2019 Program Report

MAJI SAFI GROUP

A Detailed Analysis of Maji Safi Group's Programs in 2019

Shirati, Rorya District, Tanzania

Maji Safi Group Overview

Maji Safi Group (MSG), "Clean Water Group" in Swahili, operates in the Rorya District of Tanzania, an area consisting of farmland and villages on the shores of Lake Victoria in the Mara Region. In the Rorya District, water is taken directly from unprotected sources that are contaminated with human, animal, and industrial waste. As a result, 99% of all drinking water is contaminated with dangerous levels of pathogens, which leads to high levels of water-related diseases and widespread waterborne and water-related outbreaks (Perel-Slater, 2011). According to Dr. Chirangi, Chief Medical Officer at the Shirati KMT District Hospital, 50% of illnesses in the Rorya District come from water-related and waterborne diseases, such as schistosomiasis, cholera, and dysentery. To combat this situation, MSG began as a project under the Shirati KMT District Hospital in May 2012 to implement prevention-focused programs that reduce the occurrence of waterborne diseases.

In June 2019, to ensure sustainability within the Tanzanian organization, Maji Safi Group became an International Non-Governmental Organization (INGO). MSG builds and trains teams of local, mostly female, Community Health Educators (CHEs), who lead disease prevention outreach and interventions. MSG was founded with the goal of developing and implementing sustainable and effective programs through participatory methods, relying on our CHEs' expertise, community recommendations, and needs assessments. Currently, MSG effectively runs 14 community programs. Our CHEs engage residents through home visits, hospital-based programs, school groups, singing and dance groups, sports, and other community events (e.g., the local radio station, places of business, and local markets). These programs touch a wide spectrum of stakeholders, such as parents, teachers, healthcare providers, government leaders, and youths. Each MSG program was created to reduce the occurrence of preventable diseases that would otherwise continue to paralyze development. MSG does this by empowering women, youths, and vulnerable groups to be changemakers of their community's health. To reach this goal, MSG addresses the root causes of recurring preventable diseases through water, sanitation, and hygiene (WASH) and healthy lifestyle education.

MSG's organizational approach embodies Confucius' philosophy: "Tell me and I will forget. Show me and I may remember. Involve me and I will understand". MSG believes that by engaging communities with fun and interactive lessons on disease prevention, participants will have the knowledge and motivation to improve their water, sanitation, and hygiene (WASH) behaviors. Since May 2012, Maji Safi Group has helped local authorities fight four cholera outbreaks and has directly taught WASH lessons and the importance of improving personal and community WASH behaviors to 328,790 Mara Region residents – or to approximately 1,294,690 Mara Region residents, when including radio shows.

Maji Safi Group Facts	
Country	Tanzania
Region	Mara
Approximate Population of Mara Region	1,700,000 Residents
Districts MSG Works in and their Approximate Populations	Rorya District = 265,000 Residents Musoma Rural = 208,000 Residents Musoma Town = 135,000 Residents
Year Established	2012
Organization Type	Nonprofit LLC, incorporated in Tanzania July 1, 2014 through July 1, 2019, when the organization reregistered as an International Non-governmental Organization (INGO).
"Maji Safi" is Swahili for	"Clean Water"
MSG Mission Statement	To promote health and disease prevention in underserved and impoverished areas through holistic community empowerment and by working predominantly with local women and youth.
Number of Programs	14 Programs
Number of Residents Reached through MSG Programs (2012-2019)	328,790 direct participants and 1,294,690 participants including repeat listeners of radio shows.
Number of Community Health Educators	16
Number of Community Health Educator Trainees	11

MSG's 7-Year Impact

Over the seven years we have now been in operation, we have learned so much and reached millions with our lifesaving WASH education. Each year, we learn from the previous year and adjust programs, measurements, and curriculum to make an even more positive impact on the communities we teach, see Figure 1. Overall, including the radio program, we have cumulatively reached 1,291,690 residents and have directly taught 328,790 people WASH lessons, see Figure 2 and Figure 3.

Additionally, MSG continued to collect extensive information about disease rates during the 2019 Health Screening Program, and as these rates represent the fifth year in our longitudinal study, they are extremely important to assessing the overall impact MSG's lessons are having on WASH behaviors in the community.

Over five years of screenings, we have found a consistent pattern: People who have been exposed to MSG's WASH education are much healthier than those who have not received such education. In 2019, 42% of the health screening

participants tested positive for one or more water-related diseases (amoebiasis, intestinal worms, schistosomiasis in stool, schistosomiasis in urine, malaria, or ringworm). These results indicate a decline in overall disease rates for all five years of the health screening program: 55%, 56%, 51%, and 54% in 2015, 2016, 2017, and 2018, respectively. Prevention is proving to save MSG program participants from continuously contracting WASH-related diseases. This year, it has also become apparent that those related to and/or interacting with program participants, whether through a family member or an entire school, benefit from the health education their connection is learning. Both family members and students from schools that have partnered with MSG for a long time had lower WASH disease rates. Figures 4-7 below demonstrate how disease rates have varied over the years. The common trend we are seeing is that each consecutive year, current and past program participants have lower disease rates than non-program participants (except for amoebiasis in 2015, schistosomiasis in urine in 2015, and UTI rates in 2015, 2016, and 2017). Overall, we are seeing that our lifesaving education is reaching thousands and helping their communities become more knowledgeable about WASH issues, which in turn improves their health.

