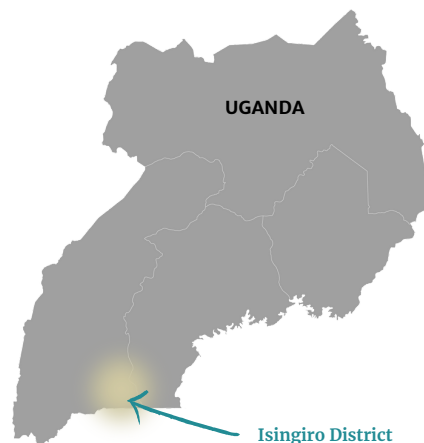




The Masha Project was completed in November 2022 for rural communities located within **Isingiro District** in South Western Uganda.



Introduction

The project served **1,952 households** (approximately 20,043 people) with Water And Sanitation Hygiene (WASH) services. A Gravity Flow System (GFS) with 35.2 kilometres of pipeline provided a total of **97 tap stands** throughout **18 villages** in 4 sub-counties (Kabingo, Kagarama, Nyamuyanja, and Bireere).

The project captured **12 institutions**. One tap was installed at a healthcare facility. 11 taps were installed at **10 primary schools**, serving **3,010 students**. 5 taps were installed at religious institutions. The other 80 taps were installed in public access points throughout communities.

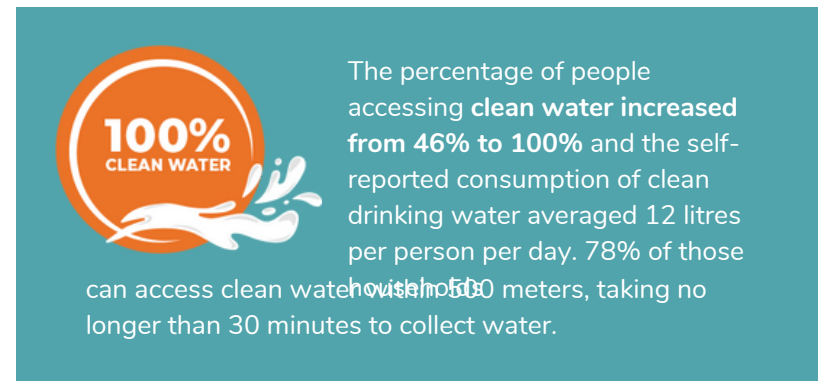
This report presents the contribution that the Masha project has made to the WASH sector in Uganda. In this report, we compare the results of the project to the same data points in a nearby population group that did not receive the intervention, as well as contextualize results with sector statistics in Uganda.

This report presents results in the following areas:

- The prevalence rate of waterborne disease.
- Access to and consumption of clean water.
- The impact of WASH on schools and school attendance.
- The impact of WASH on changing sanitation and hygiene behaviours.
- The generation of social capital and local revenue for WASH development.
- Poverty alleviation through the pathway of WASH.

The Impact of the Masha Project

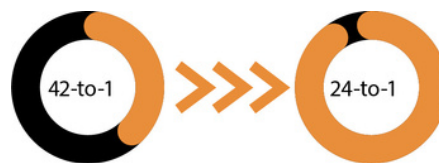
As a result of the Masha project, the **waterborne disease prevalence rate dropped from 28% to 11.16% within 12 months**. Each community tap stand installed has the capacity to supply 6,000 litres per day or 1,200 litres per person.



A person saves an average of 1 hour and 19 minutes daily by collecting water from a tap close to their home, which results in approximately **40 hours a month gained** for other productive activities, such as education. There is a direct correlation between hours saved in water collection and an **increase in school attendance**.

The Masha project equipped 10 primary schools and **3,010 students** (51% female | 49% male) with WASH education and infrastructure.

30 pour-flush toilets were constructed to serve girls, and 10 were constructed to serve boys, **reducing the student-to-stance ratio** from 42 to 24 students per toilet.



After latrines (with a private space for menstruation hygiene management) and a tap for hygiene needs were installed, **girl-child attendance in participating schools increased by 40% and absenteeism decreased by 48%**. These same girls would have also benefited from the installation of community taps, which saves them over an hour every day in the task of collecting water for their families, releasing them to get to school on time, and giving them time to do homework.

