 respondents. The respondents included 44 PTA members (23%), 55 teachers (28%) and 94 pupils (49%). Women were the majority respondents in these groups, constituting 54.92% with men forming the remaining 45.08.

FIGURE 2.4 - FOCUS GROUP DISCUSSION PARTICIPANTS

<sup>7</sup> See list of schools visited in Annex D

## 2.5 ANALYSIS OF RESEARCH DATA

To ensure effective and comprehensive analysis as well as identification of the most significant results, the data were categorized into three analytical groups. The groups included primary quantitative data, secondary quantitative data and qualitative data. A unique approach was used in analyzing each of these categories of data: the data were further triangulated across groups to establish relationships and enable attribution of confounding factors.

***Analysis of Primary Quantitative Data:*** Primary quantitative data category included data from three sources. These were the Survey of Pupils, Survey of Teachers and Facility Inspection Records. All data in this category were analyzed with the use of Statistical Package for Social Science (SPSS). SPSS was used to generate frequencies and trends to establish the effect of various activities on the results. The SPSS was further used to conduct some bivariate and multivariate analysis to establish the relationship in identified trends. Data from the facility inspection records was analyzed in SPSS to establish the level of functionality of the WASH infrastructure. Bivariate analysis was used to identify the level of functionality and disaggregated by school type (government schools or community schools), and phase of beneficiary, locality type (urban or rural) and gender (male or female). The results from these analyses led to identifying the extent to which the project has been able to achieve its activities targets in project life thereby answering Evaluation Question 1.

***Analysis of Secondary Quantitative Data:*** This category included data collected from the registers of 54 beneficiary schools and 43 non-beneficiary schools on pupils school attendance as well as data from 52 beneficiary schools on teachers. Microsoft Excel was used to analyze this attendance data from the schools to assess the effect of the project's activities on pupils' attendance and teacher retention. This was done by generating polynomial trends on school attendance rate and extrapolating for the next three years to predict future performance. Excel was further used in conducting an experimental design analysis by comparing pupils' attendance rate in beneficiary schools and non-beneficiary schools over a period of six years. A regression analysis in Excel for pre- and post-WASH project teacher retention rates further enabled the attribution of teacher retention rates. All these analysis led to identifying the impact of WASH facilities on pupils' school attendance and teacher retention, thereby answering evaluation question four.

***Qualitative Data Analysis:*** This category included both primary qualitative data collected from stakeholder interviews and focus group discussions as well as secondary qualitative data gathered during literature review. The qualitative data was analyzed manually by comparing the findings to quantitative data from the surveys and facility inspection results. This therefore informs the reasoning behind the results, thereby augmenting the primary data from facility inspections to identify the level of functionality of the innovative technologies and the suitability for replication of these technologies. This analysis combined with quantitative primary analysis therefore enabled response to evaluation questions three and four.

## 2.6 LIMITATIONS

The evaluation was successful but not without limitations. The exercise was confronted by two main data-related challenges. They include:

***Limitation with Project Performance Management Plan (PMP):*** The project's performance management plan was incomplete. Most of the indicators in the PMP are output-based. The few outcome and impact indicators did not also have definitions, counterfactual and targets, making it difficult to compare the current state to the baseline and identify if the target has been achieved. While it is possible to determine the current state of these indicators, there are no targets to compare with and determine if the project achieved its targets.

***Challenge with Educational Statistics:*** There is a real challenge with access to educational statistics as basic as attendance. The District Education Board Secretariats could get data on enrolment into various grades but had no data on attendance. Forms inspected in some Districts showed that most schools reported on enrolment and left the attendance columns blank or completed it wrongly. The challenge with data was not limited to the District level but also at the school level. Each school had

to dig into its archives to bring out hard copy registers to count enrolment. This challenge made the evaluation team spend a significant amount of the analysis and report writing period collecting data. It was also not possible to obtain adequate student performance data at the school level.

***Provision of the Wrong M&E Document:*** The USAID/Zambia mission team provided the evaluation team with a monitoring and evaluation plan as part of the authentic documents for the evaluation. Since end term performance evaluations are heavily reliant upon the indicators and targets in the M&E Plan, the evaluation team designed and conducted the evaluation in line with the indicators and targets in the plan. However, two weeks after the evaluation team had submitted the draft and held a debrief on the findings with the USAID/Zambia team, the mission team provided the evaluation team with a different monitoring and evaluation plan and required the new plan to be used for the evaluation. This meant that the evaluation team had to revise the entire report and also go back to the field to collect more data to respond to the new demands.

## 3.0 FINDINGS

The findings of the evaluation have been categorized into four in line with the evaluation questions. These four categories include the (i) extent to which the project achieved its targets, (ii) findings on the innovative technologies introduced by the project, (iii) feasibility of the project activities being replicated in other geographical areas and ability of local institutions to manage and sustain these technologies and (iv) establishing the relationship between provision of WASH facilities in schools, school attendance and teacher retention.

The findings have therefore been categorized under these four evaluation question areas.

1. **Achievement of Target:** This section examines the extent to which the project has been able to achieve its targets. The findings under this subhead include the provision of facilities; condition of facilities and activities implemented by the project; knowledge of beneficiaries on various hygiene practices; the usage of facilities by the beneficiaries and the effect of project support on improving reading skills of pupils.
2. **Innovative WASH Technologies:** This category examines the level of functionality of the innovative technologies; the extent to which beneficiaries are taking responsibility for the usage and management of the facilities; the enabling factors aiding the functioning of these technologies; the barriers being faced by these innovative technologies and; best practices implemented by the WASH Project.
3. **Replication and Management by Local Institutions:** This section of the findings examines three main areas. They include the ability and conditions to replicate activities and technologies implemented; operation and maintenance of the facilities and; sustainability of the facilities as established by the evaluation.
4. **Linkages between WASH Facilities and Pupil Attendance and Teacher Retention:** Under this section, the findings are presented in two sub sections. (i) Linkage between provision of WASH facilities and pupil attendance and (ii) Linkage between provision of WASH facilities and teacher retention.

### 3.1 ACHIEVEMENT OF TARGET

The project's targets have been grouped into four strategic targets: condition of project activities and facilities; knowledge on hygiene; facility usage and incidents of diarrhea diseases; and quality of education. The findings are accordingly presented in this line.

#### 3.1.1 Condition of Project Activities and Facilities

##### Provision of WASH Facilities<sup>8</sup>

Among the schools that were sampled and interviewed, 49.5% indicated they have been provided with a water facility either by construction of a new facility or rehabilitation of an old facility by the WASH Project. This achievement slightly falls short of the project's target of providing water facilities to 50% of the beneficiary schools. The project was however successful in achieving its target of providing improved sanitation facilities to 50% of the selected school. This target was exceeded by 33% as shown on table 3.1 below.

	Water Facility	Sanitation Facility
Schools Provided with Facility	49.5	83.0
Schools not provided with facility	50.5	17.0

<sup>8</sup> Schools were selected by purposive sampling and not by a random sampling method. Analysis on facilities provided is therefore limited to sampled schools.

## Functionality of WASH Committees

The project aimed at ensuring that 63.1% of the schools benefiting from its support have active WASH committees. This target has not been achieved. The project managed to achieve 52.9% active WASH committees falling short of the target by 10.3 percentage points. The table 3.2 further shows that there are more active WASH committees in the urban schools than rural schools. Some 59.6% of schools in urban location have active WASH committees compared to 51.6% of schools in rural. The rural areas also recorded the highest proportion (42.1%) of schools where WASH committees have not been established.

Table 3.2 - Percentage of Active WASH Committees by Locality Type and School Type					
Standard	WASH Committee Status	Locality Type		School Type	
		Urban	Rural	Government	Community
Active	52.9	59.6	51.6	53.7	34.5
Not Active	6.2	6.4	6.3	6.3	6.9
No Committee	40.9	34.0	42.1	40.0	58.6

However both rural and urban schools failed to achieve the target. Government schools also failed to achieve the 63.1% target, achieving only 53.7% active WASH Committees. Community school schools performed much more poorly, achieving 34.5% active WASH committees. Most of the schools with inactive committees attributed it to the departure of key members of the committees. These schools have no system for replacing members who leave and therefore the committees become weaker when effective members leave the schools. However, most of the schools without WASH committees had not established them.

## Condition of Latrines Provided to Schools

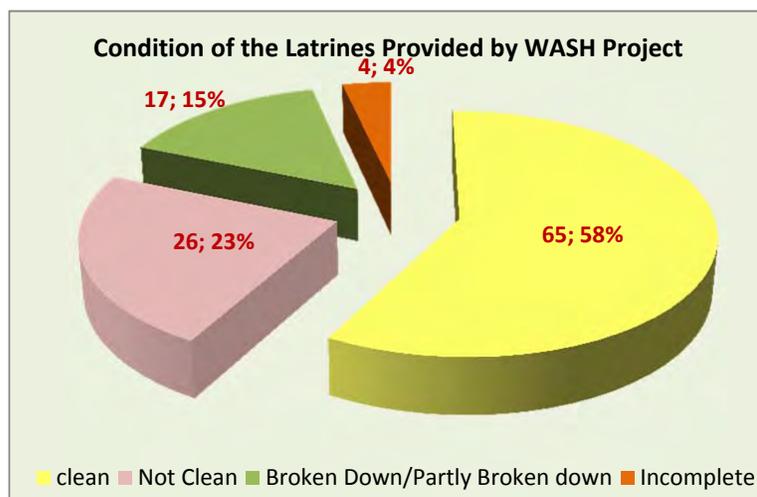


FIGURE 3.1 - LATRINE CONDITION

The project had a target of achieving 90% of the latrines remaining clean. This target has not been achieved. As shown on figure 3.1, the evaluation found that only 58% of the latrines were kept clean by the schools and in use by pupils and teachers, falling short by 32 percentage points. Some 26% of the latrines were completed and in use but were not kept clean by the schools and a further 17% are broken down/partly broken down and

are either not in use or are partly in use. Most of these broken down/partly broken down facilities have exposed pipes, leaking pipes, and broken sink basins. For instance the Ablution Block at Mporokoso Basic School was not working even after the Project spent funds rehabilitating it. There was no running water that could be used for flushing the WC toilets and urinals and the PVC pipes were exposed and broken down by the strong sunshine. The latrines that were kept clean were found in schools where there is a functioning school WASH committee. The WASH committees showed effectiveness in cleaning the latrines and supervising the fetching of water into the hand washing tanks. Most of the schools

without the WASH committees were not able to keep their latrines clean. Some 3% of latrines were still being constructed at the time of the evaluation and were therefore not in use, with over 95% of them having reached an advanced stage.

### ***Condition of Hand Pumps Provided to Schools***

The project also failed to achieve its target on the number of functioning hand pumps. It targeted achieving 90% functional level but the evaluation found that only 62% of the hand pumps were functioning well. As shown on Figure 3.2, about 22% of the hand pumps were functioning but not functioning well. These include facilities with trickling water, those that periodically dry up and facilities that had to be pumped for a while before water begins to flow.

A further 11% of the facilities were broken down and not in effective use at the time of the evaluation. Most of such facilities have been broken down for over two weeks and had not been maintained. Some 5% of the water facilities had not been completed at the time of the evaluation.

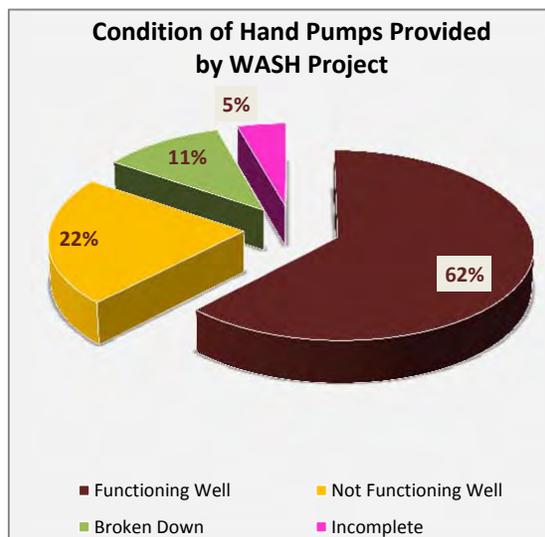


FIGURE 3.2 HAND PUMP CONDITION

## **3.1.2 Knowledge of Hygiene**

### **Hand Washing Practices**

On respondents' beliefs on hand washing, there is an extremely good knowledge on hand washing after defecation and before eating. Among teachers, some 96.7% believe there is the need to wash hands after defecation. Female teachers (98.8%) indicating washing hands after defecation are a little higher than their male colleagues (95.1%). About 84.4% of teachers also believe in washing hands before eating. These two occasions are periods that most people think it is important to wash hands. However the situation is quite different in other instances such as before preparing food, after cleaning a child's bottom, etc. Figure 3.3 below shows that only 38.7% and 32.9% of female and male teachers respectively would wash their hands before feeding a child. All the female teachers interviewed see the need to wash hands at one time or the other. However 0.9% of the male teachers think there is no need to wash hands.

A significant proportion of pupils also believe in hand washing. Male pupils (93.1%) who believe in hand washing are slightly higher than female pupils (91.3%) who believe in hand washing. Generally, the proportions of teachers who believe in hand washing are higher than pupils who believe in hand washing. Just 11.3% of pupils think there is the need to wash hands after cleaning the house.

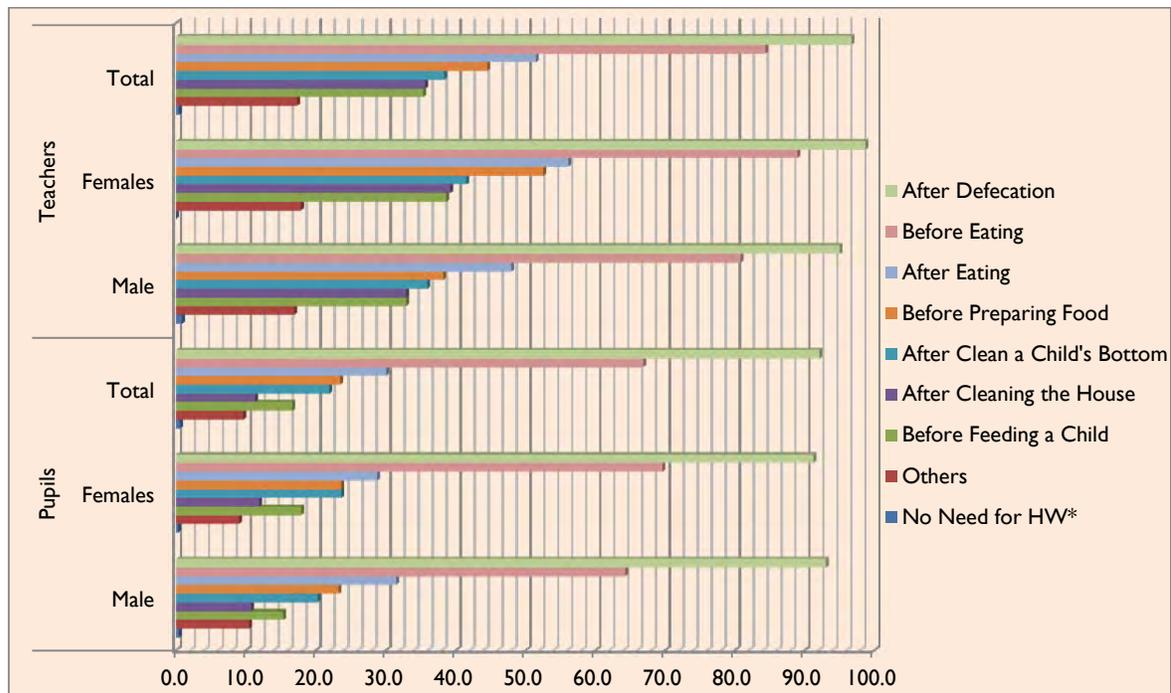


Figure 3.3 Belief in hand washing

When respondents who believe in hand washing were asked about hand washing with soap, 95.2% of the teachers indicated the need to wash hands with soap after defecation compared to 88.9% of the pupils. This is significantly high and only slightly lower than those who believe in hand washing. However a significant proportion of those who believe in washing hands after eating do not believe in using soap. As shown on Figure 3.4, only 56.6% of teachers believe in washing hands with soap before eating, compared to 84.4% who believe in washing hands before eating. This situation is even worse among pupils. Whilst 68.9% of pupils interviewed believe in washing hands before eating, only 30.3% would do so with soap. The situation is much worse on other occasions for hand washing including, before preparing food and after cleaning the house. There seems to be a good level of efforts in educating both teachers and pupils on hand washing with soap after defecation. Most of the “talking walls” depicted this situation. However, a minimal effort is made in educating them on hand washing and hand washing with soap during other occasions such as before feeding the child.

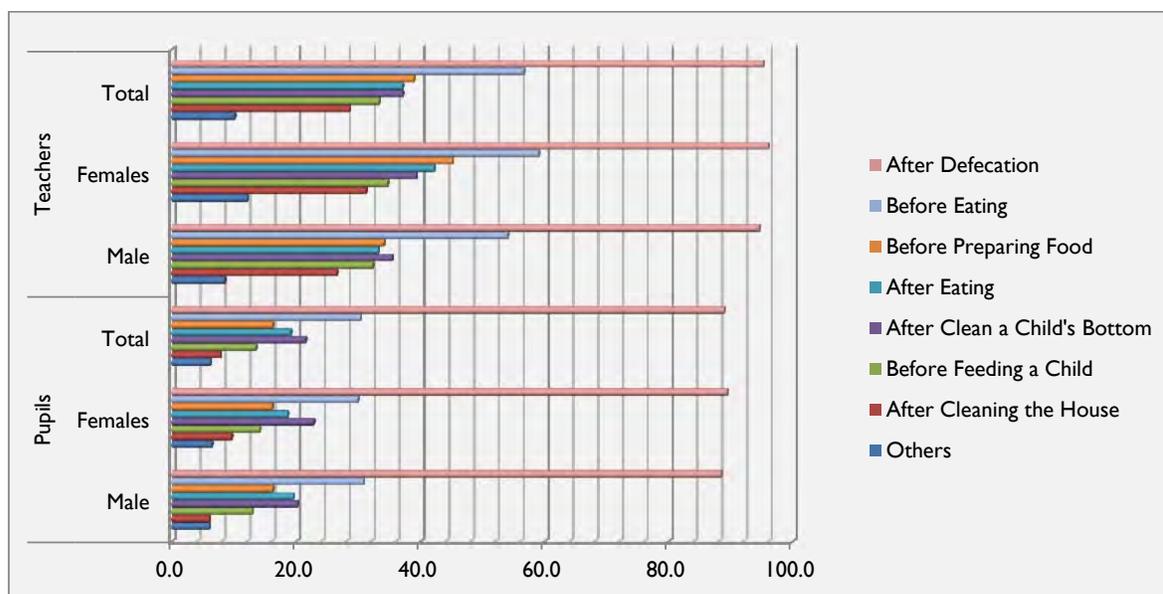


FIGURE 3.4 BELIEF IN HAND WASHING WITH SOAP

### Knowledge of IEC Materials

Both teachers and pupils are quite aware of IEC materials produced by the WASH Project. However, the peer educators and WASH Coordinators are most aware of these materials. About 90.9% of peer educators have seen these educational materials produced with USAID support compared to 70.3% of pupils who are not peer educators. The survey also found that 90.4% of WASH Coordinators are aware of these IEC materials compared to 86.9% and 88.4% of teaching and non-teaching staff respectively.

**Table 3.3 – Percentage of Respondents who have seen IEC Materials Produced with USAID Support**

	Pupils		Teachers		
	Peer Educators	Non-Peer Educators	WASH Coordinators	Teacher's Council	Other Teachers
Have Seen IEC Materials	90.9	70.3	90.4	86.9	88.4
Have Not seen IEC Materials	9.1	29.7	9.6	13.1	11.6

Even though most pupils had seen these educational materials, their levels of understanding of these materials were quite low. Among the peer educators, only 30.7% of the respondent showed excellent understanding of posters produced by the WASH project for education. Some 46.6% of the peer educators also showed a good understanding with only 4.5% showing weak or no understanding of the IEC material. Peer educators, however, showed a better understanding than pupils who are not peer educators. The survey found that 10.6% and 42.2% of non-peer educators had excellent and good understanding of IEC material produced by WASH project respectively. However 19.8% and 8.1% of non-peer educators had weak and no understanding of the IEC materials respectively. Those with no understanding of the IEC materials could not interpret either the talking wall in the school or posters produced for hygiene education by the Project for the school.

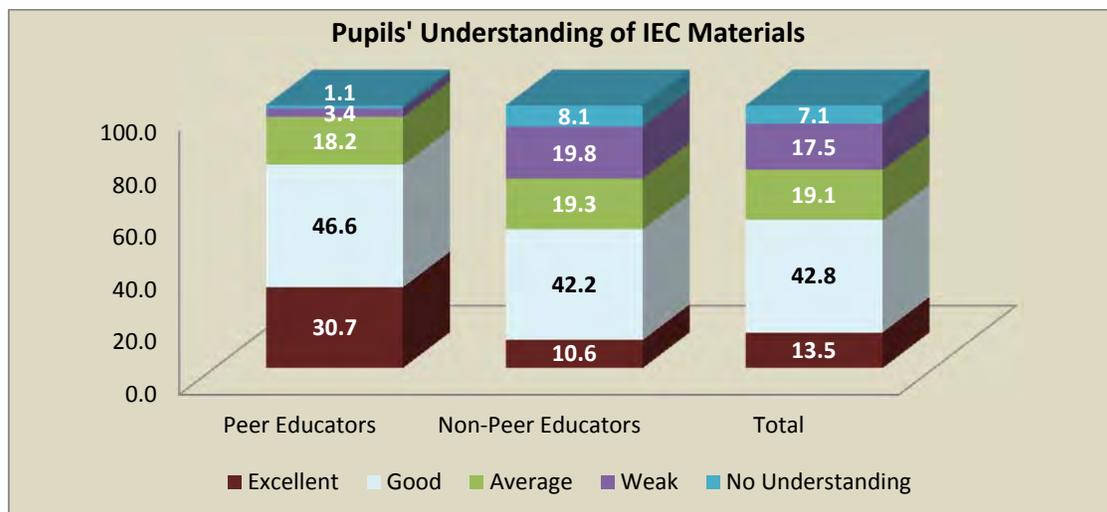


FIGURE 3.5 RESPONDENTS' UNDERSTANDING OF IEC MATERIALS

Generally among pupils interviewed, 13.5% showed excellent understanding, 42.8% were good, 19.1% displayed an average understanding and 24.6% had either a weak or no understanding of the materials produced by the WASH project. Most of the pupils with excellent understanding of the IEC materials are peer educators who have been trained by the Project. However all the schools do not have a plan for the peer educators to educate their colleagues. In most instances the peer educators have limited their activities to supervising the cleaning of the sanitation facilities and ensuring the fetching of water into the hand washing tanks. The knowledge transfer from peer educators to pupils is therefore stagnating.

The level of understanding of IEC materials produced by the project is much higher among teachers than pupils. The WASH Coordinators showed the best understanding of the IEC materials, with about 96.1% showing either an excellent or good understanding of the IEC materials on WASH. None of the WASH Coordinators showed no knowledge of the educational materials.

While most of the members of the WASH teachers council (57.4%) displayed excellent understanding of the educational materials, the non-teaching staff had a significant proportion displaying good understanding and none displaying an average, weak or no understanding of the materials.

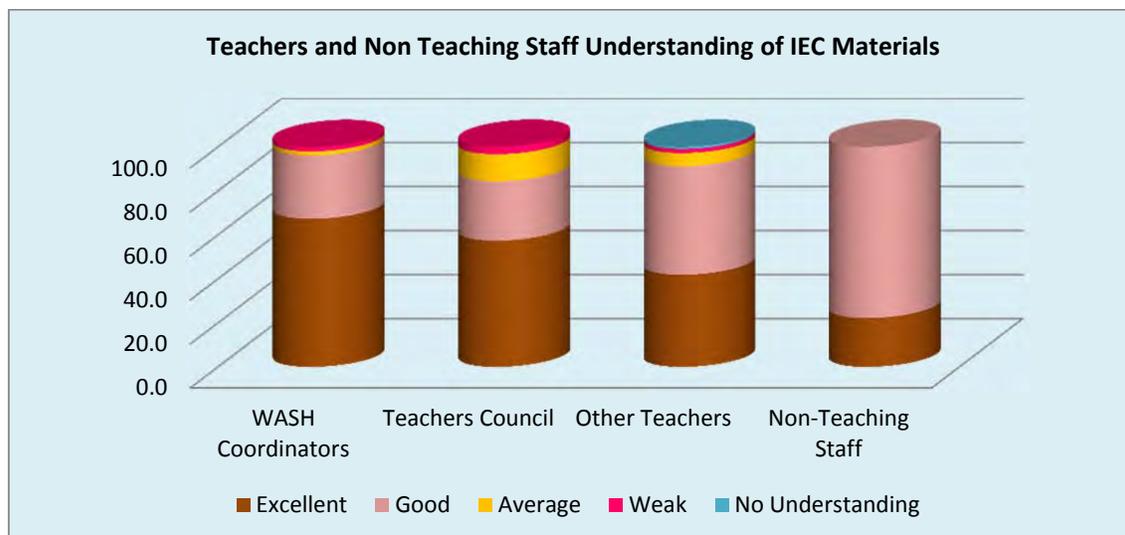


Figure 3.6 Teacher understanding of IEC materials

### 3.1.3 Facility Usage and Incident of Diarrhea Diseases

#### Usage of WASH Facilities

The facilities provided by the project are in high usage by both pupils and teachers. The survey found that about 94.4% of the pupils and 84.3% of the teachers use the latrines provided by the project. Some schools have a latrine and not a hand pump or vice versa and therefore pupils and teachers in such schools could only use what was provided to the school. In some schools, latrines have been assigned for teachers and pupils. In such schools, a teacher may not be using the WASH Project facility because there is an alternative for teachers. This accounts for why some pupils or teachers are not using the facility.