Figure 1: MSG's 7-Year Impact (2012-2019)

Program/ Activity	Number Reached August 2012 – August 2013	Number Reached September 2013 – December 2014	Number Reached January 2015 – December 2015	Number Reached January 2016 – December 2016	Number Reached January 2017 – December 2017	Number Reached January 2018 – December 2018	Number Reached January 2019 – December 2019	Total Number Reached Per Program
Home Visit	1,699 Family Members	1,025 Family Members	2,464 Family Members	1,207 Family Members	2,755 Family Members	1,323 Family Members	885 Family Members	11,358 Family Members
After School	3,808 Students	1,243 Students	931 Students	1,588 Students	2,575 Students	405 Students	262 Students	10,812 Students
Disease Prevention Center (DPC)	791 Visitors to DPC	802 Visitors to DPC	1,210 Visitors to DPC	1,032 Visitors to DPC	1,445 Visitors to DPC	1,193 Visitors to DPC	645 Visitors to DPC	7,118 Visitors to DPC
Singing and Dance Group (including performances)	756 Community Members	1,048 Community Members	1,746 Community Members	3,250 Community Members	7,858 Community Members	4,015 Community Members	4,221 Community Members	22,894 Community Members
Maji Safi Cup	2,032 Participants	1,697 Participants	4,170 Participants	6,936 Participants	8,054 Participants	3,822 Participants		26,711 Participants
Outreach (events, market visits, stores and salons, restaurants)	1,907 Community Members	6,521 Community Members	8,827 Community Members	7,699 Community Members	7,278 Community Members	13,022 Community Members	24,540 Community Members	69,794 Community Members
Female Hygiene	-	1,282 Participants	7,890 Participants	2,342 Participants	2,502 Participants	4,876 Participants	7,558 Participants	26,450 Participants
Hotline*	-	1,326 Participants	4,603 Participants	1,467 Participants	1,830 Participants	1,513 Participants	1,305 Participants	12,044 Participants
Radio Show Listeners	-	31,500 Listeners	49,000 Listeners	98,000 Listeners	231,000 Listeners	185,200 Listeners	371,200 Listeners	965,900 Listeners
Radio Show Callers				206 Direct Callers	254 Direct Callers	144 Direct Callers	158 Direct Callers	762 Direct Callers
Radio Show SMS Messages	-	-	-	-	-	372 SMS Messages	753 SMS Messages	1,125 SMS Messages
Health Screenings	-	-	3,060 Screened	5,160 Screened	3,071 Screened	6,911 Screened	8,299 Screened	26,501 Screened
Cholera Outreach	-	-	53,237 Participants	41,593 Participants	-	-	-	94,830 Participants
Male Hygiene	-	-	-	348 Participants	772 Participants	2,485 Participants	1,048 Participants	4,653 Participants
Toilet Project	-	-	-	-	175 Users	3,223 Users	4,740 Users	8,138 Users
Water Project	-	-	-	-	-	-	5,600 Users	5,600 Users
Total reached each year (excluding Radio Show, but including callers)	10,993 Community Members	14,944 Community Members	88,138 Community Members	72,828 Community Members	38,569 Community Members	42,932 Community Members	60,014 Community Members	328,790 Community Members
Total reached each year (including Radio Show)	**10,993 Community Members**	**46,444 Community Members**	**137,138 Community Members**	**170,828 Community Members**	**269,569 Community Members**	**225,281 Community Members**	**431,214 Community Members**	**1,294,690 Community Members**

*Notes: *Hotline numbers indicate number of SMS messages sent/received and number of incoming and outgoing calls made. **Radio Show is estimated to reach approximately 6,400 listeners per show aired at Sachita FM. This number may indicate repeat listeners as well.*

