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**TRANSFORMATION TOWARDS SUSTAINABLE
AND RESILIENT WASH SERVICES**

**Empowering rural communities to sustain clean water and
improve hygiene through self-help groups**

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Traditional water, sanitation, and hygiene (WASH) approaches have failed to achieve adequate sustainability of rural water points and hygiene behaviour change. Community-based savings groups have several strengths that suggest their integration into WASH programs may significantly improve sustainability and hygiene and sanitation. This paper documents how The Water Trust integrated the formation of savings groups, referred to as “self-help groups” (SHGs), into its program. This paper shares year-one results of an 18-month pilot implemented across 18 communities, including indicators of sustainability, SHG performance, hygiene and sanitation, and health. Notably, annual water point contributions spent or available for repairs increased from \$2 to \$164 in SHG communities, more than three-times the levels of contemporaneous pilots and more than needed for annual maintenance and repairs. Handwashing facility coverage also increased from 5% to 36%. Learnings from the pilot are shared along with a discussion of the potential for scale and future research.

The rural WASH crisis: persisting poor hygiene and unsustainable water

In Sub-Saharan Africa, sustainable access to clean water and good hygiene remains challenging despite the efforts of non-governmental organization (NGO) and government programs to form water user committees and community health clubs. It is estimated that 36% of handpumps are broken (Banks and Furey, 2016), while just 15% of homes have a handwashing facility (WHO and UNICEF, 2017). In the rural villages where The Water Trust operates in the districts of Masindi and Kiryandongo in western Uganda, these rates are considerably worse due to greater poverty, lower population density, and greater physical distance from market and government actors. The Water Trust’s household and site surveys in the area suggest that just 5% of households have a handwashing facility, while 49% of existing water points are in disrepair.

The WASH sector has responded to these realities with a number of innovative approaches, many of which aim to strengthen government or market actors to better serve their surrounding communities. In 2016, The Water Trust piloted several bottom-up approaches, each designed to strengthen community capacity to maintain water points and improve hygiene and sanitation. Of these pilots, the program model that integrated the formation of SHGs was most successful.

The promise of SHGs

Village savings and loan groups have a long history in Western Uganda and in much of the world. While there are a number of formal training methodologies, the Village Savings and Loan Association (VSLA) approach developed by CARE more than 25 years ago has a long history of creating durable, trustworthy village-level cooperatives that provide access to savings and credit to populations with low literacy and numeracy. From the perspective of the WASH sector, the groups have several compelling attributes: (1) there is generally high community demand, (2) members trust the groups with their money, (3) meeting attendance is high; (4) members have access to capital for sanitation upgrades, (5) 89% of VSLA groups survive more than five years (Allen, 2002).

From saving money to self-help: adapting VSLAs for WASH

The Water Trust adapted the VSLA methodology to promote WASH and carefully sequenced group formation with other activities. Community members were targeted to participate in the SHG by water point catchment area rather than poverty level, gender, or consumer demand. Several adjustments were also made to the standard group constitution. First, the water point's sustainability was added as one of the groups' two founding objectives (the other being personal savings and credit). Second, the constitution stipulates a minimum contribution of approximately \$3-4 per household per year for water users, including non-group members. Third, the constitution stipulates a minimum repair reserve fund of approximately \$85 to be kept in the group during the annual sharing out of savings group profits.

Village program approach

The village program was designed to disrupt current behaviours, build durable, enabling institutions, and encourage and reinforce new habits. As outlined below, the formation of an SHG follows only after several triggering activities that increase community interest in collective action to address shared WASH challenges.

Disrupt current behaviours:

- Facilitate participatory vulnerability and capacity assessments to help communities map out economic and health risks and develop action plans to problems such as open defecation.
- Facilitate community-led total sanitation activities to trigger disgust for open defecation and commitment to improved sanitation practices.
- Repair water point and train community members to build household WASH infrastructure.

Build durable, enabling institutions:

- Form SHGs with constitutions that include standards and commitments for water point maintenance.
- Form and train water and sanitation committees to promote WASH.
- Facilitate linkages between SHGs, local leaders, and local government staff.

Encourage and reinforce new habits:

- Perform regular coaching visits of the group and natural leaders.
- Create radio advertisements and provide posters to reinforce hygiene and sanitation messages and communicate aspirational identity related to hygiene.
- Train local artisans to build WASH products and facilitate linkages with SHGs.

At the time of the evaluation, the program had been implemented for twelve months. Coaching visits continue an additional six months with decreasing frequency.

The impact of SHGs

In 2016, The Water Trust introduced SHGs to 20 communities in Masindi and Kiryandongo districts in Uganda. Prospective communities were screened to include only communities with a water point constructed by The Water Trust and prioritized for inclusion in the pilot based on the failure of its existing management approach, as evident in the condition of its water point, functionality of its water user committee, and its funds available for maintenance and repairs. Of the 20 communities where the program was introduced, 19 initially accepted the program, with one declining as inter-family conflicts and feuds were so significant that the majority refused to meet in the same place. Within six months, a second community had similar issues and refused to continue meeting as a group. In total, 18 groups were successfully formed.