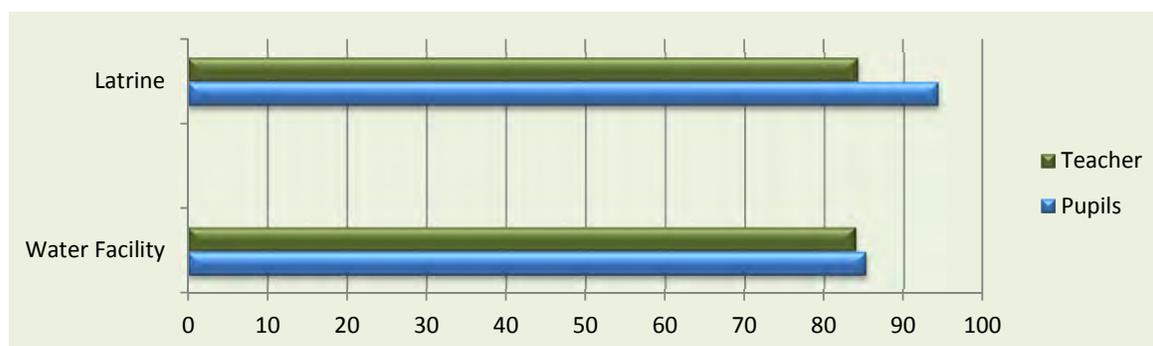


FIGURE 3.7 WASH FACILITY USAGE

The water facilities are equally in high usage, being used by both pupils and teachers as shown in Figure 3.7. About 84% of the teachers and 85.3% of the pupils rely on the water facility provided by the project. This high usage by both pupils and teachers underscores the contribution of the project to education in Northern and Muchinga Provinces.

#### Incidence of Diarrhea Related Cases

The WASH project targeted reducing the number of diarrhea related cases in a two-week period within the operational area by 20%. The project's performance monitoring, however, did not indicate the baseline. The Project team indicated that they did not capture this data in a statistical manner (neither did the project capture baseline information on this issue) but used a qualitatively approach to interview selected teachers and pupils. The evaluation found that about 15.1% of pupils'

surveyed had experienced diarrhea related diseases in the last two weeks preceding the survey. Also 18.2% of the pupils surveyed indicated that their family members experienced diarrhea in the last two weeks preceding the survey.

	Pupils	Pupils Family	Teachers	Teachers Family
Yes	15.1	18.2	9.3	15.1
No	84.9	81.8	90.7	84.9

A lesser proportion of teachers (9.3%) experienced diarrhea as compared to pupils. About 15.1% of Teachers surveyed also indicated that their family members had experienced diarrhea in the last two weeks preceding the survey.

### 3.1.4 Quality of Education

#### Learners' Ability to Read

Reading ability of learners from grade 4 to grade 9 was generally poor with only 30% able to read the English text book of their grade level fluently. About 22.9% are able to read with difficulty, mispronouncing or not able to pronounce some word in the text book while 16.0% had weak reading skill, not being able to pronounce most of the words in the text book. Some 31.1% however could not attempt to read the GRZ approved English text book for their respective grade.

Pupils in urban schools could read better than those in rural schools. In the urban schools, 50.0% could read fluently compared to 26.4% of their colleagues in rural schools. The urban environment and access to educational resources could be a contributing factor.

The result on Table 3.5 further shows that reading ability in community schools is very poor. While 31.3% of pupils in government schools could read their English text books fluently; only 3.4% of pupils in community schools could do so, with a large proportion (72.4%) of pupils in community schools not able to read anything in their English text book compared to 29.1% of government school pupils.

Standard	Locality Type		School Type		Gender	
	Urban	Rural	Government	Community	Girls	Boys
Good	50.0	26.4	31.3	3.4	26.0	34.1
Average	20.2	23.2	23.3	10.3	24.4	21.0
Weak	12.8	16.7	16.2	13.8	16.4	15.7
Poor	17.0	33.7	29.1	72.4	33.1	29.2

Boys from grades 4 to 9 proved to be able to read better than their girl classmates. While some 34.1% of boys could read fluently, only 26% of girls could do the same, with 33.1% of girls and 29.2% of boys not able to read anything.

#### ***WASH Project Impact on Reading Ability***

The evaluation found that Pupils in schools that benefited from the WASH project in Phase I (enjoying its benefits for the past four years) are able to read better than pupils in schools that are benefiting now from the project.

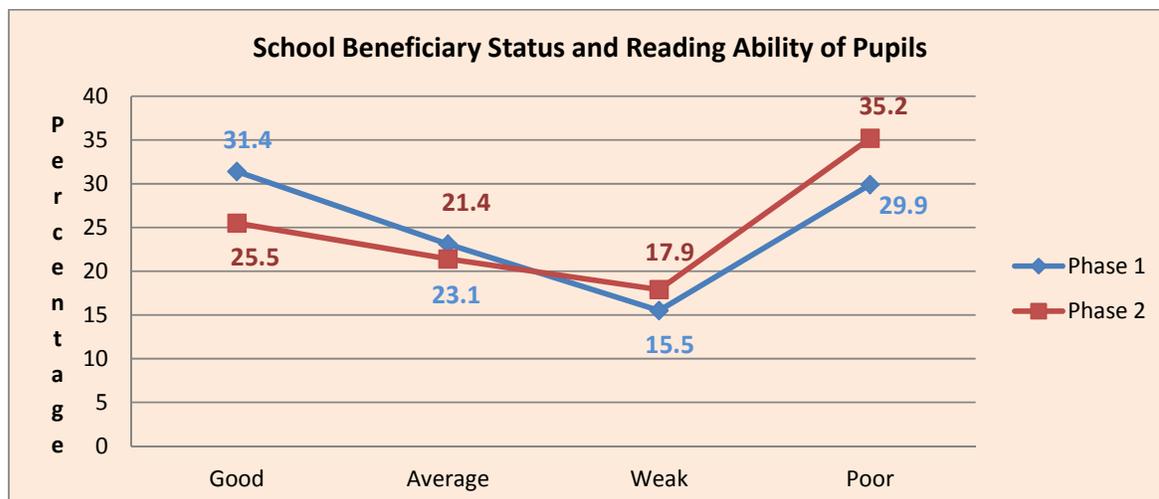


FIGURE 3.8 - PHASE OF BENEFIT AND READING ABILITY

The results on figure 3.8 show that 31.4% of Phase 1 beneficiaries could read the English text book fluently, compared to 25.5% of Phase 2 beneficiaries, while, on the other hand, 29.9% and 35.2% of Phase 1 and Phase 2 beneficiaries respectively could not read anything in the English text book. Phase 1 students will have been beneficiaries for at least one year, whereas Phase 2 students will have been beneficiaries for at most one year. This indicates that other things being equal, students with access to WASH facilities read better than students who have negligible or no access.

Figure 3.9 documents that, other things being equal, the longer that students have access to WASH facilities, the better their English reading skills. As shown above, 35.5% of pupils in schools that benefited from the WASH project in 2010 could read fluently as compared to 28.1%, 23.6% and 8.3% for 2011, 2012 and 2013 beneficiaries respectively. This is particularly evident in comparing the results for Phase 1, whose beneficiaries had WASH facilities for at least one year, and for Phase 2, whose beneficiaries would have had access for at most 16 months.

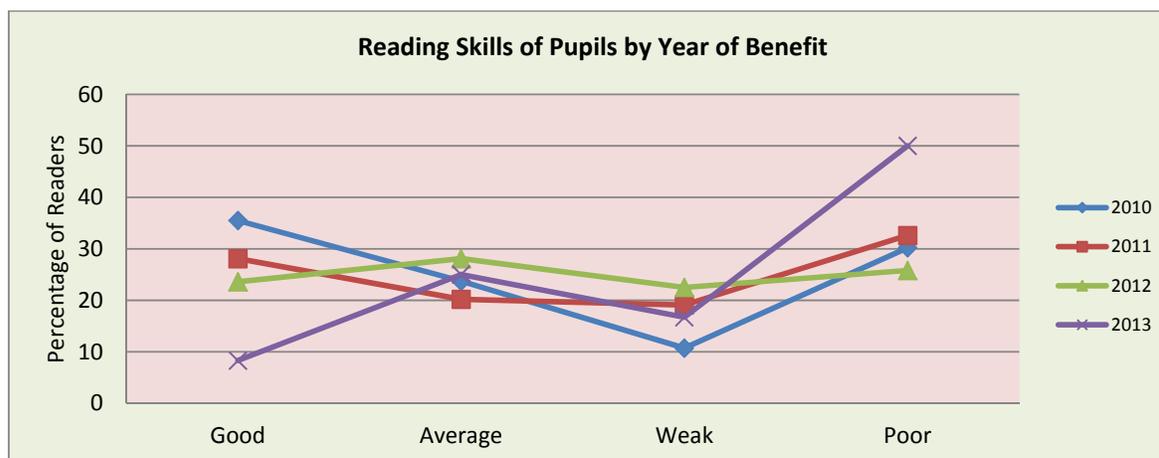


FIGURE 3.9 – PUPILS' READING SKILLS

While the provision of WASH facilities has improved reading skills, the project target of enabling grade 5 pupils to demonstrate the ability to read is far from being achieved. As shown on Figure 3.10, only 13.2% of pupils in grade 5 are able to read fluently with an additional 18.2% reading with difficulty. The diagram shows a strong relationship between grade and quality reading skills with grade 9 pupils being able to read better than grade 8 in that order. However, only 58.1% of pupils in grade 9 are able to read fluently.

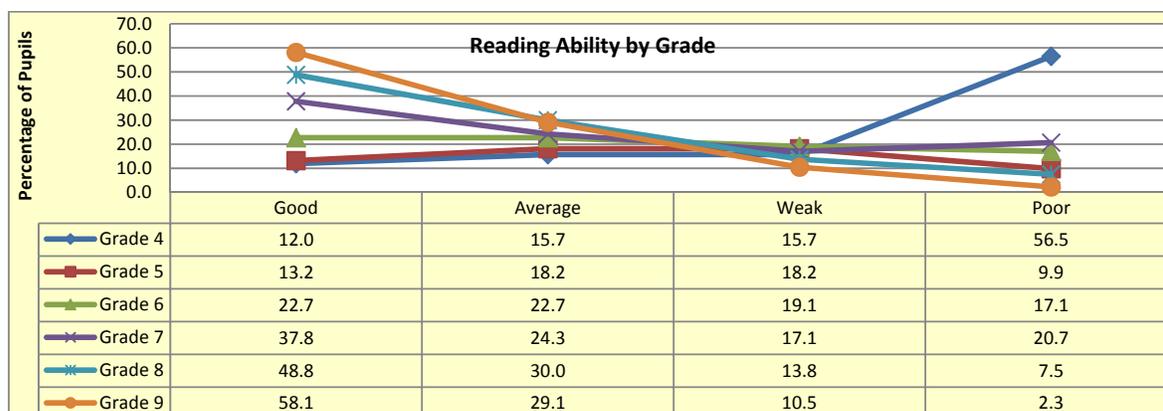


FIGURE 3.10 PUPIL READING ABILITY

## 3.2 INNOVATIVE WASH TECHNOLOGY

The project introduced some innovative technologies in the water and sanitation sectors. Most of these innovative technologies were aimed at improving effectiveness or efficiency. Among the technologies introduced by the WASH project are; hand washing tanks, bolt taps, push and lift pump, manually drilled borehole, and spring protection.

This section of the evaluation report presents findings on the level of functionality, responsiveness of beneficiaries to innovative technologies and factors that enables these technologies to function and barriers to utilizing the technologies/approaches.

### 3.2.1 Level of Functionality

#### *Sanitary Facilities*

In the latrine category, the project implemented a number of already known and established technologies including traditional VIP, ablution blocks, and integrated latrine. However, to improve effectiveness on hand washing, the project also introduced the hand washing tanks and the bolt taps as innovative technologies. Figure 3.11 below shows the condition of each of these technologies as established by the evaluation.

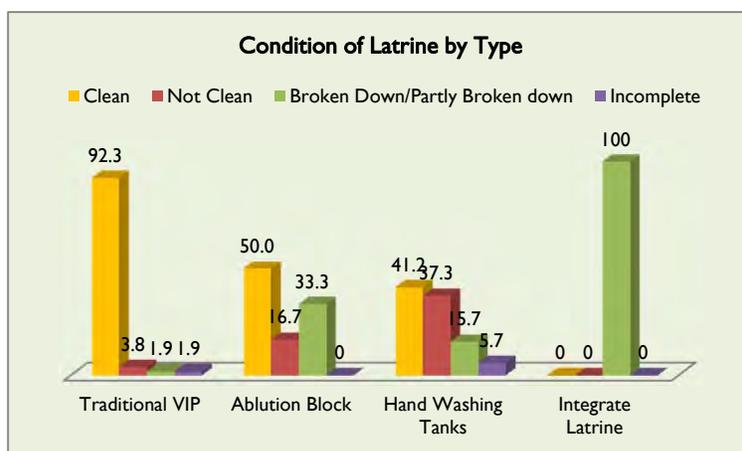


FIGURE 3.11 CONDITION OF LATRINES BY TYPE

#### *Hand Washing Tanks with Bolt Taps*

This innovative technology is highly appreciated by users for being durable and appropriate for schools and for encouraging hand washing especially as they are located close to the toilets. The schools with peer educators were able to use duty rosters to share responsibilities for refilling of water. However some 37.3% of these tanks were found to contain visibly dirty water. Most of those containing dirty water had no lids. Others

had lids but the pupils found it difficult to pour water into it, and in the process poured the water onto the lid, washing the dirt from the top of the lids into the tank. About 15.7% of the tanks were also broken down and not in use. The most common part to break down is the bolt tap. Other reasons for the Tank's break down include leakage of tank due to poor workmanship which may have been caused by poor or lack of supervision during construction; and no top cover and small

inspection chamber cover on the tank which led to dirt/leaves falling into the tank and thence clogging the outlet to the bolt tap

The bolt taps were introduced as an innovation to resolve initial challenges faced by the garden taps. Those garden taps made of copper fell prey to theft. Another challenge posed by the garden taps is that they have very high volumes of water flowing when the tap is opened. This meant that the water in the tank easily runs out, requiring the tank to be filled four to five times in a day. To resolve these challenges of the garden taps, the project innovated the bolt tap which trickled the water and was not attractive to thieves since it is made of iron. The technology was locally designed and manufactured in Kasama, serving as a source of income for some locals. However this technology was found not to be durable and easily corrodes, resulting in the breakdown of most of the hand washing tanks. The project had realized the ineffectiveness of the bolt taps and had started replacing them. However the evaluation found that 15.7% of the tanks were still broken down. Apart from the lack of durability of the bolt taps, tanks with them could also not be repaired when they break down. The only alternative therefore is to chisel them out and fix a new one. The evaluation further found that some 5.7% of the tanks were either not complete (mostly without lids or not plastered) or were still under construction.

### ***Integrated Latrine***

The Project constructed four Integrated Latrines in two schools, the Musa Basic School in Kasama and Sabwa Primary School in Mpika. The latrines are highly used with a toilet:pupil ratio estimated at 1:64 on average. Each of the integrated latrines had parts broken down even though they are still in use. The idea was reported to be good in that the latrines include washrooms for girls and urinals for boys as well as water tanks and/or rain water harvesting facility, have grill doors and/or doors and hand washing basins. The latrines are liked by pupils because they are roomy with smooth surfaces both on the floor (allowing pupils to easily mop the floors) and on the walls. However the design had some flaws. The toilet drop holes had no standard size and were cemented around restricting the flow of waste water and contributing to spillage of urine on the floors. In addition, the latrines rely on push and lift pumps, whose functionality cannot always be guaranteed. The washrooms are opposite the toilets and therefore older girls feel shy using them when younger ones are around. The wash rooms should have been hidden from the toilets. The floors also do not slope towards the drop holes to allow waste water and urine to flow into the pit. Instead they allow waste water to stagnate in some parts, making them unhygienic. Moreover, the vent pipes are positioned in front and not in the direction of the sun. VIP latrines have often been designed with the ventilation pipe facing the direction of the sun. The purpose of locating the ventilation pipe on the sun-facing side (northern wall in the Southern parts of Africa) is to allow a quick flow of degraded and warm air from the underground pit to move upwards from the pit latrine through, up and out of the vent pipe. Cooler air moves through the drop hole, the pit and gets sucked up the vent pipe as a draught (draft) is caused when cool air passes over the top of the vent pipe. Warm air is displaced by cooler air. With the design of the integrated latrine, this was not taken into consideration. Also the construction was poor and some of the materials used were also of poor quality. For instance, the pipes connecting water to the sinks are of poor quality and have developed several leaks on the supply line. These have contributed to compromising durability of the integrated latrines. Sometimes the latrines would have no running water, as is the case at Sabwa Primary School, where the push and lift pump has not been functioning since December 2012, making use of washrooms by older girls during their periods of menstruation inconvenient. These challenges have rendered functionality and cleaning of the integrated latrines challenging.

### ***Water Facility***

In the water sectors, the project continued with the construction and renovation of some already established technologies. Prominent among this is the conventional borehole and hand dug wells. However the project improved on these established technologies to develop the push and lift hand

pump. The project further introduced the manually drilled borehole and spring protection as efficient alternatives to the conventional boreholes and hand dug wells.

### ***Push and Lift Pump***

This system was found to be effective and reliant upon the hand pump. The schools see the technology as the best source of running water, particularly for sanitary use in schools where there is no piped water system and for supplying drinking water to teachers living in the school compound. As such schools have developed rosters for ensuring that adequate water is pumped into the tank for toilet, bathing and hand washing use in schools' sanitary facilities. The survey, as shown on Figure 3.12 found that 58.3% of all the push and lift

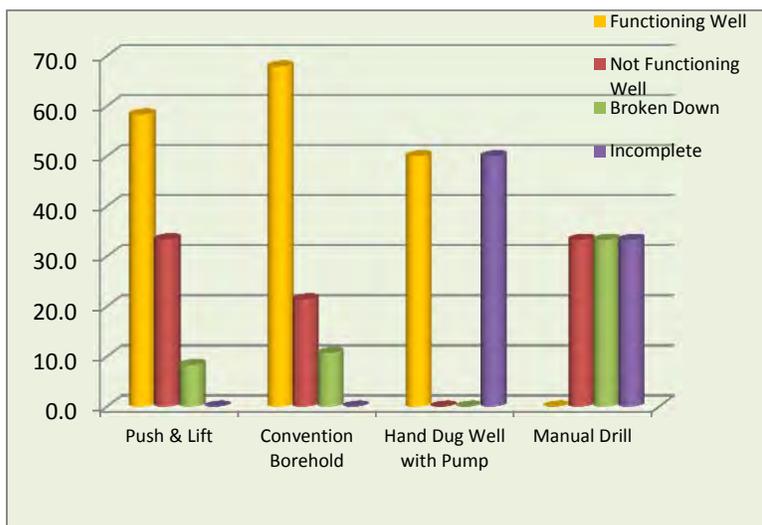


FIGURE 3.12 CONDITION OF WATER FACILITY

pumps inspected were functioning very well. Some 33.4% were, however, not functioning very well. The major problem with it is faults related to the hand pump. In some cases the rubber sealing the pump spout to enable water climb into the overhead tank has spoiled and therefore schools have to improvise to seal the spout and force water into the push and lift tank. Some 8.3% of the push and lift pumps had their India Mark II pump broken down, therefore making the entire system inoperable. Most of the limitations found on this technology are related to the hand pump than the push and lift technology.

### ***Manually Drilled Boreholes***

All the manually drilled boreholes inspected during the evaluation had dried up. It was established that this facility is usually 20 meters deep and their functionality depends on the season. Generally most of them dry up during the dry season. The manually drilled facilities are efficient to drill in non-rocky soil formations compared to conventional boreholes. They are labor-intensive to install but do not require highly experienced labor. Manual drilling is a practical solution for wells up to 20 - 40 meters deep in alluvial soils or soft rock formations.<sup>9</sup> Even so, the manual rotary jetting method can be extremely labor-intensive and requires 12 to 15 unskilled laborers to keep it operating continuously. At least one skilled driller is required to contend with caving sand and the drilling fluid mud mixtures. The total time typically required for completion of a 30-61 meters bore well is 4 to 5 days.<sup>10</sup> Apart from drying up in most places seasonally, the process of drilling comes to a halt whenever the drilling hit a rock. Since it is manpower dependent, the drilling team must abandon any site when it hits a rock irrespective of the depth of the hole. It is very rarely feasible to bring in drilling equipment to continue the work.

### ***Spring Protection***

This innovation is functional and is providing safe water to pupils and teachers. The technology was inspected in Chilonga Basic School in Mpika district and was found to be working very well. This innovative technology has not shown any limitation since it was constructed for the school. The

<sup>9</sup> Source: Financing Options for Low-Cost Well Drillers & Communities for Rural Water Supply (UNICEF, 2010).

<sup>10</sup> Appropriate well drilling technologies: A Manual for Developing Countries, Office of Health Development Support Bureau – USAID, 1978

facility has its pipe laid across the teachers' quarters to the schools, thereby providing water to both the teachers for domestic use and the school for WASH usage.

### 3.2.2 Responsiveness of Beneficiaries

After schools are selected to benefit from the project, they are then required to contribute some materials referred to as “upfront,” before the construction of the facility at the school. The upfront materials required generally included river sand, building sand, bricks, crushed stones, and soak away stones. The mobilization of these materials was to ensure that the facilities are demand driven and owned by the schools. However, most schools faced challenges mobilizing these materials. The schools required the help of community members in mobilizing these materials; however most communities failed to support resulting in the difficulty of gathering the upfront materials. The PTA members interviewed indicated that community members failed to support the schools because of poor mobilization of communities by the WASH Project.

The schools are responsible for using the facilities and cleaning them. Most of the schools, especially those with WASH committees have developed a roster for filling the elevated tank from the push and lift pump as well as the hand washing tanks, cleaning the latrine and surroundings of all the facilities.

However, these schools do not own the facility when it comes to repairs. When the facility breaks down, the schools look to DAPP to fix it even when it is within their ability to fix. This is because these schools do not see it as their responsibility to manage and sustain the facility. This is a major challenge. All the 15.7% of hand washing tanks broken down had problems with the bolt taps; however, the schools were waiting for DAPP to change the taps rather than taking ownership and fixing them for their use. Various reasons were ascribed to the failure of schools to fix the broken down facilities. Some schools found it hard to get an Area Pump Mender (APM) nearby but sometimes from as far as 30Km away. More, as is often the case, no one in the local community/ village is trained to conduct small Operation and Maintenance (O&M) activities. An APM covers a large area in his/her duties to support communities with O&M activities. Also schools have no O&M funds reserved for repairs. This makes it difficult to pay the Area Pump Mender (APM) transport, spare part and repair costs. In one given case, a school community was asked to pay Kw 100.00 for repair and rubber seal in addition to Kw 30.00 transport fee to enable APM travel from his location to the school in Chilubi District. Moreover even when money was found, spare parts are very difficult to find. In most cases the APM has to travel to Lusaka to acquire these parts.

### 3.2.3 Enablers to Innovative Technologies

Each of the innovative technologies introduced by the WASH project functions effectively within certain environments or is aided by some factors to thrive. These enablers are discussed according to the innovative technology under consideration:

#### ***Push and Lift Pump***

The push and lift pump is labor intensive, requiring a lot of energy to pump and fill the elevated tank. To ensure consistent supply of water into the tank, there is the need for an organized environment. The schools therefore provide such organized environment with duty rosters that ensures that responsibility is assigned to pupils in filling the tank regularly.

#### ***Hand Washing Tanks and Bolt Taps***

The hand washing tanks required regular supply of water to make its use meaningful. Most of the schools with these hand washing tanks have water, providing the enabling environment for continuous supply of water into the tank. Further the construction of these tanks for organized community like schools entails that pupils are assigned to fill the tanks to ensure that the tanks never run out of water. The bolt taps are also locally manufactured and therefore highly accessible.

#### ***Manually Drilled Borehole***

This technology also used local materials. The materials used in this technology are widely available and less costly. The technology requires very few skilled personnel and could use unskilled labor to supplement the efforts of the few skilled labor. Further this technology is workable in areas where there are no rocks since the drilling has to be relocated whenever they hit a rock.

### ***Spring Protection***

This is a technology that is largely dependent on nature. There is need for a spring before the approach could be implemented. Since it may be very difficult to construct a spring, the natural existence of a spring is not just an enabler but a prerequisite. Another enabler is the geographic location of the spring and point of beneficiary. Since the water has to flow by gravity, the topography must ensure that the spring is higher and upstream and the beneficiary downstream to ensure the flow of water.

### ***Integrated Latrine***

There is the need for a functional water source (push and lift pump) with consistent/reliable supply of water to the latrines contributes to effectiveness functionality of integrated latrines as well as to hygienic use. In addition, the schools need effective O&M systems and O&M funds are vital to sustainability of integrated latrines. Schools need to be prepared well in advance as to O&M commitments. Also having girls washrooms not only included but also well positioned (hidden from the toilets) is critical to making integrated latrines friendly to girls and can motivate the girls to use the latrine.

## **3.2.4 Barriers to Innovative Technologies**

The successes of these innovative technologies have not been without challenges. Some of the limitations of the innovative technologies are:

### ***Push and Lift Pump***

The push and lift is labor intensive and requires a lot of efforts to fill the overhead tank. The hand pump can lift 375ml water per stroke or 15lt water per 40 strokes completed in 1 minute to a tank up to 6M above ground from a well with a static water level of between 20-40M. This means that an adult person is required to perform 2,666 strokes over a period of 66 minutes or approximately 1 hour 6 minutes continuously to fill a 1,000lt<sup>11</sup> capacity tank 6M above ground level. With these facilities provided to basic schools, it would require more time for these young pupils to pump the required volume of water. Further, the technology is largely dependent upon the hand pump; therefore any limitation of the hand pump affects the performance of the technology. A breakdown of the hand pump means the technology malfunctions. The 20% of push and lift that were found through inspection not to be functioning well and the 10% that were found to have broken down were all connected to the hand pump.

### ***Hand Washing Tanks and Bolt Taps***

The taps posed the biggest barrier to this technology. The initial use of garden taps posed a challenge to the effective use of water. Due to the flow of the water from such taps, the schools needed to be filling the tanks regularly. This challenge was worsened by the incidence of theft of these garden taps. The bolt taps that were introduced to resolve this challenge also came along with its own barriers that are more limiting than the garden taps. The bolt taps made of iron, easily corroded, polluting the water and breaking down in a short while. They are also not repairable, requiring replacement whenever they breakdown.

### ***Manually Drilled Borehole***

Whiles this technology is cost effective in comparison to other alternatives, the technology is manually dependent and not flexible. This means when the drilling hits a rock, the entire site must be abandoned and another location identified, wasting all the resource that had been sunk into the

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<sup>11</sup> About the amount of water required for a day's use.

initial drill. It also requires accurate hydrogeological survey and siting to ensure that the location is suitable for the drilling technique.

### ***Spring Protection***

Spring protections are nature dependent and leave very little room for maneuvering. This makes it impossible to be constructed at will and in every desirable location. The prerequisites of having a spring and the topography of the terrain are the major barrier to this technology.