ACTS' program strategy targets schools with School-Led Total Transformation (SLTS) and households with Community-Led Total Transformation (CLTS) approaches to capture the continuum of influence between the school and the community. Students talk to parents about sanitation improvements at schools, while parents are receiving information and support from the ACTS program team to improve sanitation and hygiene practices in their homes.

Some of the student's parents may have received additional training to hold decision-making positions on governance committees, participate in WASH cooperatives, are trained to be WASH Champions within the community, or sit on the parent-teacher committee at a school.

A father of a local household may have been trained, and now serves the community, as the GFS mechanic. These **various roles all emerge from the program** intervention or intersect with the program, which creates a collective effort toward **raising the overall WASH standards of the community while developing social capital that supports community resilience**.



The percentage of households demonstrating healthy hygiene practices changed from 58% to 85%.

1,456 new household latrines were constructed by community members to achieve the basic service sanitation level. 530 household latrine structures were improved to achieve a basic service level, enabling safe sanitation management in the home. 1,904 households now have handwashing stations, and the percentage of households that practice handwashing changed from 3% to 85%.

Hand washing is not only critical for reducing the transmission of disease but also important to a person's overall well-being. Hand washing is a critical indicator of successful behaviour change because it is both challenging to accomplish and critical for well-being.

The Ministry of Water and Environment awarded 17 out of 18 villages with the Open Defecation Free (ODF) certification. The ODF verification is a government process that verifies that community standards now meet hygiene standards. All the achievements listed above are part of the criteria that communities are assessed against. ACTS' refers to this collective achievement as the Healthy Hygiene Village.

The Masha Project empowered people with the skills needed to maintain WASH infrastructure, govern their own resources, operate as Community-Based Organizations (CBOs) and generate household income from WASH-based products.

527 people were empowered through training, which resulted in women occupying 47% of newly created community-based leadership positions.

Women constitute 50% of the population, and therefore, are important stakeholders in decisions that impact both their community and their family. **Having women occupy 47% of newly created community positions contributes towards gender equality goals within the WASH sector.** These goals include women being involved in the decision-making of managing resources.

Community members (both women and men) made a significant contribution of 25,568 hours of volunteer labour toward the implementation of the project. Co-implementation of the project is an important part of strengthening the relationship between community members and project staff, building trust, and deepening an understanding of each other. Working alongside each other toward the betterment of the community is considered a contributing factor to the results achieved.



\$151,023 CAD in local revenue was generated toward WASH development from the district government, participating households, and schools.

This significant amount of money raised from local stakeholders reflects the partnership between stakeholders. Each stakeholder is proportionately invested in the desired results of the project. The district is invested in supporting the development of WASH within its borders. Beneficiary households are invested in creating WASH resources needed for their families.

ACTS provides the technical expertise, skilled labour, and additional resources needed to implement project activities for the purpose of fulfilling our mission to partner with communities to eliminate water poverty. This investment generates a collective movement toward achieving the goals of the project.

By the end of the Masha project, we began to see noteworthy changes in poverty alleviation.



Participating households increased their daily income and earnings from \$1.4/day to \$2.7/day.

This enabled the partner households to cross the national poverty threshold of \$2.15 within 12 months.

Monthly household savings increased from \$2.5/day to \$5/day, which in part, was a result of **spending up to 70% less on medical costs** due to the reduction in the prevalence of waterborne diseases. Participating Community-Based groups increased monthly revenue from \$21.17 to \$65.70, and households were able to increase their borrowing capacity from \$7 to \$49 per month.

The percentage of households able to meet their basic needs (food, water, shelter, clothing, and access to education) improved by 100%. The percentage of households able to meet their basic needs changed from 44% to 88% within 14 months.

When working together collectively toward defined WASH benchmarks, such as eradicating the practice of open defecation and making hand washing with soap a social expectation, it creates a movement that leads to healthy and resilient communities. We know this by the reduction of common diseases, the increase in household savings, and the observation of people that are proud of their accomplishments.

Project Results Against a Comparison Group

The data points measured in the target population compared to the same data points from a neighbouring population that did not receive the intervention validate a direct correlation between the intervention and the results gained.