Figure 2: Cumulative Number of Total Number of Program Participants Reached

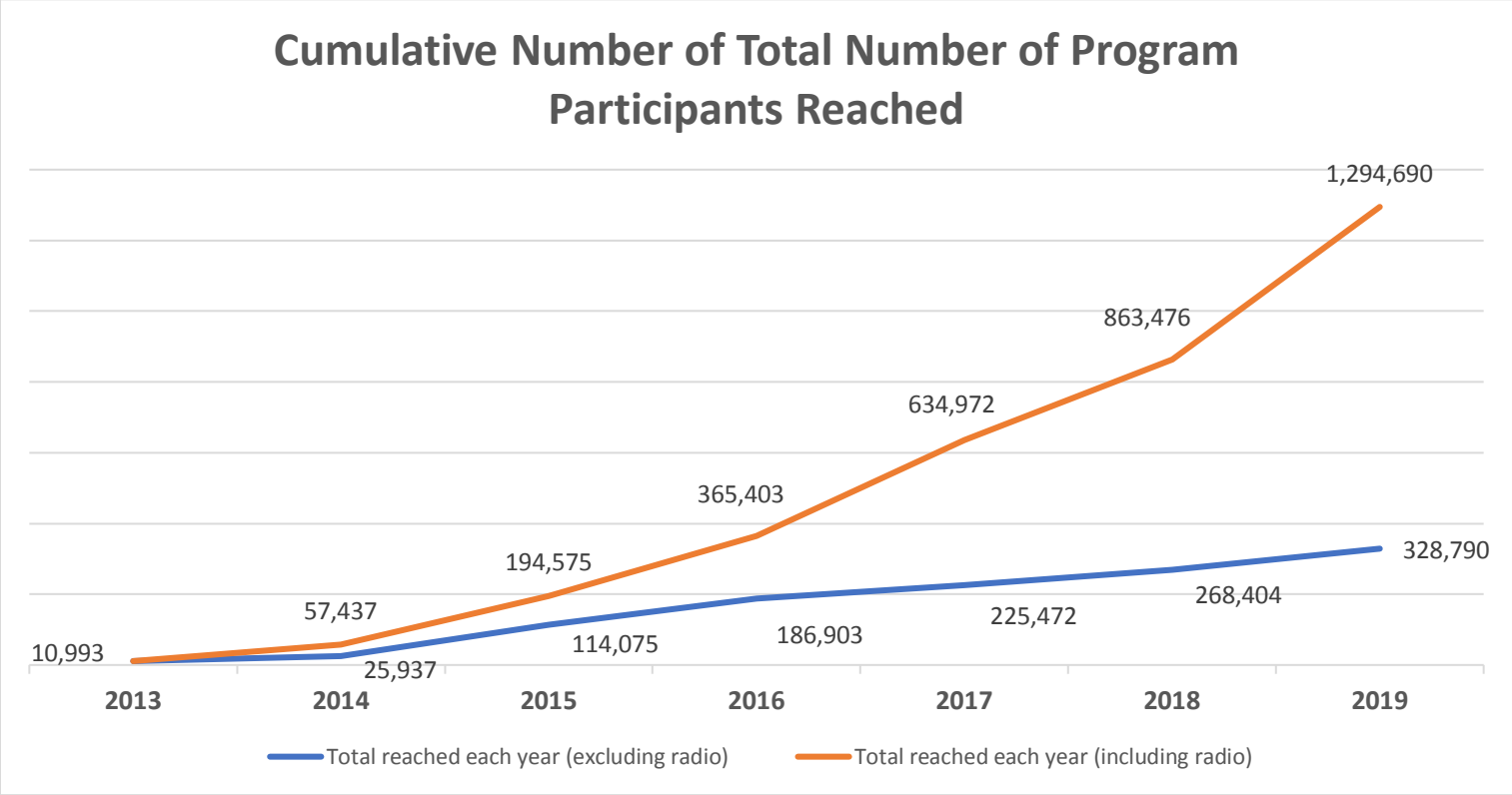


Figure 3: Cumulative Number of