### ***Integrated Latrine***

One of the main barriers to integrated latrines is the high construction and maintenance cost which can negatively affect its sustainability and can limit access to just a few people but at a high cost. Another barrier is the limitations on design of the integrated latrine such as the design of the slaps, position of the wash rooms and the location of the ventilation pipe which hinders the quality of delivery of the integrated latrines. Finally the absence of O&M system in the schools is a very major barrier. With such comprehensive system, any defect on the water supply system or the latrine system malfunctions the effectiveness of the entire system. This therefore requires that schools maintain an effective O&M system to ensure the entire integrated latrine system functions continually.

## **3.2.5 Best Practices**

### ***Talking Walls in Schools***

The talking wall is an art work portraying good hygiene behaviors that should be adopted by the pupils in the school. Most of them portrayed hand washing with soap after defecation. They are mostly drawn on the school block close to the hand washing tank. The talking wall is one of the best practices identified by the evaluation. These talking walls serve to position hygiene practices in the minds of the people. They are therefore effective complements to the sanitation facilities provided to the schools. The talking walls were found to be reminders to pupils on the need to practice various hygiene practices.

### ***Position of Hand Washing Tanks***

The hand washing tanks are all located right in front of the latrines. This location ensures that everyone coming out of the latrine is not only presented with the opportunity to wash his/her hands but is actually reminded to do so. Pupils using this facility could build a practice before leaving the school and could extend this practice to their homes.

### ***Presence of WASH Committee***

The formation of the WASH committees in schools is another best practice. The WASH committees have a primary responsibility of educating their peers on various hygiene and sanitation practices. However, the responsibilities have mutated into ensuring that the facilities function effectively. These include developing rosters for pupils to fill the hand washing tanks, ensuring that water is pumped into the overhead tanks in the push and lift systems, and ensuring the cleaning of the surroundings of the facilities.

## **3.3 REPLICATION AND MANAGEMENT BY LOCAL INSTITUTIONS**

The effectiveness of the innovative technology approaches being replicated in other geographical areas and the ability of local stakeholders to effectively manage and sustain them is discussed under this section. The findings have been classified into viability of replication in other geographical areas, current operation and maintenance of the facilities, the ability of local institutions to access spare parts for maintenance and whether the current approach can sustain the facilities.

### **3.3.1 Replication of Technologies and Activities**

The survey of both teachers and pupils overwhelmingly support replicating the project in other geographical areas due to its immense benefit. About 98.5% of respondents who are teachers think the project should be replicated. The pupils likewise think the technologies should be replicated in

other schools, recording a 96.1% approval rate as shown on Figure 3.13 For any technology to be replicated there is need to consider its effectiveness and efficiency. Some may be replicated but not all.

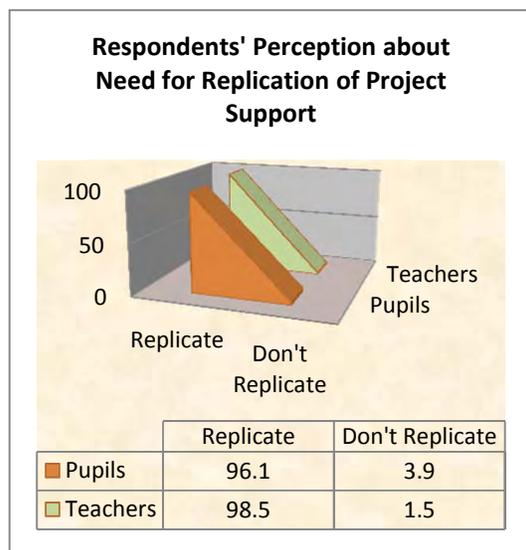


FIGURE 3.13 - PERCEPTION ON NEED FOR REPLICATION OF PROJECT SUPPORT

#### ***Push and Lift Pump***

This technology was found to be very effective despite its limitation of being labor intensive. The technology can also be replicated in any area with a water table high enough for any borehole to function.

#### ***Hand Washing Tanks and Bolt Taps***

Hand washing tanks can be replicated everywhere. As per the current design, they are best positioned close to the latrine. The bolt taps can also be replicated everywhere without difficulty. However due to the challenges with the bolt taps, it is not recommended for replication.

#### ***Manually Drilled Boreholes***

Manually drill boreholes are good for replication because of their cost effectiveness. However, they can only be replicated under two conditions. First, they would work in areas where the water table is

high since its depth is just about 20 meters. Secondly, they require an area with few rocks because when the drilling hits a rock, the drilling team has to abandon the initial well and start a new one.

#### ***Spring Protection***

Spring protection also requires the fulfillment of two conditions. First, there should be a spring. Since a spring cannot be constructed anywhere, it cannot be replicated in areas where there are no springs close by. Secondly, there is need for suitable topography where the spring is on a higher level than the beneficiary community. This would enable the harnessed spring water to flow by gravity to the beneficiaries.

#### ***School WASH Committees***

The school WASH committees have been effective in ensuring the cleanliness of the WASH facilities and its surroundings. The committees are also contributing significantly in enhancing the knowledge of pupils on hygiene and sanitation. This committees can be replicated in other schools by the local institutional framework, including schools that have not received WASH facilities as project support.

#### ***Talking Walls***

The talking are also contributing significantly in positioning various hygiene practices in the minds of pupils. This approach does not require any much effort to sustain. This approach is simple and can be replicated in other schools with very little effort from the local institutions. This approach can also be used to promote other positive behaviors in addition to hygiene and sanitation. Some additional areas that could benefit from the talking wall approach include malaria, nutrition, HIV, and cultivating reading habit. However, in using this approach, the local institutions would require advice from behavior change experts to ensure they do not position negative behavior.

#### ***Integrated Latrine***

In terms of replication, the high cost of construction both in terms of upfront contributions and project supported inputs as well as high maintenance costs (need to replace taps, broken pipes) make it difficult to replicate and challenging to sustain. Absence of O&M funds in all schools visited despite visible broken pipes and taps confirmed this challenge. The manual water system is also labor-intensive. According to one head teacher, it takes pupils approximately 2 hours of learning

time to pump water that lasts for a day. Several design flaws also needs to be fixed before it can be considered for replication.

### 3.3.2 Operation and Maintenance

There is no Operation and Maintenance (O&M) fund established in schools. In all cases, individual households that use the water points at schools do not pay user fees and therefore the school has not set aside funds for the servicing and repairs of the facility. Most schools relied on Parents and Teachers Associations (PTA) funds and grants from the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE) to pay for the maintenance of the water facilities.

Since the schools have no funds for O&M, they rely on DAPP and in a few cases District Councils to provide spare parts for maintenance. Schools are also reliant on the few Area Pump Menders (APMs) and Latrine Masons trained by DAPP to maintain their facilities. However, these APMs and Latrine Masons mostly reside very far from the schools. This has resulted in situations where the average time for fixing a broken-down water facility is two weeks. Further, APMs charge as much as KR 300 for labor to carry out minor repairs due to the distances they travel to the schools.

All 52.9% of schools who have active WASH committees have a roster for cleaning and maintaining a clean environment around the water facility and at the latrine. PTA members of two of these schools (out of the 106 schools visited) had assigned a member of their community as water point Caretakers to clean and control the use of the water facilities.

According to the monitoring and evaluation plan, the WASH project was to establish 12 spare parts outlets. However, none of those outlets have been established. DAPP had organized stakeholders meeting to establish sustainable operation and maintenance program (SOMAP) shops in Northern and Muchinga Provinces. According to the DAPP proposal, District Councils are expected to establish these spare part outlets; however, none have been established.

APMs interviewed indicated that they are aware the District Councils has stocked some Indian Mark II spare parts in their storerooms which they sell to APMs. However the prices of the parts are found to be outrageous. According to one APM, an IM II cylinder assembly which costs about KR300 in Lusaka is sold by the District Council at KR 1,000. This over-pricing makes the APM to prefer travelling to Lusaka to purchase the parts than buying from the District Council.

APMs in some Districts do not know where to get spare parts and often require the schools to procure the spare parts for them to fix the water facility. Since the schools also do not know where to access these spare parts, most of them ask the WASH Project for the spare parts before the APMs could fix the water facility. The situation has contributed to delays in fixing water facilities when they break down.

### 3.3.3 Sustainability

The sustainability of various facilities, structures and systems provided or established by the WASH Project is discussed in line with the facility or approach. These findings on sustainability are not limited to the innovative technologies but all facilities provided by the project.

#### *VIP Latrines*

The VIP Latrines are robust and enforced with iron beams. Initial constructions adhered to the MOESVTEE standard of two layers from the foundation to the roof. However, subsequent designs used single layers at the upper part of



FIGURE 3.14 CURRENT STATE OF MIKUWE BASIC SCHOOL CLASS-ROOM BLOCK

the latrine rather than the double layers required by MOESVTEE. That notwithstanding, the latrines are robust and may last to serve its purpose.

The VIP latrines are constructed without doors, making some girls and teachers shy from using it. VIP latrines have been provided to some schools that have no class-room block. In such schools, the VIP latrine is the only decent building. Such facilities stand the risk of being abandoned if the school collapses.

#### ***Ablution Blocks***

The Ablution Blocks are constructed to standard specifications. The sustainability of the ablution blocks is, however, dependent upon the water supply since that is a major feature of the latrine. The quality of construction is however high and likely to last to serve the purpose. The ablution blocks are mostly constructed in urban communities.

#### ***Hand Washing Tanks with Bolt Taps***

The hand washing tanks constructed with bricks and cement are very strong and do not require any extra attention to sustain it. However the bolt taps are corrosive and less durable. There would therefore be a challenge with sustaining the bolt taps.

#### ***Push and Lift Pumps***

The push and lift technology requires very little attention to sustain it. However, its dependence on the hand pump means sustaining the hand pump as well. With the current state of management of these facilities in schools, there are some concerns with ownership and responsibility as well as access to spare parts in sustaining these facilities.

#### ***Conventional Boreholes and Hand Dug Wells***

Both the conventional boreholes and hand dug wells are dependent upon the hand pump. However, the Indian Mark II hand pumps have certain basic parts that easily wear out. The absence of spare parts outlets to assess these is a threat to sustaining these water facilities. Further, the schools are not contributing to the O&M funds in advance and that delays the rate of repairs of these facilities. These constraints could challenge the sustainability of the water facility.

#### ***Manually Drilled Boreholes***

Manually drilled boreholes depend on ropes which are easily accessible and therefore the schools can purchase these parts to fix whenever the facility breaks down. However, they would be sustained by the schools if they were drilled in an area with high water table to ensure continuous flow of water all year round. In situations where the facility supplies water seasonally, the beneficiaries may become discouraged and this may lead to apathy of usage which can result in eventual abandoning of the facility.

#### ***Spring Protection***

Spring protections are durable and would not need any extra attention to sustain them. The facilities that need care under this technology are the tubes/pipes and taps used to channel the water. These facilities are however durable and needs very little care.

#### ***Integrated Latrines***



FIGURE 3.15 VIP LATRINE PROVIDED TO MIKUWE BASIC SCHOOL BY THE PROJECT

The sustainability of the integrated latrines cannot be guaranteed since there are no school based O&M systems for latrines and apparently none of the schools have O&M funds. Moreover without adequate sensitization on handling, proper use and prevention of vandalism as well as poor workmanship and high levels of use, durability of the facilities is not only compromised but will also attract high maintenance costs which schools are not ready to meet, especially that the schools need to equally ensure that the water points (push and lift pumps) are also well maintained to supply adequate water to the latrines.

### School WASH Committees

The role of the school WASH Committee is highly significant in managing and sustaining the facilities and deriving all the intended benefits. However, with 40.9% of beneficiaries not having such committees and a further 6.2% of beneficiaries not being able to strengthen their WASH committees, the sustainability of these are in doubt. Some schools explain that the committees get weaker as the pupils who are members of the committee graduate. Schools need to develop a system that shall ensure that graduation does not affect the effectiveness of the committees.

### Talking Walls

The talking walls are self-sustaining. Oil paint is used in most of the drawings and these could remain on the walls for several years. This approach therefore does not require much attention from the schools to sustain.

## 3.4 LINKAGE BETWEEN WASH FACILITIES IN SCHOOLS, SCHOOL ATTENDANCE AND TEACHER RETENTION

In establishing the linkage between the provision of WASH facilities to schools and school attendance two methods were used to ensure the conclusion is accurate. First there is a trend of pre project and post project analysis and second, a comparison of beneficiary schools attendance rates and none beneficiary schools attendance rates. Further, to establish the relationships between provision of WASH facilities to schools and teacher retention, a trend of average number of teachers in beneficiary schools is traced over a eight-year period.

### 3.4.1 Linkage between WASH Facilities and Pupils Attendance

The attendance records of schools indicate a positive relationship between provision of WASH facilities and pupils' school attendance. As indicated on Figure 3.16, there seems to be a constant attendance rate in the three years preceding the provision of the facilities.

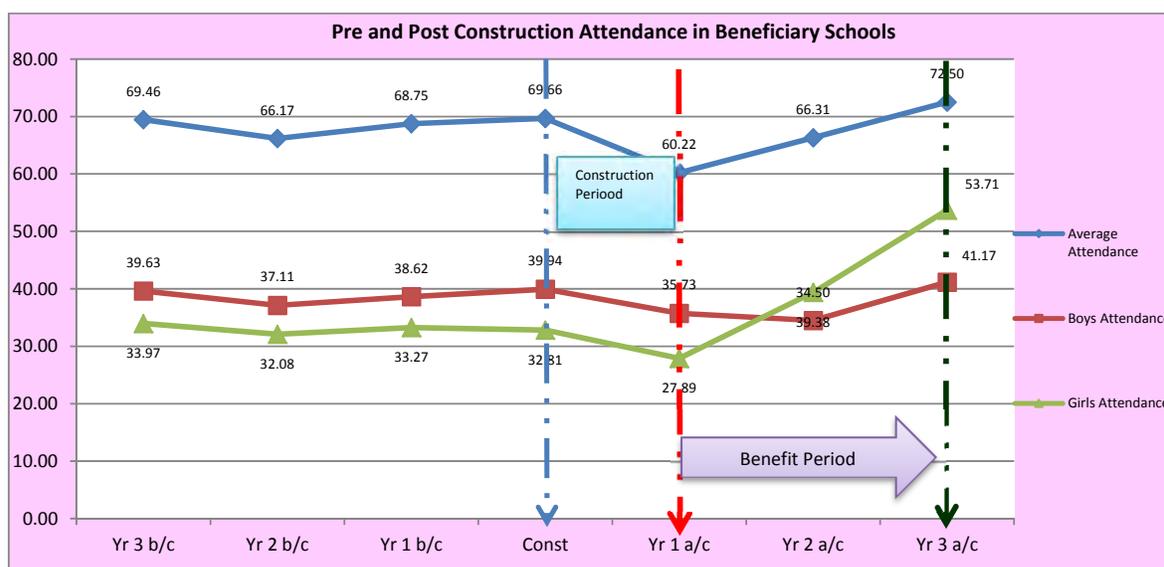


FIGURE 3.16 PRE-CONSTRUCTION AND POST-CONSTRUCTION TREND

It however declined sharply on the year of construction. This could be because pupils are requested to support in the mobilization of up-front materials. Such request discourages some of the pupils from attending schools. This decline in construction years is much sharper with girls than boys.

However, most of these girls returned immediately after the construction of the facilities while the decline continued for the boys. The attendance for girls further increased in the second year after construction for both girls and boys. This shows that the provision of WASH facilities to schools improves school attendance, particularly for girls. The records available are for the two years after the completion of construction (i.e. 2010-2011 and 2011 – 2012). However, there is need to track this progress for the next few years to access the sustainability of this attendance and be definite on accepting or rejecting the hypothesis that provision of WASH facilities can improve attendance.

The project targeted increasing girls' attendance by 20% in four years. The attendance chart shows an increase of girls' attendance from an average of 33.31% to 53.71%, recording an increase of 66.23% and exceeding the project's target by 43.71% within three years after commencement of construction of WASH facilities.

Further, comparison on the effect of WASH facilities on attendance can be seen on Figure 3.17. This chart compares attendance of beneficiary schools with non-beneficiary schools from the three years preceding the construction of the project and after the construction of the project.

As shown on the chart, the beneficiary schools showed an erratic attendance before the construction of the facilities. On the year of construction, the beneficiary schools had a very sharp drop in attendance as compared to the non-beneficiary schools, which experienced a slight drop in attendance. However, right from the first year of benefit, the beneficiary schools average attendance begins to experience a systematic increase in attendance with the non-beneficiary schools experiencing a drop and a slight increase. A polynomial extrapolation of the attendance shows that the beneficiary schools attendance continues to increase; however the non-beneficiary schools may continue to reduce. These records are available for only two years of project benefit. There is the need to track this performance for more years to determine whether the increase being experienced by beneficiary schools is sustainable.

A pre and post project analysis of the trend of teachers in 52 beneficiary schools that benefited from the WASH Project, however, does not accept the hypothesis that providing WASH facilities to schools improves teacher retention. As shown on Figure 3.18, there has been a consistent increase in the average number of teachers in these 52 schools since 2005.

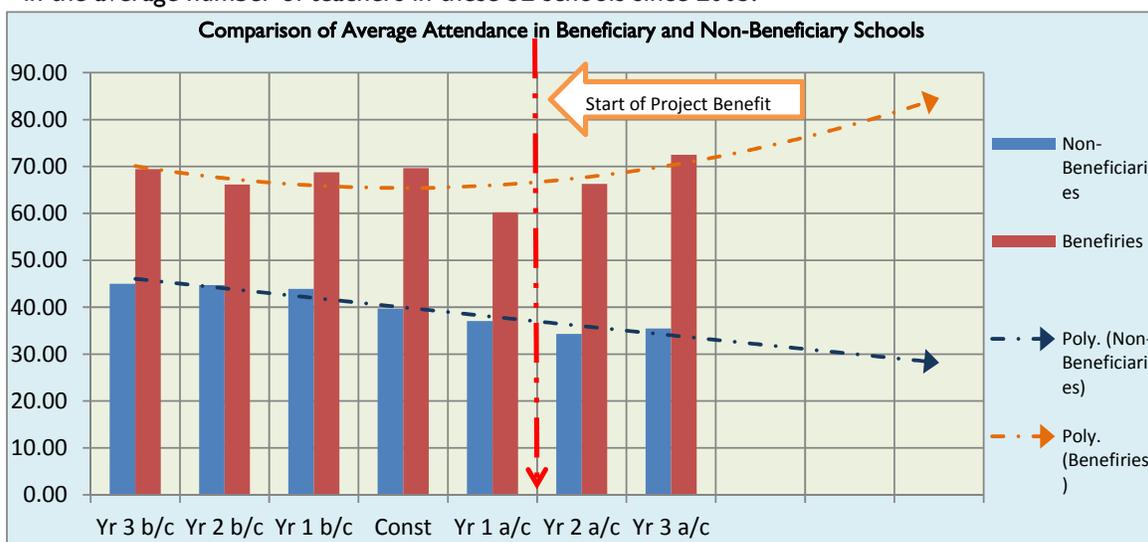


FIGURE 3.17 COMPARISON OF AVERAGE ATTENDANCE FOR BENEFICIARY SCHOOLS AND NON-BENEFICIARY SCHOOLS

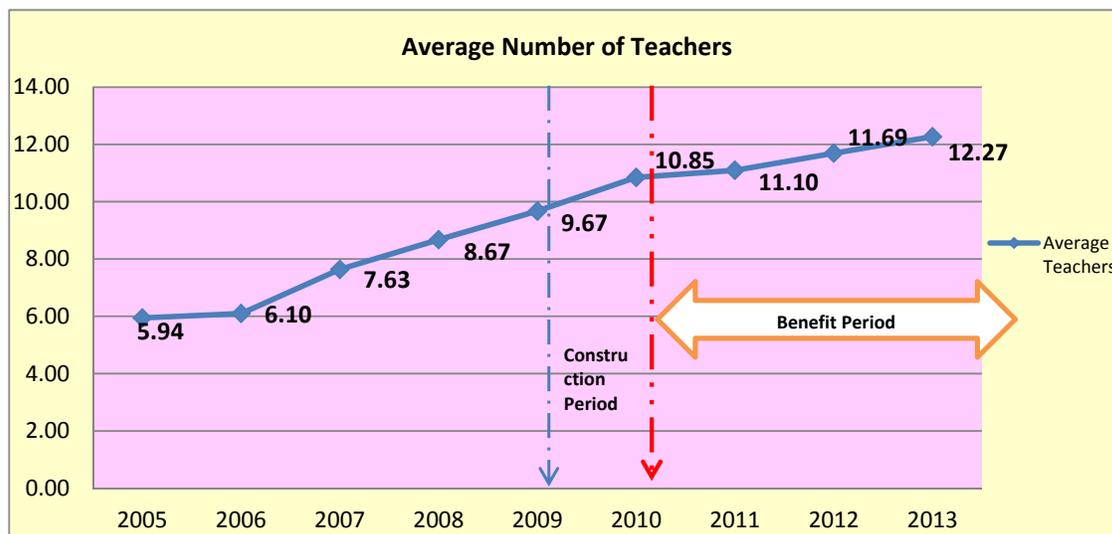


FIGURE 3.18 - AVERAGE TEACHERS PER SCHOOL

### 3.4.2 Linkage between WASH Facilities and Teacher Retention

This increase continued at the same rate during the construction period but the rate of increase was reduced during the benefit period. This means there are other factors that are influencing teacher retention or numbers of teacher in each school. The hypothesis that provision of WASH facilities to schools can improve teacher retention is therefore rejected. The project targeted increasing the retention of teachers in schools with improved WASH facilities by 20% within four years. The trend shows that the average number of teachers per sampled schools in 2009 was 9.67. This has increased in the four-year period to 12.27, achieving a 26.9% increase within the four-year period. However, as the trend shows, there has rather been a decline in the rate of increase and therefore the achievement cannot be attributed to the project.

## 4.0 CONCLUSIONS

In line with the finding of the evaluation, the conclusions are centered on whether the project was able to achieve its targets, the effectiveness of the various innovative technologies introduced by the project, the ability and feasibility of replicating these technologies in other geographical areas and the accuracy of the theory of change on which the project is based.

### 4.1 ACHIEVEMENT OF TARGET

Most of the objectives of the project did not have counterfactuals with which to compare the endline performance and determine the impact of the project. However, the following conclusions have been made based on the evaluation findings.

#### 4.1.1 Condition of Project Activities and Facilities

The project had a target of providing water facilities to 50% of the targeted schools; however, the evaluation found that 49.5% of the schools interviewed had been provided with water facilities, falling short of the target by 0.5%. The project was however able to exceed its targeted number of schools to be provided with sanitation facilities. About 83.0% of the sampled schools had been provided with sanitation facilities, exceeding the target by 33.0%

The WASH Project has established WASH committees in some schools that benefited from the project's support. Among the schools interviewed in the survey, 52.9% have active WASH committees. These are committees functioning, providing education to pupils in the schools and ensuring effective usages and proper maintenance of the WASH facilities. This achievement, however, falls short of the project's target of achieving 63.1% active WASH committees. About 6.2% of the schools interviewed also had WASH committees but these committees were not active. Whiles such schools acknowledge establishing WASH committees in the past, the committees have not been meeting, not educating the members and not performing their responsibility of scheduling for the cleaning of the facilities. Most of the committees became dormant because members of the committees completed their terms but they were not replaced, thereby weakening the structures. The remaining 40.9% of schools interviewed did not have WASH committees.

The project further targeted that 90% of the latrines shall remain clean. However, this target is far from being achieved. The evaluation found that only 67% of the latrines provided to schools remained clean at the time of evaluation. Some 20% of these latrines were functioning but were not clean, forfeiting the purpose of providing such facilities. More disturbing is the fact that some 10% of the facilities were not in use because they had broken down with a minimal 3% still under construction or yet to be handed over to the beneficiaries.

The project's target of ensuring that a minimum of 90% of the hand pumps shall be functioning well is also very far from being achieved. Currently only 64% of the hand pumps provided by the project are functioning well. About 20% are functioning but with challenges. Most of these 20% had a part broken down but schools are still using them since they need water. This has the tendency of breaking down other parts. Some 11% of the facilities inspected had already broken down and had not been repaired. The average timespan for fixing the water facility when broken down is 2 weeks. Some 5% of water facilities were still under construction.

#### 4.1.2 Knowledge of Hygiene

The survey found that there is a high level of knowledge on hand washing after defecation. Some 96.7% of the teachers and 92.2% of the pupils mentioned the need to wash hand after defecation. The belief in washing hands before eating was also strong as 84.4% of teachers and 66.9% of pupils indicated that as a period requiring hand washing. However, there is low knowledge in hand washing during certain critical periods including before preparing food, after cleaning a child's bottom, after cleaning the house, and before feeding a child. Only 35.4% of teachers believe in washing hands before feeding a child. These include 38.7% female teachers and 32.9% male teachers. This

knowledge is further lower among pupils. Only 16.7% of pupils interviewed believed in washing hands before feeding a child.

A similar trend in knowledge is found with hand washing with soap, even though it is somewhat lower than hand washing in general. Among teacher 95.2 believe in washing hands with soap after defecation. The belief in washing hands with soap is much lower (56.6%) when it comes to hand washing before eating. Comparing those who believe in hand washing to those who believe in hand washing with soap, some 27.8% of respondents who are teachers believe in washing hands before eating but not with soap. Among pupils, 88.9% believe in washing hands with soap after defecation. However only 30.3% believe in washing hands with soap before eating. The survey found that pupils who believe in washing hands with soap after cleaning a child's bottom, before feeding a child, and after cleaning the house were 21.5%, 13.5% and 7.8% respectively.

Most respondents are aware of IEC materials provided by the WASH Project. However the Peer Educators had much higher knowledge than non-peer education pupils while teachers who are WASH Coordinators had much knowledge than other teachers. Among the peer educators, 90.9% had seen the IEC materials provided by the project compared to 70.3% of those who are not peer educators. Also among teachers, 90.4% of WASH Coordinators, 86.9% of teachers' council members and 88.4% of other teacher had seen the IEC material provided by the project.

Understanding of these materials is however low among pupils who are not peer educators. Only 10.6% of pupils who are not peer educators could explain the materials excellently. About 42.2% could explain the materials well and 19.8% had average understanding and 27.9 with a weak or no understanding of the materials. Among the peer educators, understanding of the IEC materials were higher with 30.7% recording excellent, 46.6% good, 18.2% average and 4.5% weak or no understanding. The teachers however have a much better understanding with 67.3% of WASH Coordinators displaying excellent understanding of the materials and 28.8% showing good understanding. Even though only 22.2% of non-teaching staff had excellent understanding, all the remaining 77.8% had good understanding of the materials developed by the WASH project.