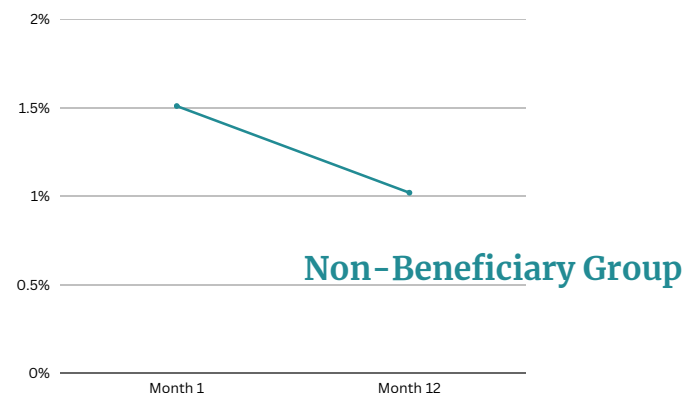
While waterborne disease was significantly decreased in our project catchment population, it actually increased from 29.41% to 49.25% in the non-beneficiary group. There are numerous factors that can contribute to an increase in waterborne diseases, including overcrowding and population movements.

Isingiro district hosts the largest refugee settlement in East Africa: Nakivaale Refugee settlement. The migration movements attributed to the refugee settlement can explain an increase in waterborne diseases in neighbouring populations.

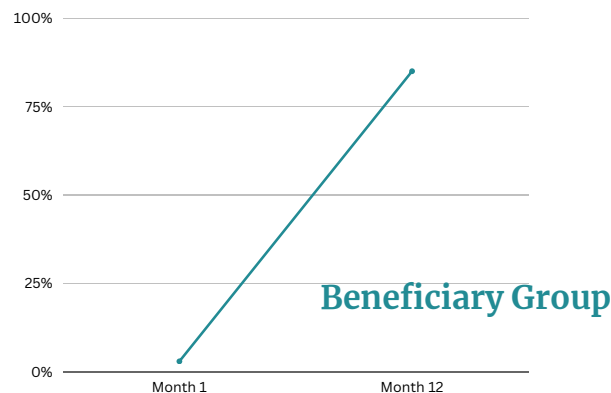
However, transient populations from the Nakivaale Refugee settlement would indirectly benefit from access to taps installed during the Masha project near trading centres or those located beside main roads.

Access to clean water improved from 13% to 20% in the non-beneficiary group; however, access to water alone does not reduce waterborne disease effectively in the absence of sanitation and hygiene knowledge or improvements.

Only hygiene practices disrupt the contamination cycle, such as transporting water in a clean jerry can or hand washing with soap before preparing food. Therefore, the impact of the absence of WASH education and related interventions is more noteworthy than the prevalence rate of waterborne disease.



In the non-beneficiary group, **the practice of hand washing declined over the course of 12 months** from a mere 1.51% to even less (1.02%) versus the positive change that we saw in the intervention group (3% to 85%).



This difference can be attributed to the role that Participatory Hygiene And Sanitation Transformation (PHAST) education plays in affecting behaviour change.



While neighbouring, non-beneficiary communities may have experienced an indirect improvement in access to clean water, the distance and time required to access water were not reduced for those households because the placement of taps was not within 500 meters of their households, as it was within beneficiary communities. Therefore, they did not receive the same benefit of redirecting the time spent on water collection to other productive activities, such as gardening, work, or school.

While the non-participating households did show a positive trajectory of being able to provide for their basic needs, there was a greater capacity shown in beneficiary households. There was a 3% difference in the capacity of participating families versus non-participants' ability to meet their basic needs.

The ability of participating households to meet their basic needs improved from 79% to 88%; there was a change of 74% to 80% in non-participating households. The positive trend in both groups may imply an improvement in economic activity in the region or reflect the subjective nature of reporting on the ability to meet the basic needs of one's family. Likewise, the increased capacity of beneficiary households over the comparison group could be attributed to both better income as well as their savings gained from reduced medical costs.

Participating families spent **69.75% less on medical care** within a 12-month timeframe versus non-participating households spending 144% more on medical care by the end of the project.

The increase in medical expenses correlates with the increase in waterborne disease (29.41% to 49.25%) and the decrease in hand washing with soap (1.02% to 1.51%) in non-participating communities.

Household hygiene standards improved marginally in non-participating households (44% to 53%) but improved substantially in participating households (58% to 85%). This is attributed to the multi-dimensional approach that ACTS uses to engage community members.