Program Participants by Program

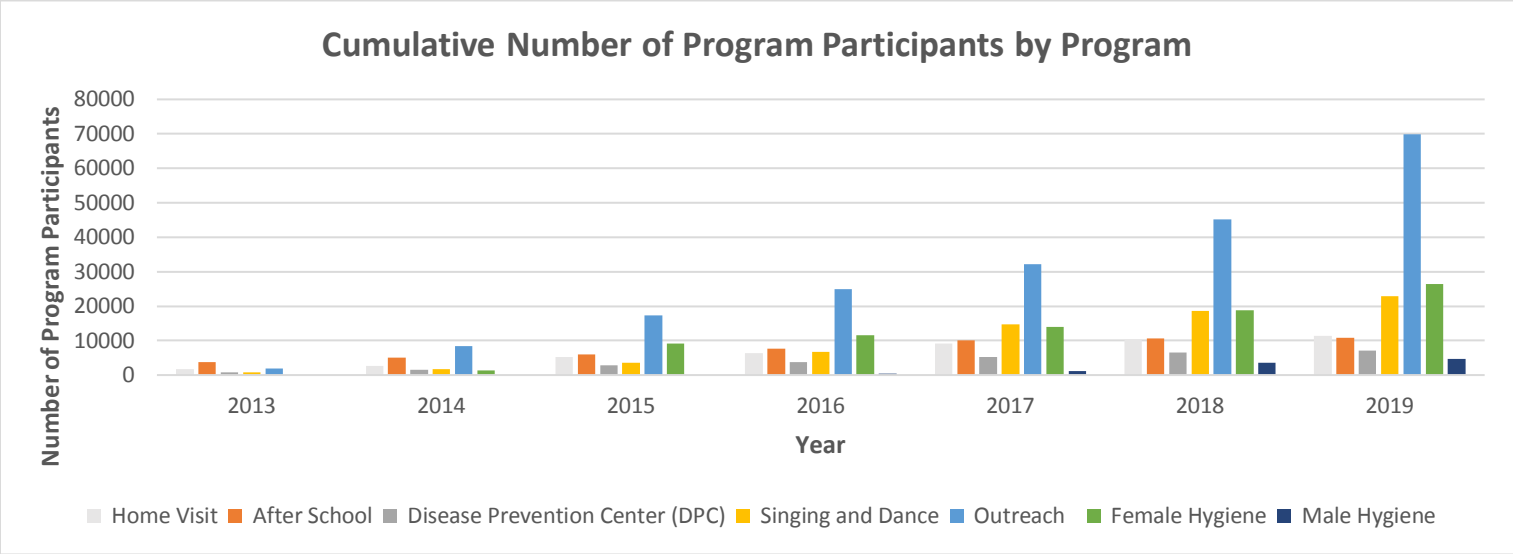
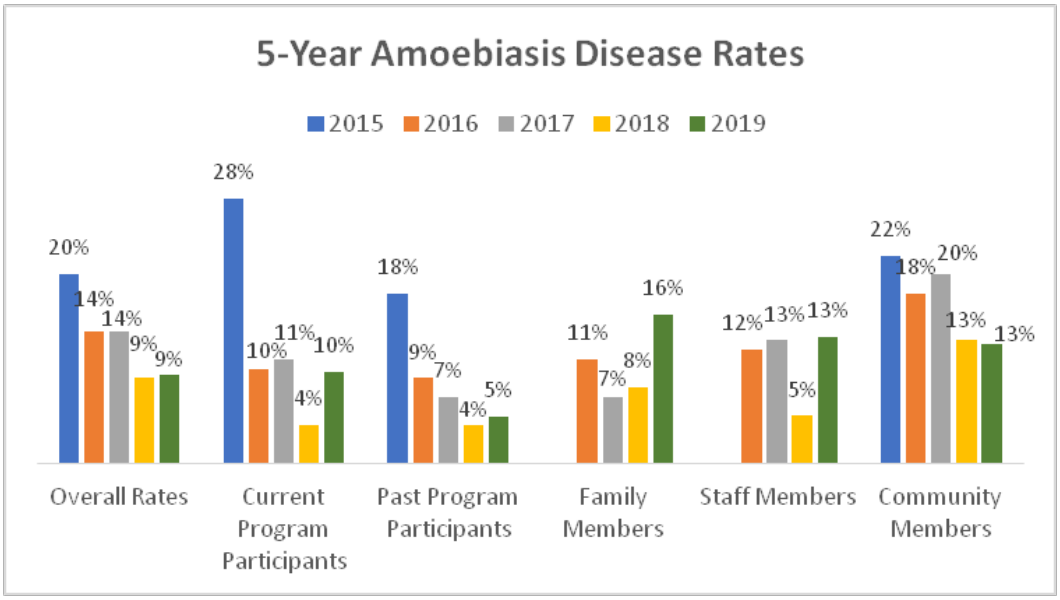
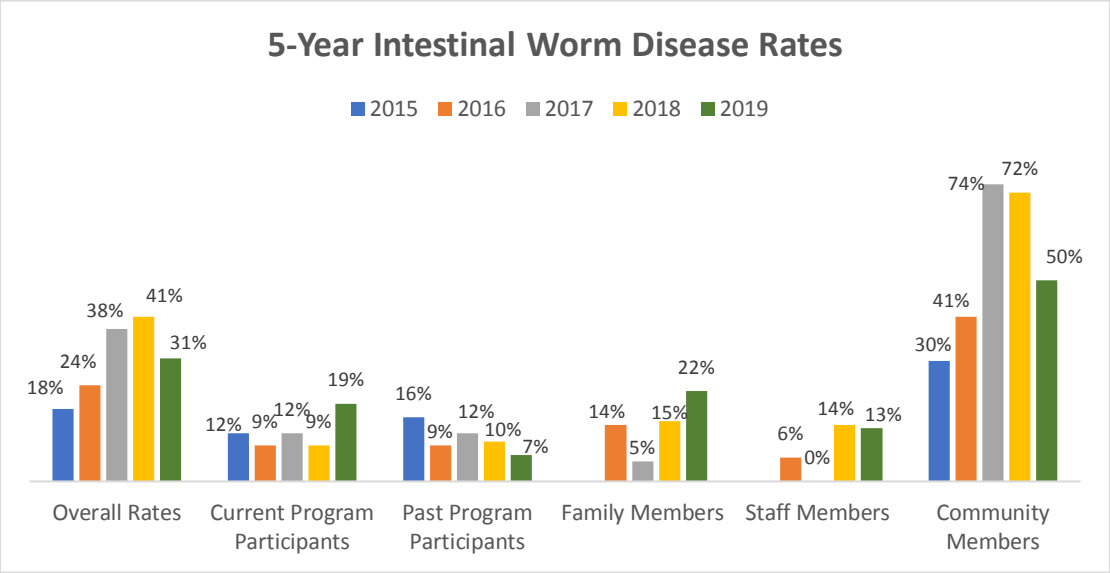