#### 4.1.3 Facility Usage and Incidence of Diarrhea Diseases

Both the latrines and water facilities provided by the project to schools are in high usage by both teachers and pupils. Of the total population interviewed, 84.3% of the teachers and 94.4% of the pupils indicated having used the latrines while 84.0% of the teachers and 85.3% of the pupils reported using the water facility.

The project target of reducing the number of diarrhea-related cases in a two-week period by 20% baseline was not achieved. The evaluation established that 15.1% of pupils and 9.3% of teachers experienced diarrhea in the two weeks preceding the evaluation. A higher percentage of them also had their family members experience diarrhea within that same period. An estimated 18.2% and 15.1% of family members of pupils and teachers respectively experience diarrhea related illnesses within the same period.

#### 4.1.4 Quality of Education

Learners among the beneficiaries have generally poor reading skills. Among pupils from grade 4 to grade 9, only 30% could fluently read the English text book of their respective grade. Some 29.9% were also able to read in English but with difficulty while 16.0% showed a completely weak ability to reading, missing most of the words and finding it difficult to pronounce most words. Yet still an estimated 31.1% could not even attempt to read. Reading skills were much higher in urban schools (50.0%) than rural schools (26.4%). Community schools showed worse reading skills even though all their teachers could demonstrate that they use lesson plans. An estimated 72.4% of pupils in community schools who benefited from the WASH Project could not even attempt to read. This compares to 29.1% of pupils in government schools that benefited from the same support.

However, the WASH Project seems to have impacted positively on the reading skills of beneficiaries. There is a strong relationship between the duration of benefit from the WASH Project and percentage of pupils able to read fluently. About 35.5% of the beneficiaries who benefited from the

WASH project in 2010 can read fluently. This proportion drops to 28.1% among 2011 beneficiaries, 23.6% among 2013 beneficiaries and 8.3% among 2013 beneficiaries (construction of WASH facilities still underway). This clearly shows that the provision of WASH facilities to schools improves the English reading skills of pupils in Zambia.

The project's target on quality of education was to enable pupils in grade 5 demonstrate the ability to read English fluently. This is, however, far from being achieved. The survey found that only 13.2% of pupils in grade 5 could read English fluently. Some 18.2% of pupils in grade 5 read English with difficulty and the same percentage are very weak in reading English. However, about 9.9% of them cannot even attempt reading.

## 4.2 INNOVATIVE WASH TECHNOLOGY

The conclusions on innovative technologies are categorized by the technology to enable a comprehensive understanding on the state of the technology. Various features discussed on each technology include how best the technology is functioning, the extent to which the beneficiaries are taking responsibility for the technology, the factors that aid the success of the technology and the constraints being faced by the technology and finally, if there are some best practices aiding the success of the technology.

### 4.2.1 Hand Washing Tanks with Bolt Taps

The hand washing tanks are very durable and strategically located. This innovation is a sustainable approach to ensuring access to clean water for hand washing and its location also serves as a reminder to pupils and teachers to wash their hands after using the latrine. The inspection found that 37.3% of these tanks contained visibly dirty water. Some of those containing dirty water did not have lids. Some 15.7% of these tanks were also found to have broken down. The main part that easily broke down is the bolt taps being used with the tank. The bolt taps easily corrodes, leak and eventually malfunction. Worse yet, it cannot be repaired when broken down. The only alternative is to chisel it out of the tank and replace it with another tap.

The beneficiaries are taking responsibility of the cleaning and usage of this facility. About 52.9% of the beneficiary schools have established WASH committees that ensure the cleaning and filling of these tanks with water. However, these beneficiaries are not taking responsibility with the maintenance of the facility. When the bolt taps breaks down, they expect the WASH Project to replace it instead of contributing to fix them. This has often led to delays in fixing a broken down tap with some 15.7% currently out of use.

The construction of these tanks for schools is a strong enabling factor. Due to the labor intensive nature of filling these tanks with water, there is need for a formal and structured system within the educational institutions to ensure regular supply of water into the tanks and realize its effectiveness.

The main barrier to this innovation, however, is the tap. Initially the project had used garden taps for the hand washing tanks. However, the garden taps became attractive to hoodlums who broke a significant proportion away. The garden taps also release a great volume of water, leading to waste of water and requiring that the tanks are filled 4 to 5 times each day. To break this barrier the project introduced bolt taps, whose flows basically trickle the water, are made of iron, and therefore are not attractive to theft. The bolt taps however have more challenges than the garden taps. The bolt taps were characterized by corroding iron, inadequate water flow, easy breakdown and inability to repair.

The project has talking walls in most schools with water facility. These talking walls serve their position with various positive water and sanitation behavior in the minds of beneficiaries. With these talking walls complementing the hand washing tanks, both the challenges of water access and behavior change are being tackled holistically.

### 4.2.2 Push and Lift Pumps

The Push and Lift Pump is an effective innovative technology. This innovative technology eases the flow of water into the ablution blocks and in some instances to teachers' quarters to ensure access

to portable water from the borehole or hand dug well. The evaluation found that 70.0% of the push and lift pumps are functioning effectively and an additional 20.0% are also functioning but with some difficulties. However, the pumping of water into the tank can be labor intensive. Considering that it's the 'push' pressure that sends the water into the overhead tank, it requires extra energy to pump and fill the tank.

Like the hand washing tank, the beneficiaries are taking responsibility for the cleaning and usage of this facility. However, they are not taking responsibility for the maintenance of the facility. They expect the WASH Project to provide spare parts for them to fix the facilities when they break down. This has resulted in the current situation where 10.0% of these facilities are not functioning and have not been repaired.

The labor-intensive nature of it requires regular pumping of water into the tank to ensure a continuous flow of water for other uses. This therefore requires a structured system where people can be assigned with that responsibility. The school environment is a perfect fit. Schools that benefitted from this facility have therefore developed rosters on who pumps the water into the tank and this is working to the good of the beneficiaries.

The main barrier to this system is the hand pump. This technology is completely dependent upon a borehole or hand-dug well. Therefore, when the borehole or hand-dug well develops any problem and malfunctions, the entire system ceases to function. Secondly, the labor intensive nature of it is a concern to pupils. Since the older pupils are more likely to be in the upper grades, they often have the authority to assign the younger pupils (mostly in the lower grades) to pump water into the tank, thereby exhausting these young ones.

#### 4.2.3 Manually Drilled Boreholes

The depth of the manually drilled boreholes averages 20 meters and therefore requires a location with a high water table. In most cases the boreholes dries up during the dry season and gets water during the rainy season. At the time of evaluation, none of the manually drilled boreholes were functioning effectively. Some 33.3% of those inspected were functioning but with difficulties, while another 33.3% were broken down and 33.3% were also not complete.

Like the other facilities, the beneficiaries take responsibility for the usage and cleaning but not the repairs. While the broken down manually drilled boreholes could be attributed to the season, beneficiaries look helpless in finding solution to the challenge since it is a technological deficiency.

The construction of a manually drilled borehole is much cheaper than a conventional borehole and hand dug well. Moreover the spare parts required for fixing the pump for this facility are highly available since they are made of locally produced materials. The construction does not require highly skilled labor or specialized machinery. This therefore makes it attractive to potential beneficiaries.

However, the shallow depth of manually drilled boreholes means a seasonal water supply. Schools provided with this facility would therefore have no alternative than to go back to their original water source whenever the facility dries up. Another major challenge of the manually drilled borehole is that, when the drilling hits a rock, the site must be abandoned for another site despite the depth of drilling already achieved.

#### 4.2.4 Spring Protection

The spring protection is a technology that is highly effective and useful. It helps provide water to teachers' quarters when the pipeline passes through the teacher quarters. It also supplies water to the entire school all year round. Spring protection does not require much effort from the beneficiaries to manage, use or maintain it.

However, it is dependent upon a spring and therefore there needs to be a spring in the areas before it can be protected. Moreover, it is dependent upon gravity flow and therefore requires a topography that ensures that the beneficiary community is located at a level lower than the spring.

### 4.2.5 Integrated Latrine

The Project constructed four Integrated Latrines in two schools. Each of the integrated latrines had parts of them broken down even though they are still in use. The idea was reported to be good in that the latrines include washrooms for girls and urinals for boys as well as water tanks and or rain water harvesting facility, have grill doors and or doors and hand washing basins.

However the design had some flaws. The latrines rely on push and lift pumps whose functionality cannot always be guaranteed. The washrooms are opposite the toilets and therefore older girls feel shy using them when younger ones are around. The floors are also not sloppy towards the drop holes to allow waste water and urine to flow into the pit, instead they allow waste water to stagnate in some parts making them unhygienic. Moreover, the vent pipes are positioned in front and do not face the sun.

Also the construction work was poor and some of the materials used were also of poor quality. For instance the pipes connecting water to the sinks are of poor quality and have developed several leakages on the supply line. These have contributed to compromising durability of the integrated latrines.

Sometimes the latrines would have no running water as is the case at Sabwa Primary School where the push and lift pump has not been functioning since December 2012, making use of washrooms by older girls during their periods of menstruation inconvenient. These challenges have rendered functionality and cleaning of the integrated latrines challenging.

## 4.3 REPLICATION AND MANAGEMENT BY LOCAL INSTITUTIONS

The ability to replicate these innovative technologies and the need to do so is highly dependent upon the enabling features and barriers to the innovation. The conclusions on how these technologies are being managed and sustained are discussed under this subsection.

### 4.3.1 Replication of Innovative Technologies

The overwhelming proportion of the population interviewed think the technologies are beneficial and should be replicated to the benefit of others. These include 96.1% of the pupils and 98.5% of the teachers interviewed in the survey.

#### *Hand Washing Tanks with Bolt Taps*

The hand washing tanks can be replicated in any geographical location without any technical challenge. However, when replicating the hand washing tanks, it should not be with the bolt taps. Even though the garden tap has its own challenges, it is the best alternative and should rather be used for the replication of the hand washing tank.

#### *Push and Lift Pumps*

The push and lift pumps are good and can be replicated anywhere where there is a water facility. However, due to the level of efforts required to fill them with water, it is more prudent to replicate them in schools with large population. This would ensure that it is utilized to the full.

#### *Manually Drilled Boreholes*

Manually drilled boreholes can be replicated in several places. However, two factors need to be considered before replication. Firstly, there should be clear evidence that the water table for the area is high enough to ensure continues supply of water from 20 meters all year round. This would ensure the borehole does not dry up seasonally and sustain water supply for the benefit of the people. Secondly, there should be reasonable evidence that the area to be drilled does not contain rocks to ensure that resources are not wasted and the site relocated.

#### *Spring Protections*

Spring protections can be replicated everywhere that provides the opportunity. Since it is based on the existence of a spring and the topography of the area, it may be difficult finding communities that

can actually benefit from it. However when such a school community is identified, it would be the best option to consider.

### ***Integrated Latrine***

In terms of replication, the high cost of construction both in terms of upfront contributions and project-supported inputs as well as high maintenance costs (need to replace taps, broken pipes) makes it difficult to replicate and challenging to sustain. Absence of O&M funds in all schools visited despite visible broken pipes and taps confirmed this challenge. The manual water system is also labor intensive as it takes pupils approximately 2 hours to pump water that lasts for a day. According to one Head Teacher, pumping water into the system takes away a significant proportion of pupils' time for learning

### **4.3.2 Operation and Maintenance**

The schools have not established any funds for the operations and maintenance of the facilities provided to them by the project. In all cases, individual community members who use the water facility do not contribute anything towards the maintenance of the facility. Currently, they depend on funds from the PTA coffers and allocations from MESVTEE to cover the cost of repairs. This often leads to delays in fixing broken down facilities. The schools do not also service the facilities. They only pay attention to them when they break down.

Most of the schools also rely on DAPP and in some few instances the District Council to fix the facility when they break down. The APM and latrine masons who can fix the facilities when they break down are very few and often reside very far from the location of the schools. However, since there are no comparable craftspeople in the communities, the schools are dependent on these ones for their services.

Currently about 52.9% of the school provided with the facilities have established and functioning WASH committees. These committees develop rosters for cleaning the environment of the facility. The other schools without such committees also keep the environment of the facilities quite clean.

The project has not been able to achieve its target of establishing 15 spare part outlets. Currently none of these have been established. The WASH Project's annual work plan (April 201 – March 2011) explains the strategy for establishing the spare part outlets as *"A private entrepreneur shall be identified and provided with the initial set of spares to sale. The project will invest 1,500 USD per spare part outlet (total 9,000 USD for 6 districts) Spare parts will include pipes (metal and plastic), cylinders, handles etc. The entrepreneur will, in future, secure availability of spares on his/her own using a revolving fund raised through sale of the provided spares"*. The evaluation however found that no private entrepreneurs were identified by the Project. The Project therefore did not even start the process described in the annual work plan. However, the project indicated that they are coordinating with District Councils to establish spare part outlets.

The Isoka District Council has purchased some hand pump spare parts and kept in a store room where APM can go to purchase. However, the spare parts are said to be too expensive for the APM. An IMII cylinder assembly which cost KR 300 in Lusaka is sold there at KR 1000. This leaves the APMs with no alternative than to travel to Lusaka to purchase the parts.

APMs in other Districts including Nakonde do not know where to get spare parts to purchase. They therefore rely on the school to request parts from the WASH Project for them to maintain the facility when broken down.

### **4.3.3 Sustainability**

The sustainability of various innovative technologies introduced by the WASH project varies considerably. The conclusion of sustainability is therefore discussed by technology.

### ***Ablution Blocks***

The ablution blocks constructed by the WASH Project are sustainable. However, the continued benefit from its sustainability depends on the availability of water. With most of the blocks being

supplied with water from the boreholes, there is the need to ensure the boreholes are sustained before maximum benefits are derived from the ablution blocks.

#### ***VIP Latrine***

The VIP latrines are constructed to be durable and require only cleaning to sustain it. The project started constructing them with the MOE standard of double layers from foundation to the roof but later changed to constructing double layers at the lower level and single layers at the upper level. Some VIP latrines have been provided to schools that have no class room blocks, standing the risk of being deserted when the school collapses.

#### ***Hand Washing Tanks with Bolt Taps***

The hand washing tanks are sustainable as they are designed to be robust, with bricks and cement. The bolt taps used along the hand washing tanks are, however, not sustainable. To ensure the tanks are sustained to benefit the schools, there is the need to replace all the bolt taps.

#### ***Push and Lift Pump***

The push and lift technology is durable and sustainable. The technology is simple and local artisans can manage it effectively. However, the technology is highly dependent upon a borehole or hand-dug well. This means sustaining it also requires sustaining the water source.

#### ***Conventional Boreholes and Hand Dug Wells***

The conventional boreholes and hand-dug wells are sustainable as facilities. They are however dependent upon the hand pump. The Indian Mark II hand pumps being used are also durable but have certain parts that easily wear out. The threat to sustainability of these facilities is therefore the absence of spare parts, particularly parts that easily wear out.

#### ***Manually Drilled Boreholes***

Manually drilled boreholes depend on ropes which are easily accessible and therefore the schools can purchase these parts to fix whenever the facility breaks down. However, it would be sustained by the schools if it is drilled in an area with high water table to ensure continuous flow of water all year round. In situations where the facility supplies water seasonally, the beneficiaries may become discouraged and this may lead to apathy of usage, which can result in eventual abandoning of the facility.

#### ***Spring Protection***

Spring protections are self-sustaining. The other parts including the tubes/pipes and taps are also durable and self-sustaining. This facility therefore needs very little attention to sustain. The main care needed is to ensure the water flowing through the pipes is not contaminated. This can be done by frequently clearing the surroundings of the spring.

#### ***School WASH Committees***

Even though about half of the schools provided with WASH facilities under the project have established WASH committees, the committees do not seem to be systematized. These committees may therefore not be sustained beyond the current membership. The educations conducted by these committees seem to have been centered very much on hand washing with soap after defecation. However, washing hands with soap during other occasions such as before eating, before preparing food, after cleaning a child's bottom, after cleaning the house and before feeding a child have been given little attention.

## **4.4 LINKAGE BETWEEN WASH FACILITIES IN SCHOOLS, SCHOOL ATTENDANCE AND TEACHER RETENTION**

The evaluation draws conclusions on the relationship between provision of WASH facilities in Schools and school attendance as well as teacher retention based on two analyses: first, analysis of

attendance in schools before, during and after the construction of WASH facilities to schools and in comparison with a control group of schools that did not benefit from such support, and second, pre and post analysis of teacher retention in beneficiary schools.

#### **4.4.1 Linkage between WASH Facilities and Pupils Attendance**

The evaluation concludes that there is a positive relationship between provision of WASH facilities to schools and pupils attendance. The evaluation observed that during the construction period, attendance reduced, possibly because pupils are often required to contribute materials or support in the construction. However, attendance picks up for girls immediately after construction while it takes a little while for boys attendance to pick up. This conclusion is based on limited data available because the provision of these facilities to the schools is barely two years old and data available post WASH support is two years data. The hypothesis that provision of WASH facilities improves pupils attendance to school is therefore accepted.

#### **4.4.2 Linkage between WASH Facilities and Teacher Retention**

The evaluation established that the provision of WASH facilities to schools has no significant influence on the retention of teachers. While the average number of teachers per school has been increasing over the last eight years, this cannot be attributed to the provision of WASH facilities because the increase is more significant before and during construction of the WASH facilities than it is after the provision of the facilities. There are therefore other factors influencing teacher retention in schools than the provision of WASH facilities. The hypothesis that providing WASH facilities to schools can increase teacher retention is therefore rejected.

## 5.0 RECOMMENDATIONS

The WASH Project has contributed significantly toward education in the schools that benefited. More of its benefits are yet to be incurred as its current outcome is sustained. The project is therefore recommended for extension to other schools in the Northern and Muchinga Province as well as other geographical areas in Zambia. While these extensions are recommended, they should be in the light of the following recommendations:

### 5.1 RECOMMENDATIONS ON INNOVATIVE WASH TECHNOLOGY

Some innovative WASH technologies have proven to be effective and efficient and are recommended for replication in other geographical areas. However, not all the technologies should be replicated, as some are not viable.

#### ***Hand Washing Tanks with Bolt Taps***

The hand washing tanks are very effective and viable especially when complemented with the talking walls. The bolt taps that goes along with them should however be replaced with garden taps until a better alternative is found. The hand washing tanks should also be designed with mini staircases to enable young pupils to pour water into them without difficulty. All subsequent constructions should also have the large lid and the mini lid to ensure water in it does not get polluted. Further, consideration should also be explored on the feasibility of connecting the hand washing tanks to the water point through a system similar to the push and lift. This would enable the pumping of water into the tanks without the current ordeal of fetching water from the borehole, which should be located far from the tank to avoid pollution from the Latrines.

#### ***Push and Lift Pump***

The push and lift is an effective technology that is recommended to be extended to other beneficiaries. This technology can be extended to any geographical area. However, consideration should be given to the size of the institution that is being provided with this facility as it would require a high level of effort to pump water into the tank. There is need for further consideration of the technology to reduce the level of efforts required to pump water into the tank.

#### ***Manually Drilled Borehole***

Even though the manually drilled borehole has strong limitations, it is recommended to be replicated because of the low cost of construction in comparison to other alternatives such as the conventional borehole and hand dug wells. This technology is recommended for areas with high water table that would ensure water at 20 meters all year round. Construction should also consider the area before drilling to ensure the avoidance of rocky areas. Further, consideration should be given to the innovation to explore means of cracking rocks with the manual drill when it hits a rock at certain depth. This would ensure that the invested resources do not go to waste when the drilling hits a rock during construction.

#### ***Spring Protection***

Spring protection is recommended for any area where this technology is feasible. Due to the conditions under which this technology may be feasible, it is not likely that many schools can benefit from this technology. However, it is of high efficiency which makes it the best for any area where it proves feasible.

#### ***Integrated Latrine***

The integrated latrine needs a complete redesign to factor in solution to the leaking pipes, location of wash room for girls, design of the slaps and drop-in holes and position of the vent pipes. They also need to be well planned and budgeted for at all levels to ensure they are of good quality. Schools to be provided with such facilities should be able to demonstrate a comprehensive O&M systems and

an existing O&M funds to ensure that the huge funds required in putting up the integrated latrines do not go waste. Also all the latrines should be designed with doors to ensure privacy. This would encourage usage by all, especially older girls.

## 5.2 RECOMMENDATIONS ON SUSTAINABILITY STRUCTURES

### 5.2.1 Formation of WASH Committees

While the project has achieved its target on the percentage of active WASH committees, even exceeding it by 2.9%, it is vital that continues support is provided to establish more WASH committees in the 40.9% that have no such committees and also strengthen the 6.2% that have gone dormant. This is because the sustainability and effective use of the facilities provided to these schools depends on the WASH committees to a large extent. Any subsequent project should direct a significant amount of resources into establishing WASH committees in all schools that are provided with facilities.. The schools should also be assisted to systematize the WASH committees. This can be done by supporting the schools to develop a guide book on sustaining and training the WASH committees to ensure that the committees do not collapse when the current crop of members moves on. The WASH committees should also be supervised to develop work plans on educating their colleagues on the hygiene practices they are thought by the project. This knowledge transfer would ensure proper hygiene practices not only by the WASH committee members but the entire student body. The Ministry of Education should also be encouraged to support the schools that have been provided with facilities and that do not currently have WASH committees to establish such committees. The Ministry should also train such committees to ensure sustaining the project.

### 5.2.2 Operation and Maintenance of Facility

All the schools provided with WASH facilities should be provided with technical assistance to set up and manage an operation and maintenance fund. The support to these schools should include developing an operational guide that stipulates how they would be raising funds to service, operate and maintain the facility as well as the frequency of payment into the fund. The WASH Project should stop replacing the bolt taps for the schools but should rather ensure that these schools replace the taps for themselves. This would give them a sense of ownership when their support from the project comes to an end.

The project should also train more APMs to provide maintenance support to the schools. To ensure regular servicing of the water facilities, prompt response to schools request and sustainable maintenance, it is recommended that a teacher and a community member from each school and community respectively be trained as APMs. The teacher trained should have the primary responsibility of servicing the facility and conducting minor repairs. The teacher should further work with another teacher in the form of On-Job-Training (OJT) to ensure that when that teacher is transferred, another person in the school can continue with the responsibility. The community member trained can be used as a backup for maintenance.

### 5.2.3 Access to spare parts

The project failed to establish the spare part outlets, which is the single most important activity that can ensure the sustainability of the facilities. Any subsequent project should therefore make every effort to establish them. While these outlets may not be large commercial shops, they should stock basic pump spare parts including pipes, rubbers, rods, injector pumps, connecting rods, bolts, chains and bearings. Three main proposals are worth considering in establishing the spare part outlets:

- **Commercial Sales Outlets:** The project can identify already existing business that sells spare parts for other machineries such as motorbikes or building materials. Since these firms are already existing businesses, they may not be affected with a low demand rate and are most likely able to sustain supply to the beneficiaries.
- **Mobile Sales Persons:** Another option worth considering is the Mobile Sales Persons. With this approach, some APMs could be identified in strategic locations and supported with a few spare parts that they could use as revolving fund. Through this approach, the APMs would charge the

schools for any parts used in fixing the facility with a regulated profit margin. This would not only serve as a source of funds for the APMs but would sustain the provision of spare parts for repairs to the schools.

- **SOMAP:** The process started by the WASH Project in supporting District Councils to establish SOMAPs should be encouraged by the Ministry of Local Government. However, the District Councils should be supported with the pricing to ensure they serve a social service rather than being a commercial venture. This approach should not be implemented alone. It should go along with one or both of the first two approaches to ensure there is competition and to eliminate the possibility of taking advantage of the limited supply to extort the schools.

## 5.3 RECOMMENDATIONS ON FUTURE PROJECT DESIGN

The design of the current project is good, leading to the numerous achievements indicated in the report. However, there are a few things that would need further consideration in future designs of similar projects.

### 5.3.1 Software Component

The project gave a lot of attention to the construction of the facilities but little attention to the software component of the project such as formation of WASH Committees, training of WASH committees, involvement of communities and monitoring of the activities of these schools. Subsequent projects should give considerable attention to the software component as the hardware component to ensure that facilities provided are sustained. This would involve ensuring that funding for both software and hardware are from USAID and to guarantee the provision of such funds for project activities as well as giving equal attention to hardware activities and software activities during project supervision and reporting. Education on hygiene should not only concentrate on hand washing with soap after defecation. It should be widened to cover other periods such as before eating, before preparing food, after cleaning a child's bottom, after cleaning the house and before feeding a child.

### 5.3.2 Selection of Schools

Several schools are in need of these facilities, especially in the rural areas. However, the potential of schools not owning the project and even abandoning the project is real. Any subsequent project should therefore ensure that the provision of such facilities to schools is demand driven. This can be done by setting standards for qualification of which schools must work to achieve. Two standards are recommended:

- **Pre-Qualification:** USAID should support the project to set conditions for pre-qualification and agree on that with the MOE. A major condition for qualification should be that the schools should have at least two classroom blocks with an office. This would ensure that latrines are not provided to schools that may end up collapsing, thereby wasting the funds.
- **Demand Driven Qualification:** Schools that qualifies in through the pre-qualification stage can be invited to complete a form applying for support. Conditions required on the form should include assembling the up-front materials and at least 5% of the capital cost contributed into an O&M account with supporting document to prove this. Unlike the current format of GRZ support, the 5% minimum cash in the O&M account should be a prerequisite for the application to be submitted, as opposed to being a prerequisite for getting funds released after an application has been accepted. With this approach, the USAID implementer would need to consider only applications that have some realistic potential of being carried to completion without the need also to consider applications whose potential may be largely aspirational.

While these conditions are not difficult to fulfill, they would actually ensure that the schools own the facilities provided. This would further ensure they do not wait for the project to fix any challenges with the facility.

# ANNEXES

## ANNEX A: STATEMENT OF WORK

### IDENTIFICATION DATA

1. Activity Title: End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Activity

2. Activity Number: 611-A-00-09-00001-00

Activity Dates: March 11, 2009 – September 30, 2013

Total Obligated Amount: \$8,209,838 (Paul Simon Water for the Poor Earmark)

Implementation Organization: Development Aid People to People (DAPP)

Target Population: Pupils, Teachers, Local Communities, Ministry of Education, Science, Vocational Training and Early Education (MESVTEE)

Geographic Coverage: Northern and Muchinga provinces

Agreement Officer's Representative: Malama Munkonge, School WASH Advisor

Alternate Agreement Officer's Representative: Beatrice Mweene, Education Specialist

### BACKGROUND

#### MAIN TASK/AIM OF THE SOLICITATION

USAID/Zambia seeks to undertake a performance evaluation of the School Water Supply, Sanitation and Hygiene (WASH) and Quality Education activity which began in March 2009 in 12 districts in Northern and Muchinga provinces. This performance evaluation will focus on:

- Establishing whether the School WASH and Quality Education activity has achieved the activity goals/objectives over the implementation period;
- Assessing how the activity was implemented; Assessing how the activity is perceived and valued;
- Determining whether expected results occurred; and
- Answering other questions that are pertinent to the design, management and operational decision making of this activity.