A participating household receives initial hygiene education from demonstrations given in the community, instructing on how to make hygiene and waste management improvements to the household.

Over the course of a year, they receive further support from WASH Community Champions, providing follow-up and rallying the support needed to help people make necessary improvements, such as latrine construction in widow households.





WASH workshops provide people with the skills to make WASH supplies (such as feminine hygiene products, soap, and hand washing stations). The ODF verification process provides social pressure for all households to meet the demonstrated standards in order to attain the community ODF certification. This certification provides a clear guideline for basic sanitation and hygiene criteria and a clear benchmark of achievement.



The ODF verification process appears to be an effective tool for motivating communities to collaborate and for development workers to achieve program objectives.

Access to clean water results in reduced illness, and the reduction of the incidence of illness will result in better school attendance. **Participating schools that received both sanitation infrastructure and WASH education showed a 40% increase in girl-child attendance, and absenteeism decreased by 48%.** Less absenteeism and good health help students perform better in school.

The average performance of beneficiary schools in national exams improved by 200% (23% to 69%) from one year to the next (there was a gap year in national exams due to Covid-19 shutdowns). Comparatively, non-beneficiary schools improved performance in exams by only 14% (21% to 24%). The difference could be attributed to the impact that water and sanitation provision in the schools has on the well-being of students.

A private, secure latrine that meets national standards for accessibility and privacy, not only provides the necessary services for all children to attend school but also restores dignity and well-being.



Active participation from community members and government officials at every level of program implementation creates a social network that benefits individuals and community development by mobilizing both human and financial resources that otherwise wouldn't be directed toward WASH. Collective participation also creates relationships, builds trust, and generates a social safety net that improves the resilience of communities.



Community leadership positions are generated, providing both men and women with equitable participation in decision-making over resources. Without the structures put in place through the co-implementation of the program, these leadership positions do not exist. Accountability among stakeholders is a non-tangible benefit created by the program. **Training, relationship building, and the trust that is developed when people work together for the greater good strengthen the community.**

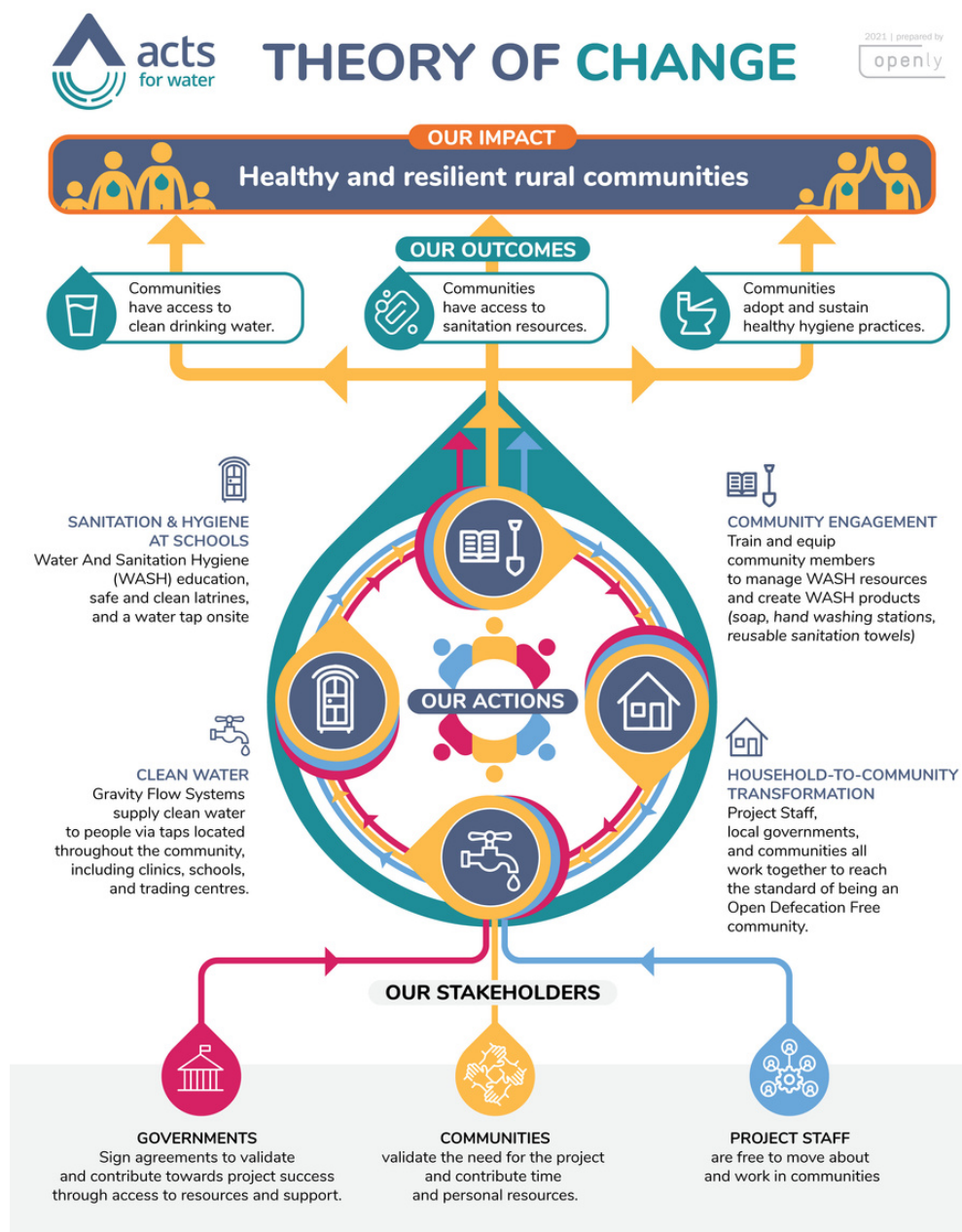
Vulnerable households are more likely to receive the support of their peers when all peers are responsible for supporting WASH improvements in their neighbour's households.