Figure 4: 5-Year Amoebiasis Disease Rates



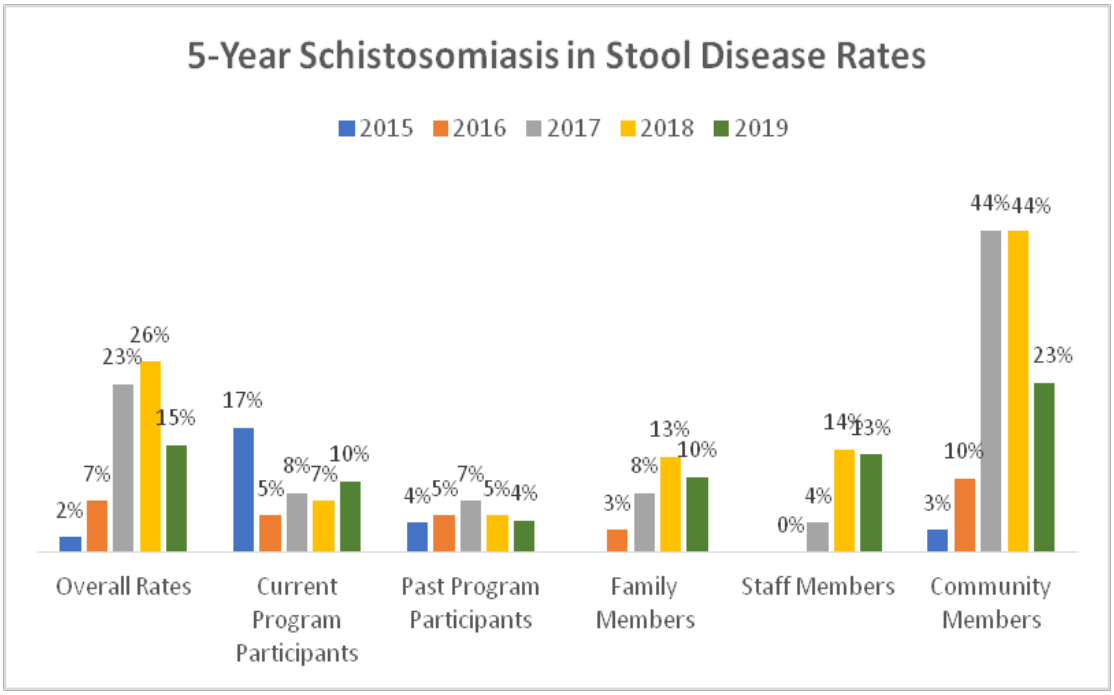
**Note: Family members and staff members were not tested in 2015. (Community Members = Non-program participants).*

Figure 5: 5-Year Intestinal Worm Disease Rates



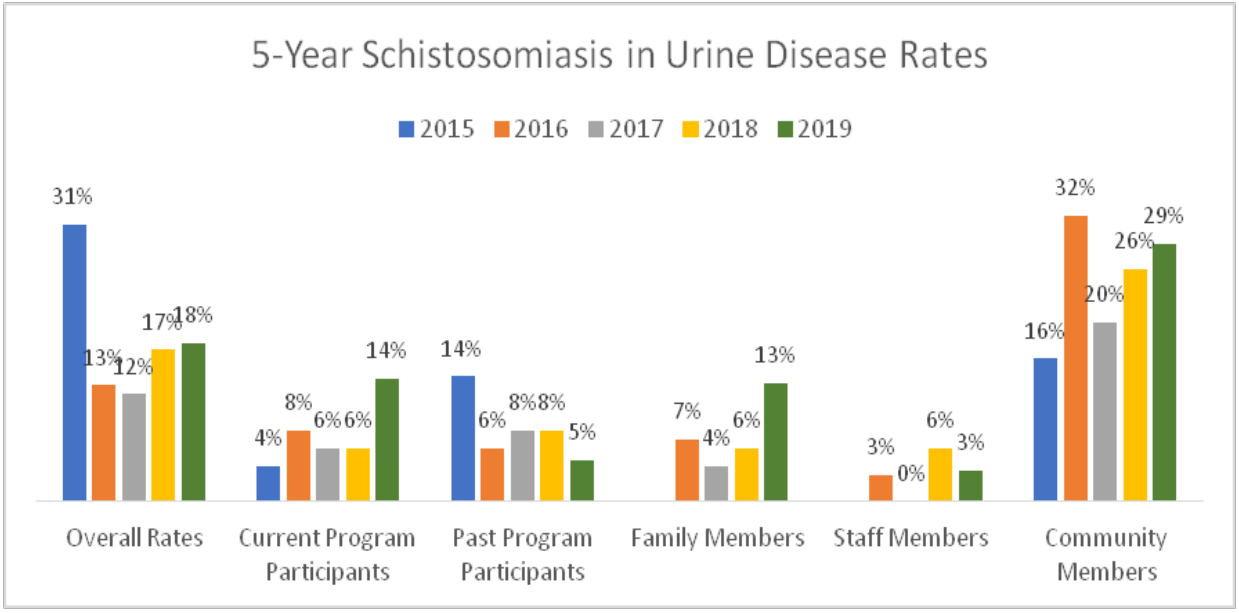
**Note: Family members and staff members were not tested in 2015. (Community Members = Non-program participants).*