#### USAID/ZAMBIA ASSISTANCE TO THE EDUCATION SECTOR IN ZAMBIA

The purpose of USAID supported education interventions in Zambia is to contribute to improving the quality of basic education through a broad range of education interventions that promote accountability and decentralized participation in education service delivery with the ultimate goal of improving learning achievement specifically leading to reading gains. One of these interventions is increasing equitable access to education. It has been envisaged that the USAID supported education activities will work to provide disadvantaged and vulnerable children opportunities to participate and excel through access to quality education. These activities include the support of the provision of safe water and improved sanitation facilities in schools including hygiene education. The School WASH and Quality Education activity contributes to Development Objective 3 (DO 3) of the USAID/Zambia ("the Mission") Country Development Cooperation Strategy (CDCS) – *Improved Human Capital* – by furthering Intermediate Result (IR) 3.1, *Educational Achievement in Reading Improved*, Sub-Intermediate Result (SIR) 3.1.3, *Equitable Access to Education Increased* (see Annex I – Results Framework).

#### DETAILED DESCRIPTION OF THE SCHOOL WASH AND QUALITY EDUCATION ACTIVITY

The main objective of the School WASH and Quality Education activity is to improve access to water and sanitation services in schools in all 12 districts of Northern and Muchinga Provinces, and to promote improved learning outcomes. The activity intended to accomplish the following specific objectives:

- Promote education access, gender equity, girls education, teacher retention and improved health outcomes in Zambian schools;
- Improve water supply by rehabilitating or constructing water points using conventional and/or appropriate technologies;
- Improve sanitation services in basic schools by constructing latrines; Improve local capacity to maintain water and sanitation facilities; and Improve water, sanitation and hygiene education in basic schools.

The School WASH and Quality Education activity has two components of implementation:

- Phase I from March 2009 to March 2012, covering 240,000 learners in 800 schools in all 12 districts of Northern and Muchinga provinces.
- Phase II (Extension) from April 2012 to September 2013 covering an additional 50,000 learners in 150 schools for hardware outputs such as water point and school latrine construct and software outputs such as hygiene education. But under this extension all 950 schools were earmarked for systems' strengthening and sustainability through the rolling out of the Sustainable Operations and Maintenance approach (SOMAP).

The targets and actual results for this activity are given in Annex 2 and a few indicators include the following:

- Number of water points constructed (conventionally drilled boreholes, manually drilled wells) Number of water points rehabilitated (upgraded, repaired, etc.)
- Number of latrines constructed (teachers' houses, Double VIP latrines for girls/boys, Single VIP latrines for girls, etc.)
- Number of hand washing stations Number of peer educators trained
- Number of PTA Committees, Administrators and Teachers trained in SOMAP and hygiene education

The hypothesis of this activity is that with the attainment of equitable and inclusive academic institutions that have conducive learning environments (one with adequate WASH facilities and services), there will be increased learner (especially girls who have reached puberty) and teacher attendance, decreased student dropout rate and this will result in increased performance in reading. This activity was designed to create a conducive learning environment by providing water supply, sanitation and hygiene facilities in schools and teachers' houses within the school premises. It is believed that most girls who attend rural schools tend to drop out when they reach puberty due to the poor water supply and sanitation facilities. It has also been observed that most female teachers are unwilling to be posted in rural schools partly due to the poor water supply and sanitation facilities available.

## EVALUATION

The second section addresses the fundamentals of the envisioned evaluation, which include its purpose, its intended audience and uses, and the evaluation questions it is expected to address.

### EVALUATION PURPOSE AND RATIONALE

USAID/Zambia requires a performance evaluation as it approaches the end of its School water supply, sanitation, hygiene (WASH) and Quality Education activity assisting the MESVTEE in Zambia. This evaluation is meant to serve several purposes:

To learn to what extent the activity's objectives and goals - at all result levels particularly focusing on WASH hardware development, training in hygiene education, community participation and systems' strengthening - have been achieved;

To inform the design of the possible future development of a national guideline for the implementation of WASH in Schools;

To assess the contribution of the activity interventions to improving student and teacher contact time (time on task), learner attendance and student/teacher retention;

To review the cost-effectiveness and sustainability of the innovative approaches for WASH service provision in the pilots tested in this activity; and

To assess the sustainability of the activity in terms of future replication and implementation by the Government of Zambia.

#### TARGET AUDIENCE

The primary audience of the evaluation report will be the USAID/Zambia Mission, specifically the Education team and the Africa Bureau. The secondary audience will include the implementing partner Development Aid from People to People (DAPP) and key stakeholders implementing WASH in Schools activities in Zambia such as the MESVTEE, Ministry of Local Government and Housing (MLGH), UNICEF and civil society organizations working in the water supply and sanitation sector like the Zambia NGO WASH Forum, SNV, Water Aid, etc. An Executive Summary and recommendations will be provided to the MESVTEE.

USAID will use the evaluation report to:

Make recommendations to MESVTEE and MLGH on the current national strategies of providing support to WASH in Schools namely the:

School Health and Nutrition - SHN - Policy

National Rural Water Supply and Sanitation Program National Urban Water Supply and Sanitation Program

Key stakeholders involved in the development of the water supply and sanitation policy

Share lessons learnt with: the implementing partner as feedback to build the capacity of DAPP, a local implementing partner; and the MESVTEE on how to better plan, develop and manage WASH in school facilities and services in collaboration with other key Government institutions namely MLGH, Ministry of Health (MOH), and Ministry of Mines, Energy and Water Development (MOMEWD). These lessons can also be used to inform similar ongoing USAID funded activities such as the SPLASH (Schools Promoting Learning Achievements through Sanitation and Hygiene) in Eastern Province.

#### EVALUATION QUESTIONS

The Contractor shall examine both gender and environmental issues within the context of the activity and how they influenced the achievement of the activity objectives that may or may not have led to improved learner performance. While adequate baseline data on learner performance are not available for this activity, the Contractor shall, to the extent practicable, examine aspects of the activity that contributed to an enabling environment for quality education to take place, such as increased student/teacher attendance and retention, increased teacher/student contact time.

The Contractor shall address the following research questions:

To what extent were the activity's targets achieved and why?

Assess whether the activity managed to achieve planned results focusing on quality/quantity of outputs for this activity (i.e. construction works, awareness levels of good hygiene among intended beneficiaries of the activity, strengthening systems involved in School WASH

implementation/governance, and also lessons on what works, etc.). Any changes that have occurred during implementation of this activity, both the external environment or internal to the activity, must be indicated in the evaluation report especially where they may have had a bearing on activity outputs and outcomes.

What has been the level of functionality of the innovative WASH technologies and approaches and responsiveness of the beneficiaries to them in the activity?

Assess the enablers and barriers to utilizing these innovative technologies and approaches. Assess the best practices and lessons learned during the application of the innovative technologies and approaches in the activity.

Can the approaches applied in this activity be replicated and managed sustainably by the local institutional framework for the Education and WASH sectors of Zambia?

Is there a link between provision of safe and adequate WASH facilities in Schools and pupil school attendance and teacher retention? How relevant were the activity interventions in improving student/teacher school attendance and retention?

Assess the relationship between provision of WASH facilities and services in schools to pupil school attendance and teacher/student retention, particularly for women and girls. Comparisons could include: attendance before and after the activity; attendance rates between schools that didn't receive any support compared to those that did; and attendance rates among the different schools within the activity that received different forms of support.

#### EVALUATION DESIGN AND METHODOLOGY

The Contractor shall utilize a non-experimental design approach to conduct the evaluation. This performance evaluation shall be implemented in a participatory manner with key stakeholders especially at the national level, and to the extent possible, utilize existing relevant reports, evaluations, studies, and analyses.

#### DATA COLLECTION METHODS

The Contractor shall determine a realistic sample size for the data collection exercise that will be a fair representation of the activity scope of 950 schools spread out in 12 districts in Northern and Muchinga provinces. The methodology shall be comprised of a mix of tools appropriate to the evaluation's research questions. These tools may include a combination of the following:

- Desk Review of existing documentation (e.g., baseline report, mid-term evaluation; activity quarterly reports, school classroom attendance registers, school performance reports, etc.). This list is not exhaustive and the Contractor is encouraged to add more documents to the desk review.
- School WASH and Quality Education Program Description and budget (2009 – 2010)
- Quarterly and Annual Reports
- USAID Zambia Portfolio Review Reports
- USAID Performance and Planning Reports (PPRs)
- School Health and Nutrition Policy
- National Rural Water Supply and Sanitation Programme (2007 – 2015) and Sanitation Component Extract
- 2010 Education Statistical Bulletin prepared by the Directorate of Planning and Information under MESVTEE
- 2009 Education Statistical Bulletin prepared by the Directorate of Planning and Information under MESVTEE
- 2008 Education Statistical Bulletin prepared by the Directorate of Planning and Information under MESVTEE
- Relevant databases in the Education, Health and WASH sectors (e.g., Education Automated Statistical Information Systems Toolkit (ED\*ASSIST));

- Focus group discussions with relevant stakeholders from the national to school levels;
- Stakeholder interviews at national, provincial, district and school levels (the list below is not meant to be exhaustive and the Contractor is expected to identify as many relevant stakeholders as possible)
- Chief of Party for School WASH and Acting Managing Director for DAPP
- GRZ Officials from MESVTEE and Ministry of Local Government and Housing
- AOR and Alternate AOR for School WASH
- Representatives from the NGO WASH Forum
- Beneficiary community members
- School Officials
- School Children
- Survey of schools to collect information about the use and maintenance of facilities and technology

The Contractor shall design data collection tools and are encouraged to test these tools and get feedback on their usefulness, for the intended purpose of this evaluation, from key stakeholders in the aforementioned sectors at relevant levels in order to ensure the appropriateness of the tools. Triangulation of data will be required in order to validate authenticity.

#### DATA ANALYSIS METHOD

The Contractor shall design a mix of data collection and analysis methods to generate answers to the research questions in the evaluation rationale that eventually should help determine whether this activity proved or disproved the hypothesis described under the activity goals section. In addition, the Contractor shall analyze information collected to identify correlations and identify the major trends and issues.

#### METHODOLOGICAL STRENGTHS AND LIMITATIONS

Strengths: Access to ED ASSIST data is available and can cater for some level of data extrapolation where required. Record keeping in the education sector is fairly up to date.

Limitations: Language barriers, distances between schools in rural areas, time frame, number of schools that can be practically integrated in this evaluation in comparison to the scale of the activity (sample size), lack of updated data sets in GRZ institutions, substandard baseline of the School WASH and Quality education activity, low quality of documentation by activity, ability to extract information from certain groups like the school girls, lack of WASH data (RVSS IMS still not available).

#### EVALUATION DELIVERABLES

The Contractor shall produce the following deliverables:

Evaluation Plan – The Contractor shall submit a detailed work plan before commencement of field work to the COR. The evaluation plan shall include all the activities that are going to be performed by the contractor in order to complete the evaluation, including the following elements: plans and duration for consulting USAID/Zambia and its partners and key stakeholders and dates for all the milestones in the evaluation process such as draft mid-term evaluation report, and final mid-term evaluation report. *The COR shall review and provide written feedback within three business days of receiving the plan.*

Final Evaluation Methodology – The Contractor shall submit the final evaluation methodology protocol before commencement of field work to the COR. *The COR shall review and provide written feedback within three business days of receiving the final evaluation methodology protocol.* The final methodology protocol must be accompanied by an annex, detailing the following: protocols for interview and site visits, proposed report outline for the final report, report designating individual team member responsibilities, dates for entry and final briefings with the USAID/Zambia, other USG agencies and staff, implementing partners and host government officials.

\* Please Note: Because children and community members are key stakeholders, the proposed interview questions must be approved by the Biomedical Ethics Committee at the University of Zambia. As such, the research protocol must be submitted to USAID within the first 10 calendar days of the period of performance.

Briefings – The Contractor shall organize and provide entry and final briefings for USAID/Zambia staff, other USG agencies and staff, implementing partners and host country government officials.

Inception Presentation – Before commencement of field work, the Contractor shall organize and provide an Inception Presentation to USAID and key stakeholders (other USG agencies and staff, implementing partners and host country government officials), outlining the Evaluation Plan and Methodology, including any preliminary findings from the desk review.

Bi-weekly Progress Meetings between USAID and the Contractor. In case these meetings are not possible, especially during the data collection phase, the Contractor is encouraged to share information by email and have sufficient telephone discussions to ensure that USAID/Zambia is adequately informed on all activities, progress, challenges,

Preliminary Report of Findings Presentation – The Contractor shall organize and provide a preliminary report of findings at the end of data collection, and prior to submission of the Draft Final Report, to USAID and key stakeholders (other USG agencies and staff, implementing partners and host country government officials).

Draft Final Report – The Contractor shall submit three hard copies and one electronic copy of the draft report to the USAID COR two working days prior to the final de-briefing and Team Leader departure from Zambia. The Contractor shall separate the findings, conclusions, and recommendations for each question. All recommendations included in the report shall be practical, specific, and action-oriented and designate the proposed implementer and timeframe.

Presentation – The Contractor shall provide USAID/Zambia with a 20-30 slide MS PowerPoint presentation that can be used in meetings with stakeholders identified in the target audience section above.

Final Evaluation Report – The final evaluation report must incorporate modifications requested by USAID and the GRZ, as agreed by both parties, unless the modifications are designed to alter the findings. However, if USAID has identified factual errors or can provide additional evidence/information to the evaluation team and they agree to amend the report, then the modification will be accepted. The Contractor shall submit three hard copies and one electronic copy of the final report to the USAID COR. The final report shall be submitted to the Development Experience Clearing (DEC) House within two business days after the COR accepts the report. The report must meet the evaluation criteria specified in the USAID Evaluation Policy.

Evaluation Report Format: The Contractor shall prepare the draft and final evaluation reports in accordance with the following format:

The evaluation report must be written in English.

The evaluation report must be formatted for size A4 paper.

Report contents:

Executive Summary (6 pages maximum length): A brief summary of the purpose, background, including a brief description of the activity evaluated, and evaluation's major findings/ recommendations and lessons learned.

Main body (40 pages maximum length):

- Description of the project: Drawing from the School WASH activity, concisely describe the rationale of the activity interventions, what constraints/opportunities they were meant to address, and what, specifically, the program has been trying to accomplish.

- Evaluation purpose, methodology: Describe, briefly, types and sources of evidence and methodologies employed to complete the evaluation SOW, Including limitations of methods used.
- Findings: Present findings, with supporting evidence, as regards to the questions/issues in the SOW and other pertinent matters that should arise during the course of the evaluation. Describe the findings in three parts: (i) the first section should focus on the evaluation of the School WASH and Quality Education activity task areas from 2009 – 2013; (ii) the second section should focus on the performance of the innovative approaches that were applied in this activity that include alternative water supply and sanitation/hygiene hardware technologies and hygiene education approaches; and (iii) the third section should focus on showing linkages between the provision of WASH facilities and services to school attendance by learners and teacher retention.

Conclusions: Present conclusions in relation to the findings.

Recommendations: Present and synthesize pertinent recommendations as they regard to the structure and implementation of a follow-on school WASH activity that can be undertaken by the MESVTEE or other related Line Ministries to feed into the activity Exit Strategy. All recommendations shall be practical, action-oriented, specific, and designate the proposed implementer.

- The evaluation report shall also contain all the data collection instruments used in the evaluation in the appendices.
- When applicable, evaluation reports must include statements regarding any significant unresolved differences of opinion on the part of the funders, implementers and/or members of the evaluation team.

All evaluation products, including but not limited to the Draft and Final Evaluation Reports, Presentations to USAID, all data collected, interview notes, and any other relevant information shall be provided to USAID in an electronic format suitable for review and re-analysis.

#### Team Composition

The Contractor shall assemble an evaluation team that includes one team leader and two subject matter experts as described below. The Contractor shall ensure that at least one team member has data manipulation and analysis or statistical analysis skills.

KEY PERSONNEL – The Contractor shall provide key personnel that possess the following qualifications:

#### Monitoring and Evaluation Specialist (Team Leader)

Advanced degree in a relevant Social Sciences field

A minimum of ten (10) years of experience in the field of monitoring and evaluation, including qualitative and quantitative designs and data analysis, preferably with some familiarity in education, water supply and sanitation

Capacity to lead, coordinate, and deliver evaluations

Competent in information management systems, statistical analysis and the use of Microsoft Office applications such as Word, Excel, ACCESS, PowerPoint and SPSS

Knowledgeable in performance analysis indicators, logical framework approach, theory-based evaluation, formal survey techniques, rapid appraisal methods and other participatory methods, cost-benefit analysis and performance assessment approaches

Conversant with database development, storage and management Capacity to pay attention to details and accuracy

Excellent writing/organizational skills and proven ability to deliver a quality written product (evaluation report and power point)

#### Water Supply Specialist

Advanced degree in water supply, water quality, chemistry, hydrogeology, civil engineering or related field

10 years of experience in water supply in rural communities in Zambia. 3 years of experience evaluating water supply projects

Ground water management experience

Practical knowledge in water quality management

At least 5 years' experience working in relevant public sectors in Zambia Familiarity with the education sector

Fluency in Bemba is an added advantage

Ability to interact in a variety of social – cultural settings

Sanitation and Hygiene Specialist

Advanced degree in Public Health, Civil Engineering or related field

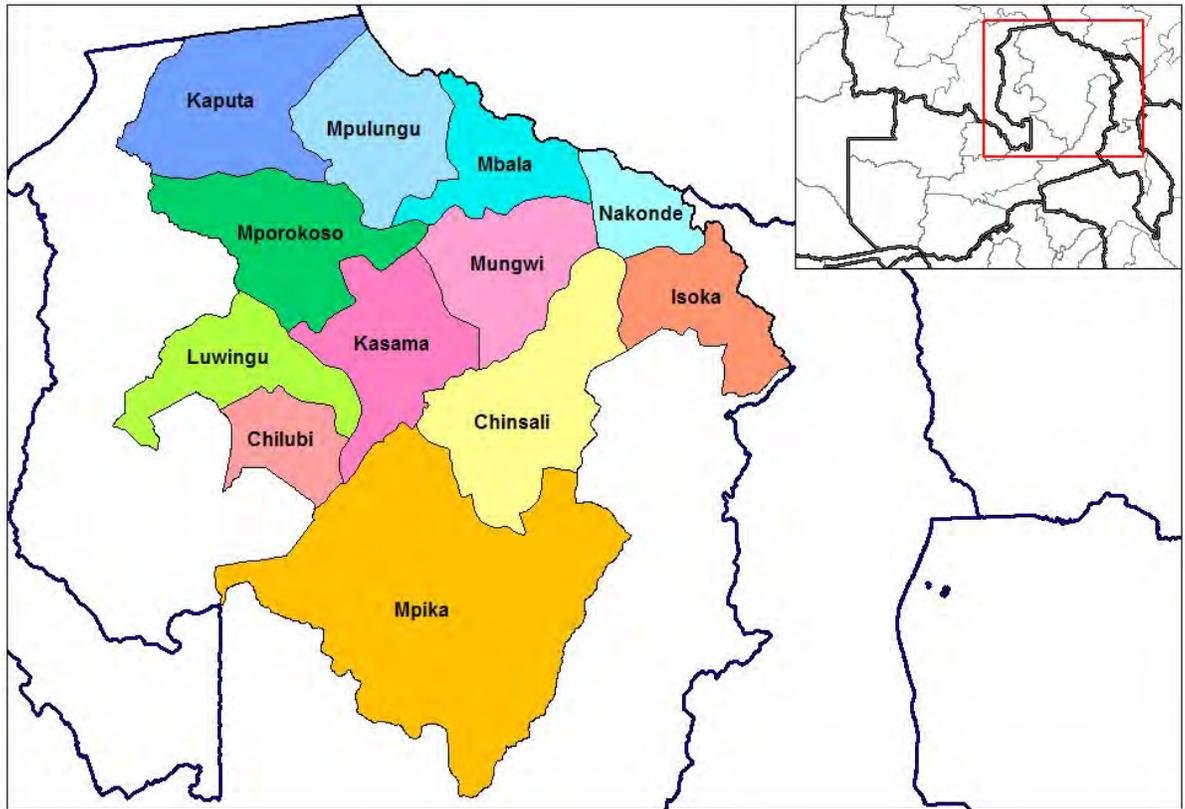
10 years' experience in sanitation and hygiene promotion/education in rural communities in Zambia.

At least three years of experience evaluating sanitation and hygiene projects preferred At least 5 years' experience working with the relevant public sectors in Zambia Familiarity with the education sector

Fluency in Bemba is an added advantage

Ability to interact in a variety of social – cultural settings

## ANNEX B: MAP OF ZAMBIA – DISTRICTS VISITED FOR DATA COLLECTION



## ANNEX C: EVALUATION TEAM BIOGRAPHIES

**Mr. Joseph Sineka Limange, Team Leader/Methodologist**, is an experienced project leader with over sixteen years of experience in project planning, research, and monitoring and evaluation in Africa. Mr. Limange brings excellent leadership, management and organization skills and he has led numerous teams including leading a team of evaluation and health sector experts in the performance evaluation of the USAID/Zambia CSH project, which assessed the effectiveness of alternative delivery modes of health services in local communities. Thus, he has direct experience managing survey work in rural Zambia. Additionally, he has demonstrated outstanding technical expertise in evaluations, and he has most recently led a monitoring and evaluation team for a USAID funded health behavior change communication project in Ghana covering health, water, sanitation and hygiene areas. His evaluation experience spans across various donors including significant experience with USAID and further across various thematic areas including Health, Water, Hygiene, and Sanitation. Mr. Limange developed M&E Framework and set up monitoring systems for 120 District Mutual Health Organizations through DANIDA Health Sector Support between 2003 and 2008. His other M&E experience includes conducting an Impact Evaluation of the USAID/Africa Trade Hubs Project; and performing an evaluation of the Bill & Melinda Gates Foundation and Rockefeller Foundation funded Alliance for a Green Revolution in Africa's (AGRA) activities across 15 African countries including Zambia.

Mr. Joseph Limange has excellent analytical and writing skills and is adept with SPSS, SAS and STATA as well as with the design and management of databases using ACCESS. As a seasoned international professional, he has demonstrated success in interacting with internal and external partners and beneficiaries. Mr. Limange is a PhD candidate in SMC University and holds an MBA from the Paris Graduate School of Management.

**Mr. Fidelis Chulu, Water Supply Specialist**, is an experienced Water Supply Specialist with twenty years of experience working on projects promoting WASH, as well as managing water quality in Southern and Eastern Africa. Additionally, he has over five years of experience evaluating and assessing such projects. His most recent assignment was to conduct a year-long assessment on the performance of the Global WASH Cluster. During the assignment, Mr. Chulu defined affected areas in Africa, assessed the water supply, sanitation, and hygiene needs and developed improved assessment approaches to urban emergencies such as droughts and floods. In 2010, he was a consultant for UNICEF evaluating WASH enabling facilities of schools located in flood-prone regions of Namibia. Mr. Chulu has worked considerably with education and public sector projects in Southern Africa. In 2009 he worked in the education sector of Namibia on a water sanitation project for UNICEF. He examined current sanitation systems for over 60 schools, made detailed assessments, which were incorporated in a manual on water quality management in flood-prone areas; designed and drew concept of Urine Diversion and Dehydration (UDD) toilets. He was a WASH consultant for UNICEF in 2008, conducting an assessment of thirty schools in three flood-prone regions in Namibia. He determined which ten of the thirty would benefit from the addition of a proper latrine system in promotion of safe water and proper sanitation. As a flood-plain assessor, Mr. Chulu has gathered experience on water quality management practices. Between 1998 and 2000, he served as the District Director of Health for Zambia, where he led the management team in planning and budgeting water quality activities. In 1996, as a WASH and Education officer, he helped design and implement education programs aimed at training local community-based organizations on simple water sanitation solutions. Earlier, he worked as a national sanitary engineer for the WHO monitoring inputs in epidemic control with regard to community WASH in Zambia. Mr. Chulu holds a Master's degree in Environmental Engineering and Sustainable Infrastructure from the Royal Institute of Technology in Stockholm, Sweden. As an expert on WASH, he has also published a number of official reports, Environmental Impact Assessments (EIAs), and strategic plans for managing water supply systems in conflict-prone regions of Southern/Eastern Africa.

**Ms. Matilda Shatunka, Sanitation and Hygiene Specialist**, will bring to the team over ten years of experience in advising, strategic planning, implementing, and monitoring and evaluating WASH projects, including WASH in Schools programs. For the last six years, she has served as WASH Advisor in SNV Netherlands Development Organization in Zambia. In this position, she has been involved in multiple roles providing advisory services to NGOs and civil society organizations to improve planning and implementation of WASH programs. In the recent past, Ms. Shatunka has successfully supported profiling school WASH in public sector planning and budgeting. She has been instrumental in the initiation of the UNICEF/SNV partnership and the SNV/WSUP (Water and Sanitation for Urban Poor) to support peri-urban water supply and sanitation programs. As Water and Sanitation Project Officer for Irish Aid, she has also assisted with planning and implementing school sanitation and hygiene education programs. Ms. Matilda Shatunka's evaluation experience includes supporting monitoring and evaluation and participatory planning systems; developing M&E system for the Northern Province water and sanitation program and for Zambia NGO WASH Forum; assessing the application of good practices and techniques in planning, monitoring and evaluation of Irish Aid programs, and developing self-monitoring and evaluation tools for community programs.

Ms. Shatunka possesses MSc in Public Policy and Management and has certificates in Participatory Methods in Planning and Management of Water and Environmental Sanitation, School Sanitation and Hygiene Education, and Development Supervision, Mentoring and Performance Appraisal. Throughout her career, Ms. Shatunka has been involved in gender and social sensitive issues. On many occasions she has been involved in gender programming, facilitating mainstreaming of gender, HIV/AIDS and governance aspects in WASHE programs to ensure equitable and sustainable service delivery. She is fluent in Bemba.