This process has not been seen to happen spontaneously but requires a program intervention to mobilize the collective effort.

Important **connections between community members and government officials are strengthened by collaborating** on a common objective toward ODF verification.



There is no known generation of social capital or local revenue toward WASH in non-participating communities. The generation of social capital occurs due to the numerous stakeholders engaged in the program's planning, implementation, and sustaining of results.



ACTS' program strategy begins with arguably the most important initiative in our 12-month process of water and sanitation transformation: **stakeholder engagement**.

The social capital that is created by engaging communities and the district as cooperative partners has proven to be foundational to the program's performance.

Involving communities in their own needs assessment, allowing them the option of inviting ACTS' services into their area, and engaging them as co-implementors of the program creates an equitable partnership between stakeholders.

Likewise, the role that the district government plays in mobilization and ODF verification makes them an equitable stakeholder in the process of achieving the desired impact because they are financially and socially invested in the communities.

The entire process between stakeholder engagement and the impact gained is prefaced on the social capital generated.

In short, the results of the Masha project both validate the Theory of Change and highlight that equitable stakeholder engagement is foundational to achieving the vision.

Understanding these results within the Context of the WASH Sector in Uganda

Most water charities working in Uganda focus on point water solutions (boreholes, shallow wells and springs) for the delivery of clean water. **Only 11% of the rural water supply in Uganda is provided through piped water schemes and rainwater harvesting tanks.** Therefore, ACTS' is making a significant contribution to 11% of the rural water supply provided through piped water schemes. The Masha GFS is one of 29 systems that ACTS installed over 30 years. ACTS' specialized knowledge and experience in the design and construction of Gravity Flow Schemes (GFS) enables clean water to be delivered at scale.

Only 42% of Ugandans can collect clean, safe drinking water within a 30-minute timeframe.¹ 77.92% of the beneficiaries from the ACTS group collected water within 30 minutes (inclusive of queuing time) compared to only 18.5% of the non-beneficiary group.

The 35.2 kilometres of pipeline enabled the equitable placement of water taps in close proximity to 1,952 households, thereby limiting water collection to 30 minutes (round trip) for the majority of the beneficiary population. Hence, **the GFS water solution offers the unique capacity to reduce the time rural Ugandans spend collecting water** because it's the one solution that can bring clean water within 500 meters of every user versus having a central water source that all users walk to (e.g. borehole pump or kiosk). No other water solution can deliver this same result.