Figure 6: 5-Year Schistosomiasis in Stool Disease Rates



**Note: Family members and staff members were not tested in 2015. (Community Members = Non-program participants).*

Figure 7: 5-Year Schistosomiasis in Urine Disease Rates

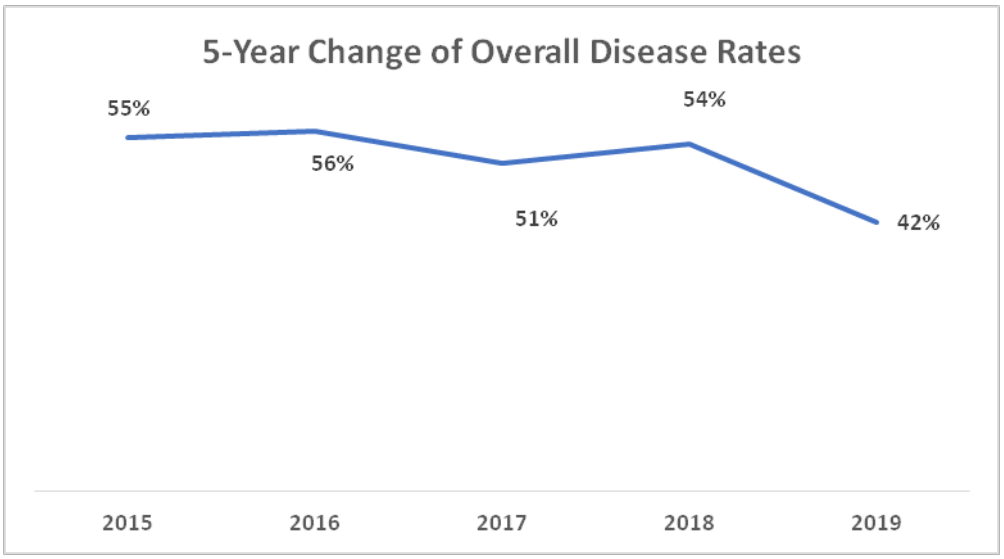


**Note: Family members and staff members were not tested in 2015. (Community Members = Non-program participants).*

When looking at the five-year change in overall disease rates (i.e., calculating the percentage of those screened who have one or more diseases), there was a significant decrease in overall disease rates between 2018 and 2019. This was to be expected as the majority of the health screenings were conducted in communities and schools that were being or had

been exposed to MSG's WASH education and interventions. Only a few new communities and schools were introduced in the Health Screening Program. This is evidence that MSG's work is contributing to improving the health of local communities in the Rorya District. The data also supports MSG's theory of change that educating communities to teach each other and impact their families and other non-program participants to improve WASH knowledge and habits at a community level is effective. The overall disease rates from 2015-2019 are indicated in Figure 8.

Figure 8: 5-Year Trend of Overall Disease Rates



2019 Overview

In 2019, Maji Safi Group Tanzania accomplished many goals with the financial assistance from Maji Safi Group USA, Dining for Women, LUSH Charity Pot, First Foundation, Beyond our Borders, Friends of Tanzania, the Posner Center, the Tanzanian government, and other generous donors. MSG continued to first and foremost invest in its Community Health Educator (CHE) Program by providing continuous education and ensuring the WASH lessons provided to the community were up-to-date and properly understood. MSG focused on providing its staff with proper benefits and invested in their lives and the lives of their families. To become a more efficiently run organization, MSG also hired a Program Manager and an HR and Administrative Assistant.

Overall, MSG reached over 421,391 community members, including MSG radio show listeners, event spectators, and announcement listeners. When only looking at the lessons taught directly (in-person), CHEs reached almost 49,438 Mara Region community members with lifesaving WASH education.

MSG continued to maintain and increase organizational partnerships during 2019. Our major past partners included TAWASANET (Tanzania Water and Sanitation Network), Tanzanian Menstrual Hygiene Management Coalition, National Council of NGOs, TAFIRI (Tanzania Fisheries Research Institute), Afripads, First Foundation, village and district councils, regional and district level governments, the Shirati KMT District Hospital, Washington University in St. Louis, the WHO, the University of Dar es Salaam, Lund University, and the LUSH Foundation. Our new partners included the Posner Center for International Development, UNICEF, National Institute of Medical Research, Africa School Assistance Program (ASAP), Rustic Pathways, Anuflo Industries, Be Girl, ELEA Pads, SAALT, SUNY NYC, UC Berkeley, and the Mortenson Center at CU Boulder.