## ANNEX D: LIST OF SCHOOLS VISITED

### Beneficiary Schools

*Note: For legibility, there are two lists of schools, depending on characteristic of facility.*

Name of School	Traditional Latrine	Traditional VIP Latrines	Ablution Block	Advanced Latrine	Manually Drilled	Push and Lift Boreholes	Spring Protection
Chailo Community School					Functioning Well		
Chalabesa	Functioning Well	Functioning Well					
Chanda Mukulu Primary School		Functioning Well					
Charles		Functioning Well					
Chibaye Basic School	Functioning Well						
Chicencelebwe Primary School	Not Functioning Well	Not Functioning Well					
Chikana Community School		Functioning Well					
Chikwanda		Functioning Well					
Chilonga Primary School		Functioning Well				Functioning Well	Functioning Well
Chimba Primary School	Functioning Well	Functioning Well		Functioning Well			
Chimbele Primary School		Not Functioning Well					
Chinyansi		Functioning					

		Well					
Chipokoso Middle Basic School		Functioning Well					
Chipundu		Functioning Well					
Chiwanda		Functioning Well					
Danger Hill		Functioning Well					
Itinti Primary School	Functioning Well	Functioning Well					
Iwula		Functioning Well					
Kakomo		Functioning Well					
Kalaba	Functioning Well	Functioning Well	Clean		Functioning Well		
Kalalanda		Functioning Well					
Kalalantekwe Primary School	Functioning Well						
Kalila Primary School		Functioning Well					
Kampumbu		Functioning Well					
Kanakashi		Functioning Well					
Kapililonga		Functioning Well					
Kapisha Primary School	Not Functioning Well	Functioning Well				Functioning Well	
Kasakalabwe	Functioning Well	Functioning Well					

Kasungwe		Functioning Well					
Kateshi Primary School	Functioning Well	Functioning Well					
Katopola	Functioning Well						
Kawimbe Primary School		Functioning Well					
Kopokoko Primary School.		Functioning Well					
Kuuta		Functioning Well			Incomplete		
Lobati		Functioning Well			Broken Down		
Lualuo Primary School		Functioning Well					
Luchindashi Primary School		Functioning Well					
Lupungu	Functioning Well						
Mikuwe Primary School		Functioning Well					
Milongo		Functioning Well					
Mishishi		Functioning Well					
Mporokoso Primary School		Not Functioning Well	Broken Down	Not Functioning Well			
Mpulungu Primary School		Functioning Well					
Mubenga Chipoya Basic			Not Clean				

Mukanga	Functioning Well	Functioning Well	Clean				
Mulilansolo		Functioning Well					
Mundu Basic		Functioning Well					
Munwe	Functioning Well						
Musa Basic School							
Musenga Basic School			Broken Down				
Mwenzu Primary School		Functioning Well					
Ndeke Basic School							
Nkweto Primary School	Functioning Well						
Nsanja	Not Functioning Well	Functioning Well				Not Functioning Well	
Sabwa Basic School						Broken Down	
Shikayamba		Functioning Well					
Tenga		Functioning Well					
Tuta Primary School	Functioning Well						
Vyamba Basic						Functioning	
Wulongo		Functioning Well					
Yolo		Functioning Well					

Name of School	Hand Washing Tanks	Talking Walls	Conventional Boreholes	Hand Dug Wells	Integrated Latrine
Chalabesa	Functioning Well	Functioning Well	Not Functioning Well		
Chanda Mukulu Primary School	Functioning Well	Functioning Well			
Charles	Broken Down				
Chibansa	Functioning Well				
Chibaye Basic School	Functioning Well	Functioning Well	Functioning Well		
Chicencelebwe Primary School				Incomplete	
Chikana Community School	Functioning Well				
Chikwanda			Functioning Well		
Chilonga Primary School	Incomplete	Functioning Well			
Chimba Primary School		Functioning Well			
Chimbele Primary School	Not Functioning Well	Functioning Well			
Chinyansi	Not Functioning Well				
Chipokoso Middle Basic School	Incomplete		Functioning Well		
Chipundu	Functioning Well		Not Functioning Well		
Chitinta Primary School	Not Functioning Well	Functioning Well			
Chiwanda	Broken Down				

Danger Hill					
Itinti Primary School		Functioning Well			
Iwula	Broken Down		Functioning Well		
Kalalanda	Broken Down				
Kalalantekwe Primary School	Functioning Well	Functioning Well	Not Functioning Well		
Kalila Primary School	Functioning Well	Functioning Well			
Kampumbu	Functioning Well		Functioning Well		
Kanakashi	Functioning Well		Not Functioning Well		
Kapililonga	Functioning Well		Functioning Well		
Kapisha Primary School					
Kasakalabwe	Functioning Well				
Kasungwe	Functioning Well				
Kateshi Primary School	Not Functioning Well	Functioning Well			
Kawimbe Primary School		Functioning Well			
Kopokoko Primary School.	Not Functioning Well		Not Functioning Well		
Kuuta	Not Functioning Well				
Lobati	Functioning Well	Functioning Well			
Lualuo Primary School	Not Functioning Well	Functioning Well			
Luchindashi Primary School	Functioning Well	Functioning Well			

Lupungu	Broken Down	Functioning Well	Not Functioning Well		
Mikuwe Primary School	Not Functioning Well				
Milongo	Functioning Well				
Mishishi			Functioning Well		
Mitanga Basic				Functioning Well	
Mporokoso Primary School					
Mpulungu Primary School	Not Functioning Well	Functioning Well			
Mukanga	Functioning Well	Functioning Well	Functioning Well		
Muleka Tembo		Functioning Well		Incomplete	
Mulilansolo	Not Functioning Well				
Mundu Basic	Not Functioning Well		Functioning Well		
Munwe	Not Functioning Well	Functioning Well			
Musa Basic School					Not Functioning Well
Mwenzu Primary School	Not Functioning Well		Functioning Well		
Ndeke Basic School	Not Functioning Well		Broken Down		
Nkweto Primary School	Broken Down	Functioning Well	Broken Down		
Nsanja	Not Functioning	Functioning Well			

	Well				
Sabwa Basic School	Not Functioning Well	Functioning Well			Not Functioning Well
Shikayamba					
Tenga	Not Functioning Well				
Tuta Primary School	Not Functioning Well				
Wulongo	Functioning Well		Functioning Well		
Yolo	Functioning Well		Functioning Well		

#### Non-Beneficiary (Control) Schools

Chengelo Primary School	Lunyungu Basic School
Chibanga Basic School	Makungu Basic School
Chisanza Primary School	Malekani Primary School
Chitambi Basic School	Mantapala Basic School
Chitili Primary School	Matobwe Basic School
Ilizya Basic School	Maule Basic School
Isoko Basic School	Mbusa Primary School
Johnchivuta Basic School	Mikose Basic School
Kabamba Primary School	Minga Basic School
Kabuswe Basic School	Mipulya Primary School
Kaluba Primary School	Mukukamfumu Basic School
Kamukwamba Primary School	Mukumbe Basic School
Kamutozo Basic School	Mulobola Primary School
Kapembe Primary School	Mumbimfumu Primary School
Kapengwe Basic School	Rosa Basic School
Kapoma Basic School	Samu Primary School

Kaseya Primary School	Shimumbo Basic School
Kashitu Primary School	Simeo Mwakulya Primary School
Kasonde Basic School	Tunduwa Basic School
Kawele Basic School	Vitondo Primary School
Lameck Primary School	Wimba Basic School
Laurent Chita Basic School	

## ANNEX E: LIST OF STAKEHOLDERS INTERVIEWED

Name	Sex	Name	Sex	Name	Sex
Karen Zulu	F	Ethel Sikazwe	F	Ms. Chiti Mulenga	F
Able Musonda	M	Francis Kazembe	M	Mulenga Nyemba	M
Alan Chonde	M	Grace Yaluma	F	Mwamba Chasaya	F
Alick Mutale	M	Jacob Simfukwe	M	Mwila Chanda	M
Amos Lwando	M	Jimmy Chifunda	M	Nakamba Rachael	F
Amos Lwando	M	Johny Bwailya	M	Oswell Katooka	M
Bangwe Kunda	M	Jonas Chibesa	M	Pascol Malambo	M
Benson Sakala	M	Joseph Muchindika	M	Patrick Kanchense	M
Blessing Ndawe	F	Joseph Ntele	M	Patrick Mutila	M
Bodwin Sinkonde	M	Jovax Ngoma	M	Patrick Mwale	M
Brian Sibululuki Muleya	M	Kelvin	M	Peter Musolmali	M
Bwalya	M	Kelvin Sikombe	M	Rachel Silomba	F
Bwalya Emmanuel	M	Kenneth Zulu	M	Raphael Chifuwe	M
Catherine Mwansa	F	Leo Likuku	M	Robby Simbule	M
Chanda Chisha	M	Loveness Chifuntwa	F	Saviour Kafwanka	M
Christopher Katongo	M	Moecai Palangwa	M	Sebastian Viyaya	M
Christopher Mukosha	M	Moses Bwanga	M	Sichone Austin	M
Christopher Sinkamba	M	Mr Kanyantila	M	Simfukwe Arnold	M
Christopher Zyambo	M	Mr Ngosa Katoti	M	Simuntala	M
Daniel Mwanza	M	Mr. Imani Mapepala	M	Simuwelu Yoilan	M
David Chanda	M	Mr. Matafwali	M	Stanely Mumba Musonda	M
David Mbulo	M	Mr. Mwambazi	M	Teddy Musonda	M
Dean Mwemba	M	Mr.Kachinga Sichizya	M	West Chitundu	M
Dewin Donald Kaoma	M	Ms Gladys Mwamba	F	William Chikalipa	M
Edward Chiluba	M	Ms Maggie Siyeni	F	William Luchele	M
Emmanuel Siame	M	Ms. Charity Lungu	F	Yaledi Makombo	M

## ANNEX F: LIST OF PUPILS INTERVIEWED IN FOCUS GROUP DISCUSSIONS

Name	Sex	Name	Sex	Name	Sex
Abel Musonda	M	Gift Nambaya	F	Ms. Teresa Chisanga	F
Abraham Simwanza	M	Grace Kangwa	F	Ms. Vera Chibesa	F
Ainssa Namboye	F	Harriet Nambeya	F	Mwe Nakazwe	F
Alijanvwa Simutengo	M	Humphrey Chifunda	M	Naomi Nanyangwe	F
Asah Mulenga	F	Innocent Kasonde	M	Nelson Musonda	M
Award Mutale	M	James Mpundu	M	Niza Mwika	F
Benjamin Simutambi	M	Jeromy Simpasa	M	Oliver Mwene	M
Brian Mubanga	M	John Mukuka	M	Patrick Kabwe	M
Brian Singai	M	Joyce Nambemba	F	Peter Musonda	M
Bwalya John	M	Judith Mulenga	F	Petronella Mulenga	F
Charles Lusambu	M	Kangwa Chimanga	M	Praise Mfuno	F
Chipili Simwanza	M	Mainza Chulu	M	Prince Mwalula	M
Chisha Chansa	F	Manasseh Mbwili	M	Priscilla Chonto	F
Chrispin Simezi	M	Maxwell Mwila	M	Prudence Mwape	F
Daniel Hachintu	M	Memory Chongo	F	Purity Nanyinza	F
Danny Sichilima	M	Micheal Simwanza	M	Purity Palangoto	F
Diana Ntumbila	F	Milica Chewe	F	Regina Nakallizwe	F
Diyana Nakianksa	F	Morgan Simbeye	M	Richard Chanda	M
Doreen Namfukwe	F	Morris Mwene	M	Ruth Ngulube	F
Elias Simusokwe	M	Ms. Astrida Kasama	F	Safeli Siluagwe	M
Emeldah Mulenga	F	Ms. Auxilia Mwape	F	Saviour Simuchenje	M
Emmanuel Chengo M	M	Ms. Catherin Kasuba	F	Solomon Katongo	M
Esther Katongo	F	Ms. Dazzy Kachacha	F	Stephen Saswe	M
Eunice Chileshe	F	Ms. Dorothy Mutambala	F	Tecious Musonda	M
Evalisto Mukuka	M	Ms. Esther Lushinga	F	Thelma Chifita	F
Florence Nalwimbe	F	Ms. Idah Chansa	F	Tolbet Lwalika	M
Fridah Kabwe	F	Ms. Jacklin Chishimba	F	Violet Nanyangwe	F
George Mumbi	M	Ms. Janet Nsofwa	F	Viyce Musona	F
Gerald Chisanga	M	Ms. Maggie Mwelwa	F	Waggy Nachalwe	F
Gerald Pule	M	Ms. Musenge Mukobe	F	Wisdom Chilufya	M
Getruedy Namwila	F	Ms. Ruth Kabangwe	F	Zevyanji Siame	M
Gideon Mwenya	M				

## ANNEX G: LIST OF TEACHERS INTERVIEWED IN FOCUS GROUP DISCUSSION

Name	Sex	Name	Sex
Agness Kasote	F	Micah Nkonde Kashoba	F
Alexander Lupupa	M	Misheck Lukupwa	M
Alice Muchindo	F	Mrs Lunkola	F
B Mulenga	F	Ms. Anne Kamanda	F
Biggie Mazala	M	Ms. Bertha Sakala	F
Boyance Tambo	M	Ms. Lillian Mwimba	F
Chanda Mara	F	Ms. Monica Sondashi	F
Chanda Mulaisho	M	Ms. Patricia Chileshe	F
Chansa Mulolwa	M	Ms. Prisca Mwansa	F
Charles Mweni	M	Ms. Priscilla Mutale	F
Chiyapwa Musole	M	Ms. Rechel Mumba	F
Christine Nachula	F	Ms. Regina Matanga	F
Daniel Kalonga	M	Musanda Joseph	M
Darius Koni	M	Musukuma Wigan	M
E Chisala	F	Mutale H.C	F
Emelda Kaungu	F	Mutale Sampa	M
Evans Chimanga	M	N. Sichivula	M
Francis Kangwa	M	Ntuntu Chilufya Mulenga	M
Fridah Simwanga	F	Phillip Mbewe	M
James Katayi	M	Precious Siakapanga	F
Joackim Kangwa	M	Prison Chileshe	M
Jonathan Musonda	M	Queen Nachalwe	F
Kaimba Charity	F	Rightious Silomba	M
Kapasa Kalima	F	Rita Lyamba	F
Lazarous Kafwimbi	M	Shimwense Margaret	F
Leonard Kalumba	M	Stephen Nsama	M
M. Siliwmba	M	Vincent Phiri	M
Mathews Kapasa	M		

## ANNEX H: LIST OF PTA MEMBERS INTERVIEWED IN FOCUS GROUP DISCUSSION

Name	Sex	Name	Sex
Bernadette Mutale	F	Ms. Agnes Mulenga	F
Agnes Kayola	F	Ms. Beauty Chipampe	F
Agnes Makasa	F	Ms. Eliza Chishimba	F
Christine Mukuka	F	Ms. Eugenia Mulenga	F
Cyprian Chanda	M	Ms. Faustina Mumba	F
Darwin Simwina	M	Ms. Francisca Mwamba	F
Davis Chibale	M	Ms. Gladys Bwalya	F
Dennis Mulima	M	Ms. Jennifer Chanda	F
Duncan Kapambwe	M	Ms. Maines Chapabuku	F
Edmond Mukanga	M	Ms. Melody Mutambala	F
Elizabeth Makasa	F	Ms. Pascalina Sangweni	F
Enock Fufu	M	Peter Kabwe	M
Gilbert Sinyinza	M	Peter Mpongwe	M
Harriet Paundi	F	Pitson Mwanza	M
Ireen Nandazi	F	Protasio Chisembe	M
Joel Kaziya	M	Simpamba Arthur	M
Joseph Mutale	M	Sinkala Aaron	M
Kephas Katongo	M	Sinyinza Benard	M
Lawrence Mwango	M	Stephen Bwalya	M
Lawson Simunyola	M	Sydney Silwembe	M
Martin Mumbo	M	Wisdom Chawa	M
Mary Chisanga	F	Withus Sichilima	M

## ANNEX I: LIST OF PUPILS INTERVIEWED IN THE SURVEY

NAME	SEX	NAME	SEX	NAME	SEX
Aaron	M	Brenda	F	Clement Simutowe	M
Aaron Sikapundwa	M	Brian Mulenga	M	Cleopatra Mwenya	F
Aaron Sinyangwe	M	Bridget Mulenga	F	Cleophas Chishala	M
Abel Mwila	M	Bridget Nakamba	F	Cleopus Kalumba	M
Abraham Chilufya	M	Brighton Namuyemba	M	Cletus Ngandu	M
Ackim Sikanyika	M	Bright Msiska	M	Collins Kabaso	M
Ackim Silwamba	M	Bright Munkanta	M	Collins Mukuka	M
Agginellar Ngosa	F	Bright Simbeye	M	Collins Sikonda	M
Agness Kayange	F	Bulasho Mulenga	M	Constance Kasonde	F
Agness Nampokolwe	F	Bupe Lapuken		Constance Mutiti	F
Ackim Chongo	M	Bupe Nalengo	F	Cosmas Chola	M
Albert Sinkonde	M	Bwembya Sabu		Cresant Kambole	M
Albetine Mwansa	F	Candy Banda	F	Crivon Sikombe	M
Alice Nachilima	F	Caphas Musata	M	Croe Chisulo	
Alice Nalwimba	F	Careston Kalwa	M	Cynthia Nakaonga	F
Alick Kaputa	M	Catherine Chisembele	F	Cynthia Nanjela	F
Alick Mwandila	M	Cecilia Chipampe	F	D. Namukolo	F
Alifeyo Simutenda	M	Cephas Chilamo	M	Daliso Sakala	M
Alinjawa Simutengu	M	Chanda Musakanya		Daniel Chela	M
Amos Kampamba	M	Chansa Musonda		Daniel Mpangala	M
Anastasia Chileshe	F	Charity Chanda	F	Daniel Mwansa	M
Andrew Musonda	M	Cheetise Bwalya	F	Daniel Banda	M
Ani Kamili	F	Chella Kalonga	M	Danny Mpundu	M
Anthony Siame	M	Chipililo Simwanza	M	Danny Mugala	M
Arnold Nongo	M	Chipulu Mwila	M	Danny Munthali	M
Astridah Chiela	F	Chisha Chansa		Darlington Bwalya	M
Astridah Kapembwa	F	Chiti Nseluka	F	Davies Chishimba	M
Astridah Mutale	F	Chola Kalibo		Davison Lekhezya	M
Astridah Phiri	F	Chola Sinzomwa		Dazzy Kachacha	F
Aubrey Kaliilo	M	Chongo M. Kabemba		Dean Sikazwe	M
Aubrey Misale	M	Chrispine Musonda	M	Delas Nkweto	M
Beatrice Kakoma	F	Christ Chalumba	M	Delilah Matipa	F
Belinda Chilufya	F	Christabel Nkole	F	Delvister Nkandu	F
Ben Chitalu	M	Christabel Shula	F	Dennis Museka	M
Benjamin Musonda	M	Christine Chalumba	F	Dennis Siwakwi	M
Bertha Malama	F	Christopher Bwalya	M	Deophister Katongo	F
Bibian Kabamba	F	Christopher Chanda	M	Derrick Singandu	M
Billy Hachaamba	M	Christopher Kasonde	M	Diane Mulenga	F
Blessed Sinyinza	M	Clara Nachula	F	Dickson Siuluta	M
Blessing Kasale	F	Clara Phiri	F	Dilon Ng'onga	M
Blessings Kaonga	F	Clayton Mulenga	M	Docas Musonda	F
Boldly Silumbwe	M	Clement M. Kaseba	M	Dorcas Chiyemfwa	F
Boniface Makonde	M	Clement Mwamba	M	Dorcas Kabwe	F
Dorcas Nachilongo	F	Esther Lushinga	F	Gift Mulumbi	F
Dorcas Nakamba	F	Esther Nalungwe	F	Gift Mwansa	
Doria Misale	F	Esther Nyirenda	F	Gift Nachilima	F
Dorothy Mulenga	F	Ethel Namwila	F	Gift Nalwimba	F
Duncan Malama	M	Eucaria Kasawa	F	Gift Nankonde	F
Duncun Siwila	M	Eunice Musonda	F	Gift Nsonfwa	M

Dyness Mpundu	M	Evans Mwansa	M	Gift Nyondo	F
Dyness Mwambazi	F	Evans Sinkala	M	James Musonda	M
Edward Chansa	M	Evaristo Chimfwembe	M	James Mwangwa	M
Edward Mukupa	M	Evelyn Chanda	F	Jane Banda	F
Edward Muma	M	Evelyn Chansa	F	Jane Namumba	F
Elias Nyondo	M	Evelyn Mutale	F	Jane Namwila	F
Elinah Machilima	F	Evelyn Mwamba	F	Jane Nayangwe	F
Elizabeth Chansa	F	Evelyn Mwila	F	Janet Nsofwa	F
Elizabeth Chikapa	F	Everisto Mubanga	M	Janus Sinkonde	M
Elizabeth Kakanda	F	Evony Mwaba	F	Jasper Mulenga	M
Elizabeth Musonda	F	F Kapembwa		Jay Mwila	M
Elizabeth Mutamba	F	F. Sinyangwe	F	Jecap Silungwe	M
Ellen Mulenga	F	Fairness Mwaba	F	Jecup Nsama	M
Eluid Sinyangwe	M	Faith Kaponda	F	Jenifa Chisabi	F
Elvis Bwalya	M	Fallon Musonda	M	Jenipher Malishala	F
Emeldah Mwaba	F	Falason Mutambo	M	Jennipher Chongo	F
Emeldah Mwila	F	Febby Namulunga	F	Jennipher Mulenga Ngoma	F
Emely Nonde	F	Felina Akufuna	F	Jessy Musenge	F
Emma Mwamba	F	Felister Kabamba	F	Jester Namwawa	F
Emma Nankamba	F	Flavia Banda	F	John Kaoma	M
Emma Shikabi	F	Flavia Nakanyika	F	John Mutambo	M
Emmanuel	M	Florence Chileshe	F	John Mwansa	M
Emmanuel Mulenga	M	Florence Nankonde	F	Johnston Mulenga	M
Emmanuel Bwalya Mubanga	M	Francis Chibesa	M	Jonathan Sinkala	M
Emmanuel Chanda	M	Francis Kasembe	M	Jors Kajonu	M
Emmanuel Mulenga	M	Frank Kayombo	M	Joseph Kabwe	M
Emmanuel Sichalwe	M	Frank M. Siame	M	Joseph Mutambo	M
Emmanuel Silwenga	M	Fredrick Kabanda	M	Joseph Sinkamba	M
Emmy Mpundu	F	Fredrick Mwamba	M	Josephine Mumba	F
Enika Namumba	F	Friday Chipeta	M	Joshua Kasashi	M
Ephriam Chabala	M	Friday Nkole	M	Josphat Nyeleti	M
Ernest Chifwembe	M	Geoffrey Muchindo	M	Joyce Kanyembo	F
Ernest Sinyangwe	M	George Mazimba	M	Joyce Mazimba	F
Esnart Mwamboma	F	Gerald Simuchimba	M	Judith Mulenga	F
Esnart Naulat	F	Gershom M. Zimba	M	Julien Chiposa	F
Estella Nalwimba	F	Gift Chola		Juliet Mulenga	F
Esther Katongo	F	Gift Mishitu	F	Julius Katai	M
Esther Chanda	F	Gift Mponda	M	Julius Mulenga	M
Esther Kangwa	F	Gift Mulenga	F	Julius Mwansa	M
				Julyth Nanyangwe	F
Juma Chilekwa	M	Lombe Chilabanta	M	Melba Mupeni	F
Justin Bwalya	M	Lontia Nakazwe	F	Mellen Bwalya	F
Justine Makumba	M	Loveness Chileshe	M	Memory Chikobela	F
Justine Mwamba	M	Loveness Nampungwe	F	Memory Mwamba	F
Justine Silomba	M	Lucky Mwansa	M	Merixia Mulenga	F
Kabisa Simata		Lucy Namfukwe	F	Merlin Kamwambe	F
Kabwe Lungu		Lucy Nawale	F	Mervis Nankololwe	F
Kaluba Kumwenda		Luka Siwakwi	M	Micheal Safeli	M
Kangwa Chipango	M	Lukundo Sichalwe	M	Mika Nawale	F
Kangwa Kasitu		Lukundo Singoyi	M	Minniver Nakawala	F
Kangwa Mukuka	F	Luzango Nakazwe	F	Mirriam Mwaba	F
Kangwa Mwibwe		Lydia Chileshe	F	Mischeck Kangata	M

Karen Mulenga	F	Lydia Mulenga	F	Misheck Silwimba	M
Karen Nalengu	F	Maggie Nalungwe	F	Modgai Konkola	M
Karen Nanyinza	F	Maggie Namukonda	F	Mofya Kunda	M
Kaycious Siame	M	Mathews Silwimba	M	Monde Nasilele	
Kaziwe Silwemba	M	Mainess Nkowane	F	Monika	F
Keegan Chileshe	M	Majory Manda	F	Monti Chitalu	M
Kelvin Chanda	M	Makumba Chichetekelo	M	Morgan Mulenga	M
Kelvin Kalombe	M	Mapalo Muselema		Moria Nakalumba	F
Kelvin Mulenga	M	Martha Kapambwe	F	Moses Chanda	M
Kelvin Mulenga	M	Martha Nakaonga	F	Moses Chituta	M
Kelvin Mwansa	M	Martha Nakawala	F	Mpasa Simpungwe	M
Kennedy Gondwe	M	Martin Kapalala	M	Mubanga Bwalya	M
Kennedy Mutale	M	Martin Mwango	M	Mubanga Chipimo	
Kilness Mulenga	M	Martin Simuchenje	M	Mukuka Mukuka	
Lameck Sinkala	M	Marvelous Katongo	M	Mukwangu Sikalumbi	M
Lapson Katangala	M	Marvelous Mutale	F	Mummy Nachula	F
Laston Siwale	M	Marvin Simumba	M	Thomson Mutale	M
Lastone M. Katebe	M	Mary Chisanga	F	Mwaba Mulenga	
Lawrence Bwalya	M	Mary M.	F	Mylin Abigail Namonje	F
Lawrence Kantanga	M	Mary Manda	F	Nancy Nanyangwe	F
Lawrence Mfula	M	Mary Mukuka	F	Naomi Chileshe	F
Lawson Kapeta	M	Mary Mwenya	F	Naomi Mulenga	F
Leascloetra Mwango	F	Mary Mwewa	F	Naomi Mwenya	F
Lesia Nachilima	F	Mary Nachali	F	Naomi Nalengu	F
Lewis Kaoma	M	Mary Namonje	F	Naomy Kumbuyo	F
Lewis Mutale	M	Mary Namuzosha	F	Naomy Musonda	F
Lewis Mwenya	M	Mary Namwila	F	Natasha Chileshe	F
Lewis Sampa	M	Mary Zulu	F	Natasha Given	F
Lewis Simuchimba	M	Mathews Kumwenda	M	Natasha Mulenga	F
Lillian Chali	F	Mathews Mukuka	M	Natasha Nambeya	F
Limpo Mbangweta	F	Matrinah Mutambo	F	Natasha Namwawa	F
Lindah Chongo	F	Maureen Kunda	F	Nathan Mwango	M
Lizzy Mulenga	F	Maureen Panda	F	Nelson Musoa	M
Lloyd Mubanga	M	Maurice Kabwe	M	Nelson Sichilima	M
Nicholas Chomba	M	Prisca Nambela	F	Shadreck Chisala	M
Nicholas Mulenga	M	Prisca Ndoki	F	Shadreck Chola	M
Nilla Nalupya	F	Prisca Njenje	F	Shadrack Chanshi	M
Njavwa Mutambo	F	Priscilla Mutale	F	Shadrack Chisala	M
Norrin Makasa	F	Priscilla Bwembya	F	Shanaan Chikatula	M
Noward Chansa	M	Priscilla Chola	F	Sharon Musonda	F
Nsama Chisase		Priscilla Mumba	F	Siema Kapambwe	F
Nsama Mwango		Priscilla Sikute	F	Silia Musanga	F
Ntazana Mdawa		Prosper Malambo	M	Sillah Nachilima	F
Obed Chisha	M	Purity Namusika	F	Silvester Nyambe	M
Obvious Siwale	M	R. Lusale		Silvia Chishimba	F
Onasi Simfukwe	M	Rabeca Mwansa	F	Simon Mulenga	M
Oswarld Bwalya	M	Rabeca Bwalya	F	Simon Mwamba	M
Oscar Chitalu	M	Rabeca Mwamba	F	Sophia Besa	F
Oscar Katongo	M	Rabeca Nachilima	F	Starford Silwimba	M
Osward Chama	M	Rabeca Nanyangwe	F	Stella Mwamba	F
Oxilia Mama	F	Racheal Mwansa	F	Steven Sichelwe	M
Patricia Mulenga	F	Ravenda Mwila	F	Steven Sinfukwe	M