Data

Monthly monitoring data was collected on several proxy indicators for water point sustainability, hygiene and sanitation facility coverage, and SHG financial performance. Comparable data was collected for two alternative approaches piloted by The Water Trust: extending coaching of water user committees and a private utility model that formed maintenance contracts with local entrepreneurs.

In December 2017, 2,408 household surveys were administered by a third-party agency, with 492 administered to SHG-member households, 781 to non-member neighbours who received hygiene and

sanitation promotion, and 1,135 households in 20 comparison villages that received no intervention. Within each treatment village, enumerators aimed to survey 80% of SHG households and 10% of non-member households in the same village. Households were selected randomly until those targets were reached. In comparison villages, households were selected randomly. The survey included questions on hygiene, sanitation, community trust, self-efficacy, and health. The analysis of trust and self-efficacy is not yet done.

Water point sustainability

For the year-one evaluation, The Water Trust identified proxy indicators for long-term sustainability focused on maintenance expenditures and the financial capacity to pay for future repairs. Table 1 contrasts results from SHG communities with two contemporaneous pilots with different management models. All results are reported at the water point- rather than household-level. In this analysis, communities are grouped by their actual mode of management at the end of the project. As noted above, in the 20 communities where a SHG was introduced, 18 accepted the management model. In the private utility model, 14 of the 20 targeted communities accepted the model. As a result, 28 communities continued the water user committee approach, while receiving a similar intensity of coaching and support to collect user fees and maintain the water point.

Management approach	SHG	Private utility	Water User Committee
Baseline average annual contributions for maintenance and repairs	\$2	\$6	\$7
Year-one average annual savings spent on maintenance or reserved for repairs	\$164	\$41	\$51
% over \$70 spent or saved in year one	94%	7%	23%
Year-one average annual expenditure on maintenance and repairs	\$36	\$8	\$15

The \$70 annual savings target was established based on an estimate of the cost of maintaining and repairing a shallow-hand dug well equipped with a Consallen handpump.

Group performance

The impact of the SHGs on water point sustainability depends heavily on the robustness of the SHG itself. Likewise, the value of the SHG as a platform for hygiene and sanitation promotion depends on regular meeting attendance. As The Water Trust did not have prior experience forming SHGs, group performance was an important risk. The year-one results in Table 2 below suggest that group performance remains sound.

Indicators	
Average group membership	33
Percentage of women members	56%
Weekly meeting attendance rate	76%
Membership growth rate	33%
Average group savings	\$1,094
Average group payout at end of annual cycle	\$1,532

Notably, all 18 of the groups have agreed to continue with a second annual cycle. The group size was larger than ideal in several villages, and the percentage of women members was lower than standard

practice. However, the growth in membership and regular meeting attendance suggests the groups are robust. The average group member (including those who joined late in the year) borrowed \$75 over the course of the year, nearly two-thirds for livelihood investment, and received a payout of \$46 at year end.

The high payout is possible because group members charge one another 10% of the loan total for short-term loans, a finance charge set by communities themselves but virtually always the same. Interest is shared out to the group members at the end of the year. In communities with significant inequality, wealthier households may contribute more savings while poorer households may borrow more, resulting in a transfer of wealth that may have negative effects on community dynamics. Several SHGs took issue with the large payouts received by wealthier members and adjusted their profit-sharing rules to benefit poorer households.

Hygiene and sanitation

Table 3 below shows the increased of hygiene and sanitation behaviours in SHG members and their neighbours. Both SHG members and neighbours received hygiene and sanitation coaching.

Survey respondent	SHG member	Neighbour	Comparison village
Household latrine	84%	82%	65%
Clean and maintained latrine	82%	55%	41%
Faeces observed on floor in home	3%	8%	18%
Handwashing facility	36%	16%	5%
Handwashing facility with soap	12%	2%	2%
Water carrying container is clean inside	72%	65%	51%
Separate building for cooking	83%	71%	57%
Elevated drying rack for dishes and utensils	72%	52%	43%

The program also had positive impact on a number of related indicators, including: utensils present on drying rack, food preparations considered “very dirty”, protected food storage, self-reported handwashing after defecation, and self-reported handwashing after infant feces disposal. The program had marginal to no measurable effect on several indicators, including water storage cleanliness, and the percentage of homes with somewhat clean or completely clean food preparation areas. The Water Trust staff expect hygiene and sanitation to continue to improve in the remaining six months of the program. Particular attention will be paid to increasing the coverage of handwashing facilities with soap, which remains at an unhealthy level.

Health outcomes

Table 4 shows the incidence of self-reported disease at one year. Notably, households report lower rates of diarrhoea and acute respiratory infections in children under five.