MSG continued to maintain its existing programs and focused on creating sustainable change among program participants. Our participatory model has gained acceptance in the community, and our monitoring and evaluation results indicate that Shirati community members are changing their WASH behaviors and becoming healthier. This is seen especially with MSG program participants and participants' families who have worked with MSG throughout the years. The rest of this report gives a detailed analysis of each program explaining the program's reach, successes, and opportunities for improvement.

1. Community Health Educator Program

Maji Safi Group employs full-time Community Health Educators (CHEs), also known as *Mabalozi wa Maji*, to promote proper water, sanitation, and hygiene (WASH) practices. MSG trains and certifies CHEs to teach disease prevention methods, such as correctly filtering and treating water, cleaning and preparing food, thoroughly washing hands, and practicing proper menstrual hygiene management. CHEs are the face of Maji Safi Group in the Mara Region – they are responsible for facilitating and leading all of MSG's interventions, and, as they speak the local language and understand their community's history and culture, they are a highly effective group in terms of initiating WASH behavior change.

Hiring local residents also provides employment opportunities and builds capacity in the community. In addition, as women typically are key changemakers in development, 85% of MSG's CHEs are female. Quality employment with social security and health insurance benefits improves the health of their families and ensures that their children can stay in school. When MSG employees invest in healthy practices in their homes and obtain financial stability for their families, they are further empowered to be WASH leaders and role models in their communities.

MSG continued working with 16 full-time CHEs in 2019. In the beginning of 2019, MSG hired an additional 16 CHE Trainees through a competitive process to increase the number and expertise of our staff. Throughout the year, these CHE Trainees received mentorship and learned skills necessary to graduate from the program and become CHEs. At the end of 2019, 11 of the 16 CHE Trainees were hired and promoted to the CHE level. Additionally, in September, one of the CHEs was sponsored by an MSG Donor to attend an institute of higher learning to improve her education and increase her professional skills within MSG. She attended Buhare Community Development Training Institute for a one-year Community Development course. One other CHE who had been sponsored in 2018 to attend the Buhare Community Development Training Institute for a one-year Community Development course graduated in October and returned to MSG as a full-time employee ready to utilize the new skills she had learned during the previous year.

2. Learning Tools

MSG spreads WASH and disease prevention awareness through various mediums. Wall murals, painted by local artists, provide a constant reminder of WASH best practices. These paintings visually demonstrate disease prevention techniques, such as washing your hands properly, brushing your teeth, and using the toilet. In conjunction with other MSG outreach programs, these murals are easily accessible and long-lasting learning tools for the entire community.

Our very skilled Community Arts Coordinator (CAC) and our Learning Tools Coordinator accomplished many tasks this year. Our CAC, a commissioned artist, completed painting three murals. The murals at Kirongwe Primary School and Bukura Secondary depict various ways to manage menstrual hygiene and proper behaviors to ensure that water, sanitation, and hygiene practices are upheld. The one at Majengo Primary School depicts conservation of water sources and how to prevent schistosomiasis. Along with school murals, the CAC painted murals at the MSG offices which are used as WASH education tools for visitors and participants.

3. Home Visit Program

The Home Visit Program was MSG's first program, started in August 2012. From the beginning, teaching female heads of households, families, and vulnerable groups about WASH and disease prevention via one-on-one lessons at their homes has been a priority. The goal of this program is to teach community members how to improve their WASH behaviors in their home environments. During the non-farming dry season, CHEs conduct home visits with local families. During their first visit, the CHEs conduct intake assessments of the families' current WASH and health situation. Two hour-long WASH lessons are then provided to the families based on their specific WASH needs. The number of visits is also based on these needs. Once the CHEs finish teaching the MSG curriculum, they conduct a post assessment with the families to measure their WASH behavioral changes. Post assessments are conducted within two months of the first set of WASH lessons and/or followed up by calling participants on the MSG Hotline.

In 2019, MSG CHEs visited 123 families through the Home Visit Program to provide a series of one-on-one lessons at their homes. While the lessons were taught primarily to female heads of households, the education we provided benefitted entire families. MSG reached 885 people in 123 families. We found that the average family has seven members. Families received intensive education and instruction on how to protect their water supply as well as other WASH lessons, such as information about locally available and affordable toilets that eliminate open defecation and behavioral practices to decrease contracting common water-related diseases such as schistosomiasis and intestinal worms.