Patrick Banda	M	Regina Mulenga	F	Sunday Sikana	M
Patrick Sinyangwe	M	Resper Nayame	F	Suwilani Nalungwe	F
Patrinah Nayame	F	Rhoda Nalomba	F	Suza Mwaka	
Patson Sewakwe	M	Rhoda Nambela	F	Sydney Siame	M
Paul Simukonda	M	Rhodah Chisha	F	Sylvia Chipasha	F
Pauline Ng'andwe	F	Richard Chanda	M	Sylvia Kafwanka	F
Peggy Kaonga	F	Rita Musabaka	F	Sylvia Nakanyika	F
Peggy Nambeye	F	Robby Chanda	M	Sylvia Nanyinza	F
Perpetual Chilufya	F	Robert Sikalumbi	M	Tabu Chifwafawa	M
Petronella Nalawwe	F	Rose Mutondo	F	Tamara Soko	F
Precious Chiti	F	Roy Sampa	M	Taonga Kaonga	F
Precious Katongo	F	Ruben Musonda	M	Taonga Lungu	F
Precious Katongo	F	Ruth Kangwa	F	Teddy Simpasa	M
Precious Monga	M	Ruth Musukuma	F	Telence Malama	M
Precious Mudenda	F	Ruth Mwamba	F	Temwanji Namukonda	F
Precious Mulenga	F	Ruth Mwansa	F	Theresa Chisanga	F
Precious Musonda	F	Ruth Nkonde	F	Theresa Muchamba	F
Precious Mwansa	F	Salome	F	Theresa Nanjela	F
Precious Nakawala	F	Sam Sitima	M	Titus Mayoche	M
Presures Chongo	F	Samson Chileshe	M	Titus Sichilima	M
Pretty Nalumbwa	F	Samuel Chiluba	M	Trevor Kalembwe	M
Prince Kalasani	M	Sandra Kunda	F	Trinity Mpangangose	F
Prince Kayuni	M	Sara Mulenga	F	Tryness Kafula	F
Prince Mubita	M	Sara Nakazwe	F	Tryness Mutale	F
Prince Mwalula	M	Sara Nanfukwe	F	Vashly Mwale	M
Prisca Cauze	F	Savior Libayi	M	Vegilya Kambole	F
Prisca Chanda	F	Saviour Chileshe	M	Venus Sinyinza	M
Prisca Mwamba	F	Serah Nachizya	F	Vera Chewe	F
Vera Chibesa	F	Wellington Sikalumbi	M	Chanda	
Vernon Chisanga	M	Wells Siulapwa	M	Stephen Mwenya	M
Victor Chongo	M	William Kaluba	M	Precious Katongo	F
Victor Mulenga	M	William M. Kasanga	M	Justine Mubanga	M
Victor Sinkala	M	Wilson Mkandawire	M	Victor Mapulanga	M
Victoria Mapulanga	F	Wisdom Chapanswa	M	Jessicah kasongo	F
Violet Kabwe	F	Wizila Nachanda	F	Gervas nguluta	M
Vista Mazimba		Yona Sakala	M	Bridget changa	F
Vivien Mwila	F	Yorum Kayuni	M	Justine Chanda	M
Warren Sipanje	M	Zidane Sinkala	M	Emmanuel Mwansa	M
Wayip Silavwe	M				

## ANNEX J: LIST OF TEACHERS INTERVIEWED IN THE SURVEY

NAMES	SEX	NAMES	SEX	NAMES	SEX
A. Mvula	M	Brendah Bwalya	F	Daniel Mulenga	M
A. Sinkala	m	Brian Bwalya	M	David M. Kalumba	M
Aarons Chola	M	Brian Nkonde	M	Davies Kasongo	M
Abel Simwanza	M	Bridget Kunda	F	Davies Sikombe	M
Abiatry Chama	M	Carlos Mulenga	M	Deborah Witika	F
Abigail Mwansa	F	Carol Chileshe	F	Deliweh Theo	F
Abigail Chisenga	F	Catherine Kalimaposo	F	Denicias Mulenga	
Able Chela	M	Cecillia Bwalya	F	Dennis Kayawa	F
Able Sichilima	M	Cecillia Malambwa	F	Deria Ngandu	F
Abraham Mulenga	M	Cephas Mwanza	M	Deter Changala	M
Adrian Mutambala	M	Chanda Malaila	M	Dickson Chila	M
Aggrey Mulenga	M	Chanda Mulaisho	M	Dickson Mtonga	M
Agnes Katebe	F	Chanda Mulaisho		Dominic M. Mbazima	M
Agnes Musenge	F	Chansa Chewe	M	Dominic Mulenga	M
Agness Kasote	F	Charles Mweni	M	Dorcas Mwenge	F
Albert M. Musawa	M	Chileshe Mfula	M	Doreen Namutowe	F
Albert Nsama	M	Chisala Musonda		Edah Nalungwe	F
Albert Silwamba	M	Chisanga Ngambi		Edgar Sianga	M
Albina Chintata	F	Chitifi Cheleka		Edgar Zulu	M
Alex Africa Masuwa	M	Christabel Chota Ngosa	F	Edwin Musonda	M
Alex Chalwe	M	Christine Nachula	F	Edwin Mwaba	M
Alexander Lupupa	M	Christopher Bwalya	M	Edwin Mwansa	M
Alice Kabwe	F	Christopher Chalumba	M	Effort Semu	M
Alick Sichilima	M	Christopher Kangwa	M	Elizabeth Kabwe	F
Allan Namoto	M	Christopher K. Ngoma	M	Elizabeth Mwewa	F
Amosy L. G. Ngulube	M	Clara Lombe	F	Elizabeth Ng'onga	F
Andrew Kumwenda	M	Cleanwell Simwawa	M	Emeldah Kaungu	F
Annie Mwansa	F	Clement Kalifwasa	M	Emmah Bwanga	F
Anthony Kanyumbu	M	Clement Kaluba	M	Emmanuel Bwalya	M
Astridah Mutale	F	Clement K. Chapenuka	M	Emmanuel Lubinda	M
Banwell Simbeya	M	Clement Muchimba	m	Emmanuel Shindano	M
Batister Mukupa	F	Collins Chanda	M	Ernest Changa	M
Beatrice Chipulu	F	Comfort Musonda	F	Ernest Chintu	M
Benideter Mungalu	F	Conrad Kunda	M	Ernest K. Sichone	M
Benjamin Chipimo	M	Cosmas Kabuswe	M	Ernest M. Mukuka	M
Bertha Mumba	F	Cosmas Kapambwe	M	Estella Chifita	F
Bertha Phiri	F	Costain Kakoma	M	Estella Musenga	F
Bevin Sichilindi	M	D. Koni	M	Esther Nayangwe	F
Biggie Mazala	M	Damally Kaoma	M	Eugine Pintu	M
Boldwin M. Chilengwe	M	Daniel C. Mulenga	M	Euphrasia Mubanga	F
Bornface Mayanga	M	Daniel Chibwe	M	Eusebio Bwalya Kafula	F
Boswel Chibale	M	Daniel Kalonga	M	Evanie Mwamba	M
Brenda Chilangwa	F	Daniel Luchembe	M	Evans Bufumi	M
Evelyn Nachilya Mukubesa	F	J. Mulenga	F	Kenneth G. Sinkololwe	M
Evelyn Nshindano	F	Jacintha C. Chileshe	F	Kezzy Bangula Banda	M
Exildah Chintima	F	Jackline Mulenga	F	Khumalo C.G. Maseko	M
Ezekiel Mulenga	M	Jackson Mwenya	m	Killian Bwalya	M
Felistus Chomba Makoba	F	Jackson Sinkala	M	Lawrence Siame	M
Felix Bwembya	M	Jacob Kambibaya	M	Lazarus Kafwimbi	M

Festus Kabwe	M	James Mhango	M	Leonard Nkandu	M
Filai Bulaya	M	Jane Nachilombe	F	Lestaph Simfunkwe	M
Flavia Nakalumbi	F	Jean Bwalya	F	Lillian Chewe	F
Florence B. Mulenga	F	Jenipher N. Sikapizye	F	Lillian K. Nayame	F
Florence Musonda	F	Jenny N. Kapotwe	F	Lillian Munyenyembe	F
Francis Mulenga	M	Jeremiah Makungu	M	Lillian Musonda	F
Francis Musonda	M	Jessy Nambeya	F	Lillian Silomba Mwimba	F
Francis Phiri	M	Jester Nalwimba	F	Linos Musonda	M
Frank Silomba	M	Joackim Kashishi	M	Lloyd Silungwe	M
Fred Misale	M	John Jonathan Musonda	M	Loveness Mulenga	F
Fredrick Simwanza	M	John Mubanga	M	Lucy Chisengo	F
Fridah Chitala Simwinga	F	John Mwape Mukupa	M	Lucy Kanyika	F
Gamaliel Simutenda	M	Jollies Mukala	M	Luther Bwalya Kaunda	M
Geoffrey Kasongole	M	Joseph Bwalya	M	Mable Kanene	F
George Mugala	M	Joseph Chinshingwa	M	Mable Mwila	F
George Mwandila	M	Joseph Kalemba	M	Mable Nambela	F
Gift F. Namonje	F	Joseph Twela	M	Mable Nanyinza	M
Gladys Mwaba	F	Josephine Chipande	F	Magret B. Mulenga	F
Gloria Kafula	F	Joyce Kakungu	F	Malikana Mukumbuta	F
Godfrey Banda	M	Joyce Mwape	F	Margaret Mulumbwa	F
Godfrey Chitalu	M	Jubeck Mutamba	M	Margaret M. Mutambo	F
Grace Mulenga	F	Judith Chapuswike	f	Margaret Namutengu	F
Gracious Kotwa	F	Judith Chilumba	F	Margret Mutale	F
Grandwell M. Chipampe	M	Juliet Mulenga	M	Martha Chitala	M
Haggai Chipimo	M	Juliet Mulenga	F	Martha Nalavwe	F
Haggai Sikazwe	M	Julius Kamwevu	M	Martha N. Mungale	F
Henry Muma Mwape	M	Justine Mubanga	M	Martin Mwange	M
Hildah Chengo	F	K. M. K. Chilufya	F	Martin Silupunbwe	M
Hillary Chiposa	F	K. M. Mwaba	F	Mary M. Nankonde	F
Humphrey Simpamba	M	Kanyembo Mwandwe	M	Mary Mwango Chewe	F
Ikezia Nangoma	F	Kapasa Kalima	F	Mary N. Mutoya	F
Imasiku Likando	F	Kasonde R. Bwalya	F	Mary Namwawa	F
Ireen B. Mumba	F	Kaunda Chongo	M	Masauso Mumba	M
Isabel C. Kafwimbi	F	Kelvin Sikombe	M	Matakala Kamwengo	F
Issac Mwape	F	Kemmy Mukwela	M	Mathews C. Siame	M
Itty Kalinda	F	Kennedy Chandika	M	Mathews Chishimba	M
Ivy Musonda	F	Kennedy Kambole	M	Mathews Ngiuni	M
J. Katai	M	Kennedy Kangwa	M	Mathias Mululo	M
Evelyn Nachilya Mukubesa	F	J. Mulenga	F	Kenneth G. Sinkololwe	M
Evelyn Nshindano	F	Jacintha C. Chileshe	F	Kezzy Bangula Banda	M
Matildah Mulenga	F	Osia Nsofwa Chilekwa		S. N. Nyembe	F
Matildah Mulenga	F	P. Siame	M	Samson Silwimba	M
Maxwell Kabulo	M	P.K. Katewa		Samuel Lombe	M
Maxwell Simuwelu	M	Patricia Chileshe	F	Sandra Mukale	F
Maybin Mukuka	M	Patrick Chihinga	M	Sanny Banda	M
Melody Kabwe	F	Patrick Ngosa	M	Seddy Sijabala	F
Memory Mulenga	F	Pavina Kunda Mukuka	F	Shadrack Kamindwa	M
Mercy Chali	F	Peris Mugala	m	Shellah Chisha	F
Merrian Muyabala Mauluka	F	Peter M. Chanda	M	Shula Banda	M
Mestridah Mwansa	F	Peter Mumba	M	Sichechani Mubuyaeta	
Mirriam Mumbi	F	Petronella M. Kapeya	F	Simon Silomba	M
Misheck Lukupwa	M	Philip Zulu	M	Simon Silwimba	M

Missy Phiri	F	Phostina Hamweemba	M	Smart Simukulwa	M
Moddy Chewe	M	Potias Amon Phiri	M	Stanley M Munsaka	M
Monica Nsokolo	F	Precious S Haambiya	F	Stephanie Mwewa	F
Monje Nalwamba	F	Pricilla Mutale	F	Stephen Chituka	M
Morris Chama	M	Pricilla Mwanamambo	F	Stephen Kasonde	M
Morris Mbao	M	Prisca Chileshe	F	Stephen Mfimba	M
Morris Siame	M	Prisca Chisanga	F	Stephen Mwenya	M
Moses Chongo	M	Prisca Mutsakani	F	Steward Mazimba	M
Moses Funda	M	Prisca Mwansa	F	Sunday Siame	M
Moses Mbulo	M	Priscilla Nalwenga	F	Sydney Silwembe	M
Moses Mwila	M	Prudence Chishala	F	Tarcisius Kasale	M
Moses Ngoma	M	Queen Munthali	M	Tendai Zwaitwa Dumba	M
Moses Silungwe	M	Racheal Mumba	F	Theresa Shimulopwe	F
Mrs M.P. Musonda	F	Racheal Nakamba	F	Thomas Silengo	M
Mrs Musonda	F	Rapheal Chisongo	M	Vennice Mwelwa	M
Mulenga Bweupe	M	Regina B. Ng'andu	f	Victor Mwanza	M
Mulenga Chibeka		Regina Mulima Sikota	F	Victoria Mwashinkumbi	F
Mushiko Liyungu	F	Remmy Chileshe	M	Vincent Mwale	M
Mwale Mumba	M	Rhoda Mukisi	F	Vincent Phiri	M
N. C. Mwape	M	Rhoda Ngoma	F	W. C. Shangai	M
Nakaponda M. Nakaponda	F	Rhodah Mulenga	F	White Lambwe	M
Nathalia M. Silumesi	F	Richard Siwila	M	Wiggan Musukuma	M
Nayota Mubiana	F	Richmond Chilekwa	M	William M. Simukonda	M
Nchimunya Masumo	F	Righton Silomba	M	Yolanta Chirwa	F
Nicholas Musonda	M	Robert Simbaye	M	Yombwe M. Kabunda	F
Ntinda Nakazwe	F	Ruth Akibu	F	Yorum Chikola	M
Obino Kampamba Chisanga	M	Ruth Musonda	F	Yvonne Mulenga	F
Oscar Mutale Chewe	M	S. B. Chimboto	M	Yvonne Munsongo	F
Matildah Mulenga	F	Osia Nsofwa Chilekwa		S. N. Nyembe	F
Matildah Mulenga	F	P. Siame	M	Samson Silwimba	M
Maxwell Kabulo	M	P.K. Katewa		Samuel Lombe	M
Maxwell Simuwelu	M	Patricia Chileshe	F	Sandra Mukale	F
Maybin Mukuka	M	Patrick Chihinga	M	Sanny Banda	M
Melody Kabwe	F	Patrick Ngosa	M	Seddy Sijabala	F

## ANNEX K: EVALUATION MATRIX

Evaluation Question	Sub question (will help answer the key evaluation question)	Indicator/ Performance Measure (information needed to answer the question)	Data Source (primary and or secondary)	Data Collection Instrument	Data Analysis Plan
I. To what extent were the activity's targets achieved and why	<ul style="list-style-type: none"> <li>Assess whether the activity managed to achieve planned results focusing on quality/quantity of outputs for this activity (i.e. construction works, awareness levels of good hygiene among intended beneficiaries of the activity, strengthening systems involved in School WASH implementation/governance, and also lessons on what works, etc.). Any changes that have occurred during implementation of this activity, both the external environment or internal to the activity, must be indicated in the evaluation report especially where they may have had a bearing on activity outputs and outcomes.</li> </ul> <p>(EVALUATION PURPOSE: I. To learn to what extent the activity's objectives and goals - at all result levels particularly focusing on WASH hardware development, training in hygiene education,</p>	<p>Main indicators:</p> <ol style="list-style-type: none"> <li>Number of constructed school latrines, (teachers' houses, Double VIP latrines for girls/boys, Single VIP latrines for girls, etc.)</li> <li>Number of school water points established,</li> <li>Percentage of school and community water points in the operation area functioning at any given time.</li> <li>Percentage of target schools with functioning hand washing facilities/#built</li> <li>Increased percentage of households with WASHE basic needs.</li> <li>Reduction in diarrhoea cases among children and adults in the operation areas.</li> <li>Reduced absenteeism of boys/girls and teachers.</li> <li>Increased % of girls/boys</li> </ol>	<ol style="list-style-type: none"> <li>ED ASSIST (EMIS)</li> <li>Triangulated with purposive survey of the 950 schools in 12 districts</li> </ol>	<ol style="list-style-type: none"> <li>Grids based on data required</li> <li>Questionnaire with closed and open-ended questions</li> </ol>	<ol style="list-style-type: none"> <li>statistical</li> <li>Statistical analysis (SPSS)</li> </ol>

	community participation and systems' strengthening - have been achieved; 3. To assess the contribution of the activity interventions to improving student and teacher contact time (time on task), learner attendance and student/teacher retention.)	that finish basic education (grade 7 and grade 9) 8. Number of water points constructed (conventionally drilled boreholes, manually drilled wells) 9. Number of water points rehabilitated (upgraded, repaired, etc.) 11. Number of peer educators trained 12. Number of PTA Committees, Administrators and Teachers trained in SOMAP and hygiene education			
2. What has been the level of functionality of the innovative WASH technologies and approaches and responsiveness of the beneficiaries to them in the activity?	Assess the enablers and barriers to utilizing these innovative technologies and approaches. Assess the best practices and lessons learned during the application of the innovative technologies and approaches in the activity.  (EVALUATION PURPOSE: 4. To review the cost-effectiveness and sustainability of the innovative approaches for WASH service provision in the pilots tested in this activity; and 5. To assess the sustainability of the activity in terms of future replication and		a) Limited survey questions  b) KII  c) FGDs with parent & Student groups	a) questionnaire  b) Interview guide  c) FGDs with parent groups	a) statistical  b) excel: frequencies  c) excel: frequencies

	implementation by the Government of Zambia.)				
3. Can the approaches applied in this activity be replicated and managed sustainably by the local institutional framework for the Education and WASH sectors of Zambia?	(EVALUATION PURPOSE: 2. To inform the design of the possible future development of a national guideline for the implementation of WASH in Schools; 4. To review the cost-effectiveness and sustainability of the innovative approaches for WASH service provision in the pilots tested in this activity.)	•	a) Limited survey questions b) KII	a) questionnaire b) Interview guide	a) statistical b) excel: frequencies c) excel: frequencies
4. Is there a link between provision of safe and adequate WASH facilities in Schools and pupil school attendance and teacher retention? How relevant were the activity interventions in improving student/teacher school attendance and retention?	Assess the relationship between provision of WASH facilities and services in schools to pupil school attendance and teacher/student retention, particularly for women and girls. Comparisons could include: attendance before and after the activity; attendance rates between schools that didn't receive any support compared to those that did; and attendance rates among the different schools within the activity that received different forms of support.		a) Limited survey questions b) KII c) FGDs with parent & Student groups	a) questionnaire b) Interview guide c) FGDs with parent groups	a) statistical b) excel: frequencies c) excel: frequencies

## ANNEX L: PARTICIPATORY INFORMATION SHEET

UNZAREC

FORM 1a



**THE UNIVERSITY OF ZAMBIA  
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES**

Telephone: 290258/  
Fax: +260-1-290258/293937

P O Box 32379  
Lusaka, Zambia

E-mail [drgs@unza.zm](mailto:drgs@unza.zm)

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### **HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE**

#### **PARTICIPANT INFORMATION SHEET**

**TITLE OF RESEARCH:**

End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Activity

**PURPOSE OF THE STUDY:**

USAID/Zambia seeks to undertake a performance evaluation of the School Water Supply, Sanitation and Hygiene (WASH) and Quality Education activity which began in March 2009 in 12 districts in Northern and Muchinga provinces. This performance evaluation will focus on:

Establishing whether the School WASH and Quality Education activity has achieved the activity goals/objectives over the implementation period.

**DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT:**

The study is to assess how the activities implemented under the WASH and Quality Education project was implemented; how the activity is perceived and valued; determining whether expected results occurred; and answering other questions that are pertinent to the design, management and operational decision making of this activity. Your part in this evaluation shall last for about 15 minutes.

**CONFIDENTIALITY:**

All information you provide us will be destroyed once we complete the study. Only study staff will have access to information you provide. You will never be named in a report. The consent form shall be separated from the questionnaire after the interviews and kept separately to ensure that no one is able to link you with the responses you provided.

### **VOLUNTARY PARTICIPATION AND WITHDRAWAL:**

This research has been reviewed and approved by the Humanities and Social Science Ethics Committee of the University of Zambia. An Ethic committee is a committee that reviews research studies in order to help protect participants. Nothing will happen to you if you choose not to be in the study. You are free to decide not to participate. If you feel uncomfortable about any question, you may choose not to answer. You may also decide to withdrawal at anything during the interview and nothing would happen. Your participation is purely voluntary and not under compulsion.

### **RISKS AND BENEFITS:**

There are no physical risks to you for participating in this study. Some of the questions may make you feel uncomfortable. You do not have to answer any question that you do not want to. You are also free to end the interview at any time.

There is no direct benefit to you for taking part in this study. However this information will help us to better understand issues related to improving access to water and sanitation services in schools and to promoting improved learning outcomes.

### **CONTACTS FOR QUESTIONS**

If you want additional information, or have any question regarding your rights as a survey participant, you may please

- Mr. Joseph Limange (Principal Investigator) at +233 20 13 555 37 or [jjimange@ibtci.com](mailto:jjimange@ibtci.com)
- **Chairperson, Humanities and Social Sciences, Research Ethics Committee, University of Zambia.**
- **The Director, Directorate of Research and Graduate Studies.**

## ANNEX M: INFORMED CONSENT SCRIPTS

UNZAREC

FORM 1b



**THE UNIVERSITY OF ZAMBIA  
DIRECTORATE OF RESEARCH ND GRADUATE STUDIES**

Telephone: 290258/  
Fax: +260-1-290258/293937  
Lusaka, Zambia  
E-mail [drgs@unza.zm](mailto:drgs@unza.zm)

P. O. Box 32379

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**HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE  
CONSENT FORM**

(Translated into vernacular if necessary)

**TITLE OF RESEARCH:**

**REFERENCE TO PARTICIPANT INFORMATION SHEET:**

1. Make sure that you read the Information Sheet carefully, or that it has been explained to you to your satisfaction.
2. Take note of whether tape or 'audio' recording has been used.
3. Your participation in this research is entirely voluntary, i.e. you do not have to participate if you do not wish to.
4. Refusal to take part will involve no penalty or loss of services to which you are otherwise entitled.
5. If you decide to take part, you are still free to withdraw at any time without penalty or loss of services and without giving a reason for your withdrawal.
6. You may choose not to answer particular questions that are asked in the study. If there is anything that you would prefer not to discuss, please feel free to say so.
7. The information collected in this interview will be kept strictly confidential.
8. If you choose to participate in this research study, your signed consent is required below before I proceed with the interview with you.

---

**VOLUNTARY CONSENT**

I have read (or have had explained to me) the information about this research as contained in the Participant Information Sheet. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I now consent voluntarily to be a participant in this project and understand that I have the right to end the interview at any time, and to choose not to answer particular questions that are asked in the study.

My signature below says that I am willing to participate in this research:

Participant's name (Printed):

.....  
.....

Participant's signature: ..... Consent Date:

.....

Researcher Conducting Informed Consent (Printed)

.....

Signature of Researcher: ..... Date:

.....

Signature of parent/guardian/Teacher: ..... Date:

.....