Survey respondent	SHG member	Neighbour	Comparison village
Children under five with diarrhoea in prior two weeks	3%	5%	11%
Children under five with acute respiratory infection in prior two weeks	13%	19%	25%
Children under five with a skin or eye infection in prior two weeks	4%	5%	7%

Notably, the reported rates of disease for children under five were significantly higher when the survey respondent was a woman. In comparison communities, 15% of women reported a child under five with diarrhoea contrasted with 8% of men. The authors presume this is because women are more likely to be the primary caregiver, and therefore more aware of health events for young children. The survey did not clarify who the primary caregiver was in the household, and aggregate results are reported in Table 4. If disease rates reported by women are more accurate, the reduction in diarrhoea and respiratory infections may be larger still. Among women surveyed, rates of diarrhoea and respiratory infections for children under five in comparison villages were 15% and 29%, respectively, and 3% and 14% in SHG households.

While the comparison group rates of diarrhoea and skin or eye infections were relatively low for other age groups, they remained high across age groups for acute respiratory infections (e.g., 20% incidence among adults in comparison villages.) Reported respiratory infections for children 6-17 and adults in treatment villages fell at a similar rate to children under five. Courtesy bias, the tendency of respondents to tell the surveyor what they think they want to hear to avoid offense, is a concern when interpreting self-reported data. However, this concern is partly mitigated by the observation that the rate of malaria reported by households was higher in the treatment villages than comparison villages. This occurred despite The Water Trust promoting malaria control to varying extents across these villages. This finding increases our confidence in the self-reported disease data, although there remain concerns about diagnostic accuracy.

Lessons learned

Willingness to pay is contextual

Integrating the collection of fees and maintenance payments in a savings group significantly changed willingness to pay with the amount collected and reserved for the water point increasing from \$2 to \$164 on average. This is likely due to some combination of the material incentive to abide by group rules to access savings and credit, greater trust that funds will be appropriately used, the social knowledge gained of their neighbour's contributions in the meetings, and the mental framing of the amount contributed as relatively small compared with the personal savings they are accumulating and the loans they are enjoying.

Healthy intracommunity dynamics are critical

In two communities that rejected the SHG, the community dynamics were so poor that community members were unwilling to meet with one another in group meetings. In successful groups, significant intra-community inequality may result in the wealthy receiving a larger share of the group's returns due to their higher saving and lower borrowing rates. These dynamics need to be monitored and mitigated.

Additional focus on access and use of soap is needed

While handwashing facility coverage increased significantly, it did so from a very low baseline and with inadequate use of soap. The Water Trust is exploring whether school-based programming that incorporates soap-making for school usage could improve soap distribution and usage in the village context as well.

Conclusions

SHGs can improve sustainability, hygiene, and sanitation in a rural context

The integration of SHGs into a WASH program can significantly improve water point sustainability, hygiene, sanitation, and health. This approach is most suitable for low-density areas with limited financial services. It is unlikely to be appropriate for larger water systems, such as piped systems in rural trading centres, where pay-as-you go systems or government strengthening are more likely to be effective.

This bottom-up, scalable approach has significant potential as a complement to government and market strengthening initiatives

The demonstrated replicability of the VSLA methodology suggests that this adaptation should be similarly scalable across rural communities with limited literacy and numeracy. While this approach has the potential to significantly improve water point sustainability at the village-level, capacity-building and resource mobilization at the district level remains essential for the operations and maintenance support of schools, health centres, struggling villages, and other institutions.

Integration with financial inclusion programs presents a potential pathway to scale

CARE alone has launched more than 200,000 VSLAs to support more than five million people worldwide. The incremental cost of WASH promotion is relatively low, and both existing and new groups provide a large platform to improve hygiene and sanitation behaviours and water point sustainability.

Future research

It is critical to rigorously evaluate the impact of the program on both intermediate outcomes (e.g., water point reliability) and health outcomes across additional sites. This expansion, currently in process, includes communities that have existing savings groups, as well as water points constructed with various technologies of varying quality. Ideally, this expansion will be evaluated by a randomized controlled trial.

The Water Trust is also piloting a lower-cost version of this program approach, which will rely on training and supervising community members to perform a significant amount of the community coaching and support. This staffing approach is similar to that taken by a number of NGOs that train village agents to form and train VSLAs, as well as NGOs that train and supervise community health workers.

Additional attention and research is also needed on the role of community trust, social capital, and self-efficacy in behaviour change and operations and maintenance. Highly-impooverished communities and vulnerable populations often experience psychosocial barriers that may require special consideration. In turn, it is possible that WASH promotion programs can increase these individual and community capacities, which may have a catalytic impact on WASH and beyond.

Finally, we encourage and support peer organizations to adapt and test this approach in other contexts in order to understand both the depth of its impact and the breadth of its suitability.

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