The WASH sector within Uganda has a 33% success rate for leading triggered communities to achieve ODF certification. Between 2020-21, only 3,595 out of 9,451 villages triggered throughout Uganda were declared open defecation free.²

The Masha project has achieved a 94% success rate in the year of implementation. The success of the Masha project around behaviour change is attributed to the constant presence of the ACTS program team during project implementation, the use of participatory development approaches, and a high level of engagement with all stakeholders. Community members contribute labour and provide structures of accountability, as does the government. Government fulfills roles in mobilization, monitoring and evaluation, as well as co-funding.

The total In-Kind contribution from local sources amounts to approximately \$151,023 CAD. While sector reports cite the financial investment from the non-profit sector towards water supply infrastructure and infrastructure maintenance in Uganda (UGX 55.8 billion), there is a notable absence of reporting on any local investment into the sector.³ Yet, local stakeholders in the Masha project contributed 84% of the total material costs for the project, and enough labour hours to double the human capital investment into the project.

The Masha project was implemented the year that inflation and recession followed on the heels of the Covid-19 pandemic, putting stress on all humanitarian sectors. In 2021, Uganda's Human Development Index positioned it 166 out of 191 countries and territories, which places it within the 'low' human development scale. Comparatively, Canada is in the highest bracket of HDI, with only the United States and Australia ranking higher.⁴

1. Abstract, Children's Experience with Water Scarcity in Rural Rakai, Uganda, by Innocent R. Kamya et al., Makerere University, Kampala, Uganda.

2. CSO Annual Performance Report FY20/21, UWASNET, pg.24

3. ibid.IX,

4. <https://www.undp.org/uganda/press-releases/uganda-launch-2021/2022-human-development-report>

For the first time in 32 years that the UNDP has been calculating the HDI, human development had fallen back, reversing much progress gained on the Sustainable Development Goals (SDGs) by 2016.⁵ Since 1990, there were only three years when Uganda's HDI decreased instead of increased: 1992, 2012, and 2020.⁶ In 2020, the drop in HDI was also experienced in Canada and the world as a whole. This is evidently the year that Covid-19 had its economic global impact.

According to the Uganda National Survey Report, the proportion of the population living in poverty grew by 17.11% during the Covid pandemic.⁷ By 2021, 1 in 5 people in Uganda were living in poverty. It was during this time that we saw the opportunity for remote, rural populations to become more resilient by using market-based WASH initiatives to address gaps in the supply chain. ACTS stepped into the gap and taught people how to make critical sanitation and hygiene products for use and sale.

It was from WASH entrepreneurship initiatives that we began to see noteworthy changes in poverty alleviation by the end of the project.

As cited above, data showed partner households cross the national poverty threshold within a very short timeframe, and revenue into local participating cooperatives tripled. The revenue from local cooperatives provided Village Savings Loans (VSLs) for participating community members. VSLs provide the means necessary for people living in poverty to scale productive outputs or economic initiatives.



The percentage of households able to meet their basic needs (food, water, shelter, clothing, and access to education) improved by 100%.

The percentage of households able to meet their basic needs changed from 44% to 88% within 14 months.

This improvement happened in the midst of Human Development Index recessions.



5. Ibid.

6. <https://hdr.undp.org/data-center/specific-country-data#/countries/UGA>

7. Uganda National Survey Report 2019/20. Pg. 21. https://www.ubos.org/wp-content/uploads/publications/09_2021Uganda-National-Survey-Report-2019-2020.pdf

Conclusion

The results of the Masha project demonstrate how the delivery of clean water near households and an effective WASH program has a profound effect on Human Index Measurements, such as education, economics, and health.

Further to this, data shows a variance in feelings of stress and depression caused by water poverty between participating and non-participating households. A household survey showed that beneficiary households reported the biggest change in stress levels after they were relieved from water poverty. At baseline, 37% of beneficiary households reported feeling stress and depression in relation to WASH services.

Within 12 months, 99% of participating households reported feeling free from stress and depression, compared to 42% of non-beneficiary households.

This demonstrates that the provision of WASH services improves the quality of life by improving well-being. The feeling of well-being is an important precursor for the capacity to thrive.

The capacity to thrive is manifested in gains made in education, economics, and health. As gains are experienced in these areas, hope emerges. Hope is an important part of human wellbeing and progress. **Without hope there is little vision for a future different than the present. With hope comes drive and vision for a better future.**

It is ACTS' vision to see communities thrive through the elimination of water poverty. Data supports that the elimination of water poverty improves the quality of life, provides growth opportunities, and ultimately alleviates extreme poverty.