## ANNEX N: STUDENTS SURVEY

Date :          
**D D M M Y Y Y Y**

Interviewer's Code and Name:   \_\_\_\_\_

Start Time:

### LOCATIONAL INFORMATION

Province Code and Name:  \_\_\_\_\_

District Code and Name:   \_\_\_\_\_

Community Code and Name:    \_\_\_\_\_

### INSTITUTIONAL INFORMATION

School Name: \_\_\_\_\_

School Type:  1. Public School  2. Community School

Locality Type:  1. Urban  2. Rural

Beneficiary Status:  1. Phase I  2. Phase II  3. Non-Beneficiary

### RESPONDENT CHARACTERISTICS

Sex:  1. Female  2. Male

Respondent Status:  1. Grade 5  2. Grade 6  3. Grade 7  4. Grade 8  5. Grade 9

Respondent's WASH Status:  1. Peer Educator  2. Non-Peer Educator  3. Others \_\_\_\_\_

NO	QUESTION	CODES	SKIPS
1	Is there a WASH committee in your School?	Yes .....01 No .....02	Q4 -->
2	Is the committee active?	Yes .....01 No .....02 N/A .....98	
3	<b>WASH Peer Educators Only:</b> How would you rate your involvement in the	Very active .....01	

	work of WASH as peer educator?	Somehow active .....02 Not active .....03  N/A..... 98	
4	How far do you travel from your home to the nearest safe drinking water point?	Less than 500m .....01 About 500m.....02 More than 500m but less than 1km.....03 Less than 1km.....04 Don't Know.....97	
5	Has the WASH Project constructed a water facility in your school?	Yes .....01 No .....02	
6	Has the WASH Project constructed a sanitation facility in your school?	Yes .....01 No .....02	<b>Q8</b> ----->
7	Do you use this sanitary facility?	Yes .....01 No..... ..02 N/A .....98	
8	Do you have WASH hand washing facilities in your school?	Yes .....01 No .....02	<b>Q10</b> ----->
9	Do you use this hand washing facility in your school?	Yes .....01 No .....02	

10	Has the WASH Project constructed a water facility in your community?	Yes .....01 No .....02	
11	Does your household have its own sanitary facility (latrine) at your house?	Yes .....01 No..... ...02	
12	Have you experienced any diarrhea related illness in the last two weeks?	Yes .....01 No .....02	
13	Have any member of your household experienced any diarrhea related illness in the last two weeks?	Yes .....01 No .....02	
14	On what occasions must one wash his/her hands? <b>Multiple answers allowed</b>	No need to wash hands.....00 Before preparing food.....01 Before eating food /taking meal .....02 Before feeding child .....03 After cleaning child's bottoms.....04 After coming from washroom .....05 After eating .....06 After cleaning house .....07 Other _____ ..96 (specify)	
15	On which of these occasions mentioned in Q 12 must we wash our hands with soap? <b>Multiple answers allowed</b>	No need to wash hands with soap.....00 Before preparing food.....01 Before eating food /taking meal .....02 Before feeding child .....03 After cleaning child's bottoms.....04 After coming from washroom .....05 After eating .....06 After cleaning house .....07 Other _____ ..96	

		(specify)	
16	Do you think similar WASH project support should be provided to other schools and communities?	Yes .....01 No .....02	
17	Have you seen any IEC materials educating people on WASH?	Yes .....01 No .....02	<del>Q17</del>
18	Where did you see them?	School .....0 1 Home .....02 Your community .....03 Another community.....04 N/A..... ...98	
19	How do you understand this poster ( <b>Interviewer show poster and record level of understanding</b> )	Excellent..... 01 Good .....02 Average .....03 Weak..... 04 Not at all .....05	
20	Reading ability of Respondent ( <i>Interview: <b>DO NOT ASK.</b> Give a passage in student grade's English book for respondent to read and assess accordingly</i> )	Good..... .01 Averaged .....02 Not Good .....03 Poor	End

		.....04	
--	--	---------	--

End Time:

--	--	--	--

## ANNEX O: TEACHERS AND HEAD TEACHERS SURVEY

Date:         Interviewer's Code  
D D M M Y Y Y Y and Name:

Start Time:

### LOCATIONAL INFORMATION

Province Code and Name:  \_\_\_\_\_

District Code and Name:   \_\_\_\_\_

Community Code and Name:    \_\_\_\_\_

### INSTITUTIONAL INFORMATION

School Name: \_\_\_\_\_

School Type:  1. Public School  2. Community School

Locality Type:  1. Urban  2. Rural

Beneficiary Status:  1. Phase I  2. Phase II  3. Non-Beneficiary

### RESPONDENT CHARACTERISTICS

Sex:  1. Female  2. Male

Respondent Status:  1. Teacher  2. Head Teacher

Respondent's WASH Status:  1. WASH Coordinator  2. Teacher's Council Member  3. None

98. Others (Specify) \_\_\_\_\_

NO	QUESTION	CODES	SKIPS
1	Is there a WASH committee in your school?	Yes .....01 No .....02	<b>Q3</b>
2	Is the committee active?	Yes .....01 No .....02 N/A .....99	
3	Is there a WASH teachers council in your school?	Yes .....01 No .....02	<b>Q6</b>

4	Is the council active?	Yes .....01 No .....02 N/A .....99	
5	<b>Teachers' council members only:</b> How would you rate your involvement in the work of WASH in your school?	Very active .....01 Somehow active .....02 Not active .....03 N/A.....99	
6	How far do you travel from your home to the nearest safe drinking water point?	Less than 500m .....01 About 500m.....02 More than 500m but less than 1km.....03 Less than 1km.....04 Don't Know .....97	
7	Has the WASH Project constructed a water facility at your school?	Yes .....01 No .....02	<b>Q12</b>
8	Do you use this water facility constructed by the project for your school?	Yes .....01 No .....02	
9	Was your school involved in the decision making process for the construction of the water facility?	Yes .....01 No .....02	<b>Q11</b>
10	At what level was your school involved? <b>Multiple answers allowed</b>	Planning .....01 Organizing resources .....02 Construction .....03 Monitoring construction .....04 Education .....05 Others (Specify)_____98 N/A .....99	
11	What was the school's contribution towards the construction?	No Contribution .....01 Finance .....02 Labor .....03	

		Land .....04 Materials .....05 Ideas .....06 Don't Know .....97 Others(Specify)_____98 N/A .....99	
12	Has the WASH project constructed a sanitary facility (latrine) at your school?	Yes .....01 No .....02>	<b>Q17</b>
13	Do you use this sanitary facility (latrine)?	Yes .....01 No .....02	
14	Were you involved in the decision making process for the construction of the sanitary facility?	Yes .....01 No .....02	<b>Q16</b>
15	At what level were you involved? <b>Multiple answers allowed</b>	Planning .....01 Organizing resources .....02 Construction .....03 Monitoring construction .....04 Education .....05 Others (Specify)_____98 N/A .....99	
16	What was the school's contribution toward the construction?	No Contribution .....01 Finance .....02 Labor .....03 Land .....04 Materials .....05 Ideas .....06 Don't Know .....97 Others(Specify)_____98 N/A .....99	
17	Has the WASH Project constructed a sanitary facility in your house?	Yes .....01 No .....02>	<b>Q19</b>
18	Do you use this sanitary facility	Yes	<b>SKIP</b>

	constructed at your house?	.....01 No .....02	<b>TO Q20</b>
19	Do you have you own sanitary facility (latrine) at your house?	Yes .....01 No.....02	<b>SKIP TO Q23</b>
20	Were you involved in the decision making process for the construction of the sanitary facility (latrine) at your house?	Yes .....01 No .....02	<b>22</b>
21	At what level were you involved? <b>Multiple answers allowed</b>	Planning .....01 Organizing resources .....02 Construction .....03 Monitoring construction .....04 Education .....05 Others (Specify)_____98 N/A .....99	
22	What was the school's contribution towards the construction?	No Contribution .....01 Finance .....02 Labor... .....03 Land .....04 Materials .....05 Ideas .....06 Don't Know .....97 Others(Specify)_____98 N/A .....99	
23	Have you experienced any diarrhea related illnesses in the last two weeks?	Yes .....01 No .....02	
24	Have any member(s) of your household experienced any diarrhea related illness in the last two weeks?	Yes .....01 No .....02	
25	Do you prepare lesson plans? Or If Head Teacher: Do you have a school management plan?	Yes .....01 No .....02	
26	On what occasions	No need to wash hands.....00	

	must one wash his/her hands? <b>Multiple answers allowed</b>	Before preparing food.....01 Before eating food /taking meal .....02 Before feeding child .....03 After cleaning child's bottoms.....04 After coming from washroom .....05 After eating .....06 After cleaning house .....07 Other _____ 98 (specify)	
27	On which of these occasions mentioned in Q 12 must we wash our hands with soap? <b>Multiple answers allowed</b>	No need to wash hands with soap.....00 Before preparing food.....01 Before eating food /taking meal .....02 Before feeding child .....03 After cleaning child's bottoms.....04 After coming from washroom .....05 After eating .....06 After cleaning house .....07 Other _____ ..98 (specify)	
29	Do you think similar WASH Project support should be provided to other schools and communities?	Yes .....01 No .....02	
30	Have you seen any IEC materials educating people on WASH?	Yes .....01 No .....02	----->Q32
31	Where did you see them?	School .....01 Home .....02 Your community .....03 Another community.....04 N/A.....99	
32	How do you understand this poster <b>(Interviewer show poster and record</b>	Excellent .....01 Good .....02 Average .....03	<b>End</b>

	<b>level of understanding)</b>	Weak .....04	
		Not at all .....05	

End Time:

## ANNEX P: MASTER GUIDE FOR FGD AND STAKEHOLDER INTERVIEWERS

**Interviewer must select appropriate questions from the master list to be administered. Selection of questions is dependent upon the individual/group being interviewed.**

Introductory remarks

Thank you for agreeing to talk with us and for your participation in this evaluation. International Business & Technical Consultants, Inc. (IBTCI) has been contracted by the United States government through the United States Agency for International Development (USAID) to carry out this end-term performance evaluation for USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Activity

The purpose of this evaluation is to assess if the project was able to achieve its target, the effectiveness of the technology used, and the ability to sustain and transfer similar technology to other parts of Zambia. We believe that you are in a good position to tell us about your views to enrich this evaluation.

We anticipate the discussion will last for about an hour and appreciate any information you can provide. Your answers to the questions we will ask are completely confidential and will be reported without names.

### **Achievement of Targets**

1. What is your impression of girl enrolment in this school since 2009?
  - a. Do you think it has increased or reduced?
  - b. Why do you answer so?
  - c. What do you think is the reason for this situation?
  - d. Could enrolment have been increased better with another approach?
  - e. What do you think could have been done better to improve enrolment?
2. What is your impression of girl dropout in this school since 2009?
  - a. Do you think it has increase or reduced?
  - b. Why do you answer so?
  - c. What do you think is the reason for this situation?
  - d. Could girl dropout have been reduced better with another approach?
  - e. What do you think could have been done better?
3. What is your impression of teacher retention in the past four years in this school?
  - a. Do you think it has increased or reduced?
  - b. Why do you answer do?
  - c. What do you think is the reason for this situation?
  - d. Could teachers have been retained better with another approach?
  - e. What do you think could have been done better by the project to retain teachers?
4. Has DAPP District facilitators (coordinators) been organizing monthly meetings on WASH activities?
  - a. What are the major issues discussed during these meetings?
5. Does this community carry out quarterly review meetings in this school?
  - a. Who are mostly the participants of this meeting?
  - b. What are the major issues that are discussed during these meetings?
6. Is there a teachers' council on WATSAN in this school?
  - a. Who is the coordinator of this council?
  - b. Has it been trained?

- c. Who organized the training?
  - d. How long did the training last?
7. Are you aware of WASH peer educators in this school?
    - a. Can you mention the names of some of the members of the group?
    - b. Have they been trained?
    - c. If yes who organized the training?
    - d. What were the major topics covered by the training?
  8. What are some of the activities of this WASH peer educators in this school?
    - a. Organize duty roster?
    - b. Organize cleaning campaigns?
    - c. Organize community campaigns?
    - d. Deliver key messages during morning assembly?
    - e. Sketches during school functions?
    - f. Develop posters with WASH messages and paste in class rooms?
  9. Are you aware of a WASH community mobilizer (area leader) in this community?
    - a. Who is s/he?
    - b. What work does s/he do in relation to the role as a WASH community mobilizers?
    - c. How effective is s/he in carrying out these responsibilities?
  10. Are you aware of a pump mender in/or around this community?
    - a. Who is s/he?
    - b. What is his/her responsibility?
    - c. How effective is s/he in accomplishing these responsibilities?
  11. Are you aware of a latrine mason in/or around this community?
    - a. Who is s/he?
    - b. What is his/her responsibility?
    - c. How effective is s/he in accomplishing these responsibilities?
  12. How supportive has the district been to this school?
    - a. Do you think it is sufficient?
    - b. What further support do you expect from the district?
    - c. Would you say this support has improved since the commencement of the WASH project's support to your school?
    - d. Why do you answer so?
  13. What are your views about the construction works going on under the WASH Project on the following areas? Please explain what you think could be done better?
    - a. Type of pump
    - b. Cost of construction
    - c. Ease of repairs of the water facility
    - d. Ease of repairs of the sanitation facility
    - e. Availability of spare parts for the facilities
    - f. Availability of repairers
    - g. Durability of the technology and facilities.

#### **Innovative Water Supply Technologies**

*Please ask the questions below on each innovative technology (listed below) that the school/Teacher benefited from the WASH Project:-*

- ~ Manual drilling hand pumps
- ~ Push & lift pumps (India Mark II with non-return pipes)
- ~ Spring protection

- ~ Tippy Taps hand washing technology
  - ~ School hand-washing tanks
  - ~ Talking walls
15. What is the Level of Functionality of the ... (name of facility)?
    - a. When was the facility constructed/rehabilitated?
    - b. How effective has the facility been working since its construction?
    - c. Does it sometime malfunction? Why do you answer so?
    - d. How often has it malfunctioned since its contraction/rehabilitation?
    - e. How long did it take for it to be repaired and start working again?
    - f. What led to the malfunctioning of the water source?
    - g. How is the facility maintained?
    - h. Is there an instructional repair/maintenance manual available?
    - i. Has anyone (male or female) been trained to maintain the water lifting/well technology? Who are these?
  16. How responsive and accountable are you to activities related to the facility?
    - a. How do you raise funds to maintain the facility?
    - b. If you charge user fees, how much do you charge?
    - c. Who is supposed to pay? Who is not supposed to pay?
    - d. How often do people pay?
    - e. Who do they pay the money to?
    - f. How are the funds saved and managed?
    - g. Do the managers of the funds account for you to know how they are used?
    - h. Who is responsible for maintaining drinking water?
    - i. Have there been any problems with maintenance?
    - j. How do you maintain the facilities in general and during and after school holidays?
    - k. How would you rate the management and accountability of the facility?
  17. Can you please mention some things that can facilitate the development and use of this facility?
    - a. Why do you think the things you mentioned can facilitate the development and usage of the facility?
    - b. What advantages have you found in using this particular type of technology (*mention the technology*) in your school?
    - c. How have you benefitted by having this technology?
    - d. Do you feel you are enjoying a better life with this source of water?
    - e. Why do you answer so?
    - f. What recommendation would you make to others about this facility?
  18. What are some factors preventing you from using this technology to the full?
    - a. How do they prevent you from getting the benefits of the facility?
    - b. How difficult is it to address these barriers?
    - c. What support would you need? Or what do you think should be done to prevent/correct this?
    - d. Does this affect only those using this facility or it also affect those using the alternative facility?
  19. Have you learned any from the implementation of this project that you would like to share with us?
    - a. What are some of these lessons?
    - b. Do you see that to be a best practice?
    - c. Why do you say so?
    - d. Do you think it could have been better?
    - e. How could it have been?
  20. **Questions for teachers and principals only:**
    - a. What is a lesson plan?
    - b. Do most teachers in this school use lesson plans?

- c. Can you please show us your lesson plans?
- d. Why do some not use lesson plans?
- e. What do you think can be done to ensure that every teacher uses lesson plans?
- f. What is a school management plan?
- g. Do most head teachers use school management plans that you are aware?
- h. Can we please see the school management plan for this school?
- i. Why do some not use school management plans?
- j. What do you think can be done to support head teachers to use school management plans?

**21. Questions for Pump Menders and Latrine Masons only:**

- a. Were you trained?
- b. Who organized the training for you?
- c. How long was the training?
- d. How effective was the training?
- e. Were you given some materials after the training to enable you start your work?
- f. What are these materials?
- g. Are the spare parts you need available for purchase?
- h. Where can you get them to purchase?
- i. What are the challenges in getting your assignment accomplished?

**22. Question for Rope Pump Workshop Owners only:**

- a. Were you trained?
- b. Who organized the training for you?
- c. How long was the training?
- d. How effective was the training?
- e. Were you given some materials after the training to enable you start your work?
- f. What are these materials?
- g. Are the spare parts you need available for purchase?
- h. Where do you get them to purchase?
- i. Have you been linked to pump menders and latrine masons?
- j. What are the challenges in getting your assignment accomplished?

## ANNEX Q: SCHOOL ENROLMENT RECORDS

Province:

District:

### *DAPP Beneficiaries*

School Name	School Type	Location Type	Year of Benefit	Gender of Pupils	Number of Pupils							
					2006	2007	2008	2009	2010	2011	2012	2013
					Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
				Boys								
				Girls								
				Boys								
				Girls								
				Boys								
				Girls								
				Boys								
				Girls								
				Boys								
				Girls								

### *Non-DAPP Beneficiaries*

				Boys								
				Girls								
				Boys								
				Girls								
				Boys								
				Girls								
				Boys								
				Girls								
				Boys								
				Girls								

## ANNEX R: SCHOOL REGISTER/DATABASE INSPECTION FORM

Province Code and Name:  \_\_\_\_\_

District Code and Name:   \_\_\_\_\_

Community Code and Name:    \_\_\_\_\_

School Name: \_\_\_\_\_

School Type:  1. Public School  2. Community School

Locality Type:  1. Urban  2. Rural

Beneficiary Status:  1. Phase I  2. Phase II  3. Non-Beneficiary

Year	Sex	Learners in		MLP at National		# of Teachers	School Attendance Rate in Grade X	
		Grade Seven (7)	Grade Eight (8)	# Attempting	# Achieving		Achievement	Total Possible
2005	F							
	M							
2006	F							
	M							
2007	F							
	M							
2008	F							
	M							
2009	F							
	M							
2010	F							
	M							
2011	F							
	M							
2012	F							
	M							
2013	F							
	M							

## ANNEX S: FACILITY OBSERVATION FORM

Province Code and Name:

District Code and Name:

Facility	Project Support <sup>12</sup>	Ownership Type <sup>13</sup>	If School Type <sup>14</sup>	Beneficiary Status <sup>15</sup>	Condition				
					Functioning Well	Not Functioning Well	Broken Down	No Facility	Incomplete
Traditional latrine									
Traditional VIP									
Ablution Block (flash toilet)									
Advance latrine									
Manual drilling hand pump									
Push and Lift pump									
Spring protection									
Tippy Taps									
School Hand-wash tanks									
Talking walls									

<sup>12</sup> 0-No Support; 1-Constructed; 2 – Renovated; 9- Others

<sup>13</sup> 1 – School; 2– Community; 3 – Teacher; 4 – Individual ; 9-Others

<sup>14</sup> 1- Government school; 2- Community School; 9-Others

<sup>15</sup> 1- Phase I; 2-Phase II; 3-Non-Beneficiary; 4-Others

## ANNEX T: AUTHORITY LETTER – MINISTRY OF EDUCATION, SCIENCE, VOCATIONAL TRAINING AND EARLY EDUCATION



27<sup>th</sup> June 2013

Mr. Robert Powers,  
Education Team Leader,  
Embassy of the United States of America,  
Subdivision 694/Stand 100  
Kabulonga/Ibex Hill  
P.O.Box 32481  
Lusaka 10101

Dear Sir,

**RE: End of Project Performance Evaluation of the School Water Supply, Sanitation, Hygiene (WASH) and Quality Education Programme (activity) in Northern and Muchinga Provinces**

The above subject matter refers.

The Ministry of Education, Science, Vocational Training and Early Education appreciates USAID's partnership in enhancing the quality of Education in Zambia in a number of ways including the improvement of access to Water and Sanitation and Hygiene.

The Ministry welcomes the end of programme evaluation as this will provide evidence of the performance of the school WASH and quality Education Programme against the stated objectives.

Authorization is therefore granted to the consultants to conduct the evaluation and interview all relevant government officials in the sector at all levels as per proposal. This permission also includes consent to interview learners in the selected schools.

Chishimba Nkossa  
Permanent Secretary  
MINISTRY OF EDUCATION, SCIENCE, VOCATIONAL TRAINING AND  
EARLY EDUCATION

# ANNEX U: MINISTRY OF LOCAL GOVERNMENT AND HOUSING

Ministry of Local Government and Housing  
P.O. Box 32481  
Lusaka



REPUBLIC OF ZAMBIA

## MINISTRY OF LOCAL GOVERNMENT AND HOUSING

MLGH/101/18/22

28<sup>th</sup> May 2013

Telephone: 011 2528 2000

Facsimile: 011 2528 2000

PO BOX 32481

10101 BORDWAY

LUSAKA

Robert Powers  
Education Team Leader  
USAID  
Embassy of the United States of America  
Kabulonga District, Ibex Hill Road  
P O Box 32481  
LUSAKA.

ACTION	DUE DATE
TRANSFER	INFO
ACTION TAKEN	
DATE	INITIALS

Dear Sir,

**RE: END OF PROJECT PERFORMANCE EVALUATION OF THE SCHOOL WATER SUPPLY, SANITATION, HYGIENE (WASH) AND QUALITY EDUCATION PROGRAM (ACTIVITY) IN NORTHERN AND MUCHINGA PROVINCE.**

As the subject refers,

We write to acknowledge receipt of the correspondence in which your organization informed the Ministry that it had engaged a consulting firm, the International Business & Technical Consultants Incorporated (IBTCI) to undertake the end of project evaluation of the School Water Supply, Sanitation, Hygiene (WASH) and the Quality Education Program in Northern and Muchinga Provinces.

In view of this, my Ministry has informed relevant staff and other stakeholders of this upcoming activity. Further, the staff have been directed to provide their usual cooperation and the necessary information, which may be required in the evaluation process to ensure that it is efficient and successful.

Thank you for your continued collaboration.

Yours faithfully

Chileshe L. Mulenga, PhD  
Permanent Secretary

**MINISTRY OF LOCAL GOVERNMENT AND HOUSING**

## ANNEX V: ETHICAL CLEARANCE FROM UNIVERSITY OF ZAMBIA



THE UNIVERSITY OF ZAMBIA  
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

Telephone:	290258/291777	P O Box 32379
Fax:	+260-1-290258/253952	Lusaka, Zambia
E-mail:	drigs@unza.zm	Your Ref:
IRB:	00006464	Our Ref:
IORG:	00005376	

24<sup>th</sup> June, 2013

Joseph Sineka Limange  
C/O Chris Foley  
Project Development Office  
USAID ZAMBIA

Dear Mr. Limange

**APPLICATION FOR ETHICAL CLEARANCE**

Reference is made to your application for ethical clearance for your proposed study entitled "*End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Activity*".

In view of the fact that there are no issues involved that raise ethical concerns, you are hereby given ethical clearance to proceed with your project.

Please note that you are expected to submit to the Secretariat a Progress Report and a copy of the full report on completion of the project.

Finally, and more importantly, take note that notwithstanding ethical clearance given by the HSSREC, you must also obtain express authority from the Permanent Secretary Ministry of Health, before conducting your research. The address is: Permanent Secretary, Ministry of Health, Ndeke House, P O Box 30205, Lusaka. Tel: 260-211-253040/5; Fax +260-211-253344.

Yours sincerely

Dr. Augustus Kapungwe

**CHAIRPERSON, HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE**

cc Director, Directorate of Research and Graduate Studies  
Assistant Director, Directorate of Research and Graduate Studies  
Assistant Registrar (Research), Directorate of Research and Graduate Studies

## ANNEX W: LIST OF REFERENCES

### DAPP Evaluation Desk Review Materials

1. USAID/DAPP School WASHE and Quality Education Project in Northern Province. (2011). School Baseline Survey Report, Second Draft.
2. USAID/DAPP School Washe and Quality Education Project. (2009). Monitoring and Evaluation Plan for FY 2009 to FY 2010.
3. Kanowa L., Chileshe C., Kambandu D. & Muchehe R. (3C Development Management & Entrepreneurship Experts Limited). (2011). USAID/DAPP School WASHE and Quality Education Project in Northern Province. Mid-term Review Report.

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## ANNEX X: CONFLICT OF INTEREST FORMS

### Disclosure of Conflict of Interest for USAID Evaluation Team Members

<b>Name</b>	JOSEPH SINEKA LIMANGE
<b>Title</b>	TEAM LEADER/METHODOLOGIST
<b>Organization</b>	
<b>Evaluation Position?</b>	<input checked="" type="checkbox"/> Team Leader <input type="checkbox"/> Team member
<b>Evaluation Award Number (contract or other instrument)</b>	RAN-I-00-09-00016/ AID-611-T0-13-00005
<b>USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)</b>	USAID/Zambia End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Project Implementer: Development Aid from People to People (DAPP)
<b>I have real or potential conflicts of interest to disclose.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>If yes answered above, I disclose the following facts:</b> <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	
I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.	
<b>Signature</b>	
<b>Date</b>	22/08/13

Disclosure of Conflict of Interest for USAID Evaluation Team Members

<b>Name</b>	FIDELIS CHULU
<b>Title</b>	WATER SUPPLY CONSULTANT
<b>Organization</b>	IBTCI
<b>Evaluation Position?</b>	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> Team member
<b>Evaluation Award Number</b> <i>(contract or other instrument)</i>	AID- RAN-1-00-09-00016/ AID-611- TO-13-00005
<b>USAID Project(s) Evaluated</b> <i>(Include project name(s), implementer name(s) and award number(s), if applicable)</i>	USAID/Zambia End-Term Performance Evaluation for the USAID/ Zambia School Water Supply and Hygiene (WASH) and Quality Education Project Implementer: Development Aid from People to People (DAPP)
<b>I have real or potential conflicts of interest to disclose.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>If yes answered above, I disclose the following facts:</b> <i>Real or potential conflicts of interest may include, but are not limited to:</i>	
	<ol style="list-style-type: none"> <li>1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated.</li> <li>2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation.</li> <li>3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project.</li> <li>4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated.</li> <li>5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated.</li> <li>6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.</li> </ol>
<p>I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.</p>	
<b>Signature</b>	
<b>Date</b>	26 <sup>th</sup> August 2013

Disclosure of Conflict of Interest for USAID Evaluation Team Members

<b>Name</b>	Matilda Shatunka
<b>Title</b>	Mrs
<b>Organization</b>	IBTCI
<b>Evaluation Position?</b>	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> Team member
<b>Evaluation Award Number</b> <i>(contract or other instrument)</i>	AID- RAN-1-00-09-00016/ AID-611- TO-13-00005
<b>USAID Project(s) Evaluated</b> <i>(Include project name(s), implementer name(s) and award number(s), if applicable)</i>	USAID/Zambia End-Term Performance Evaluation for the USAID/Zambia School Water Supply and Hygiene (WASH) and Quality Education Project Implementer: Development Aid from People to People (DAPP)
<b>I have real or potential conflicts of interest to disclose.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>If yes answered above, I disclose the following facts:</b> <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	

I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

<b>Signature</b>	
<b>Date</b>	26 <sup>th</sup> August 2013