Figure 9: Home Visit Participants' Locations 2019

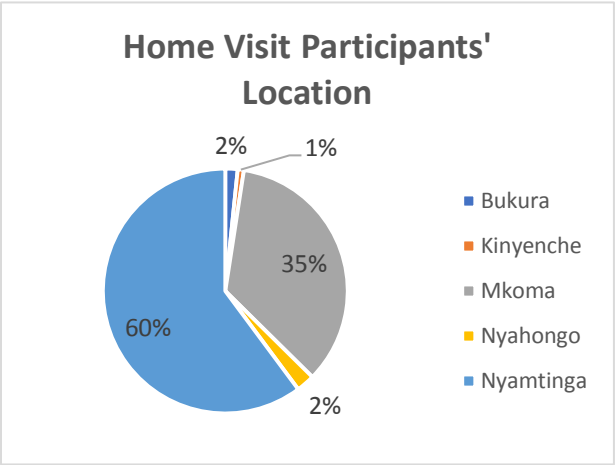


Figure 10: Percentage of Home Visit Participants' Gender in 2019

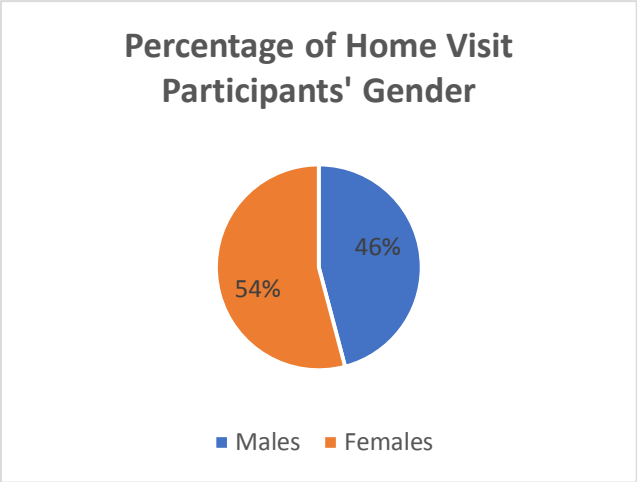


Figure 11: Percentage of Home Visit Participants' Ages in 2019

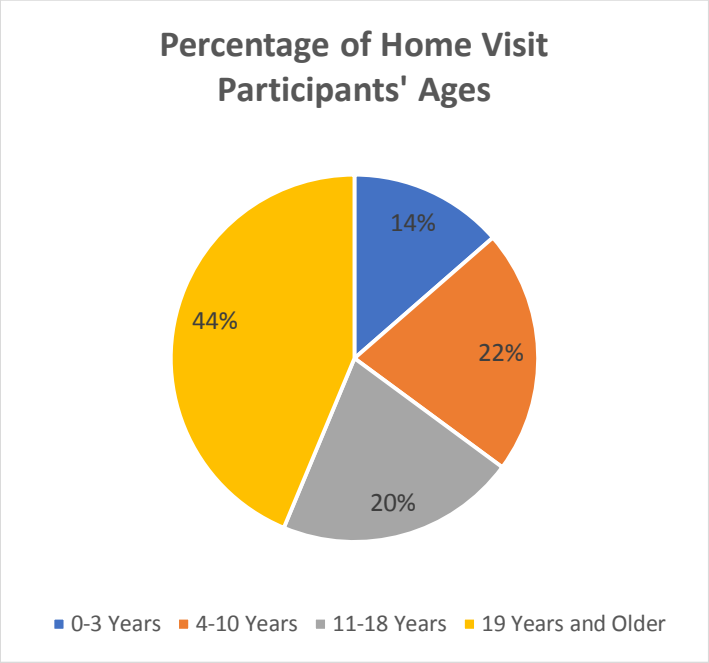


Figure 12: Home Visit Participants' Professions in 2019

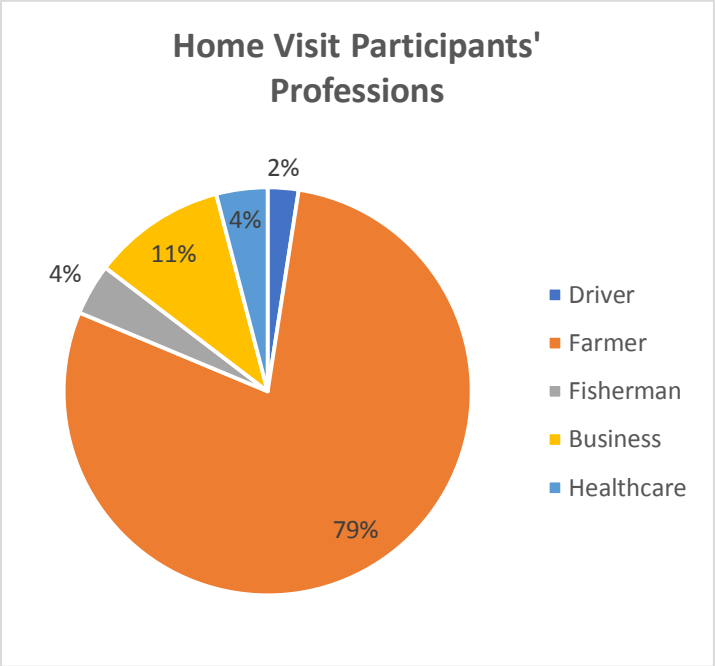


Figure 13: Home Visit Participants' Sources of Water in 2019

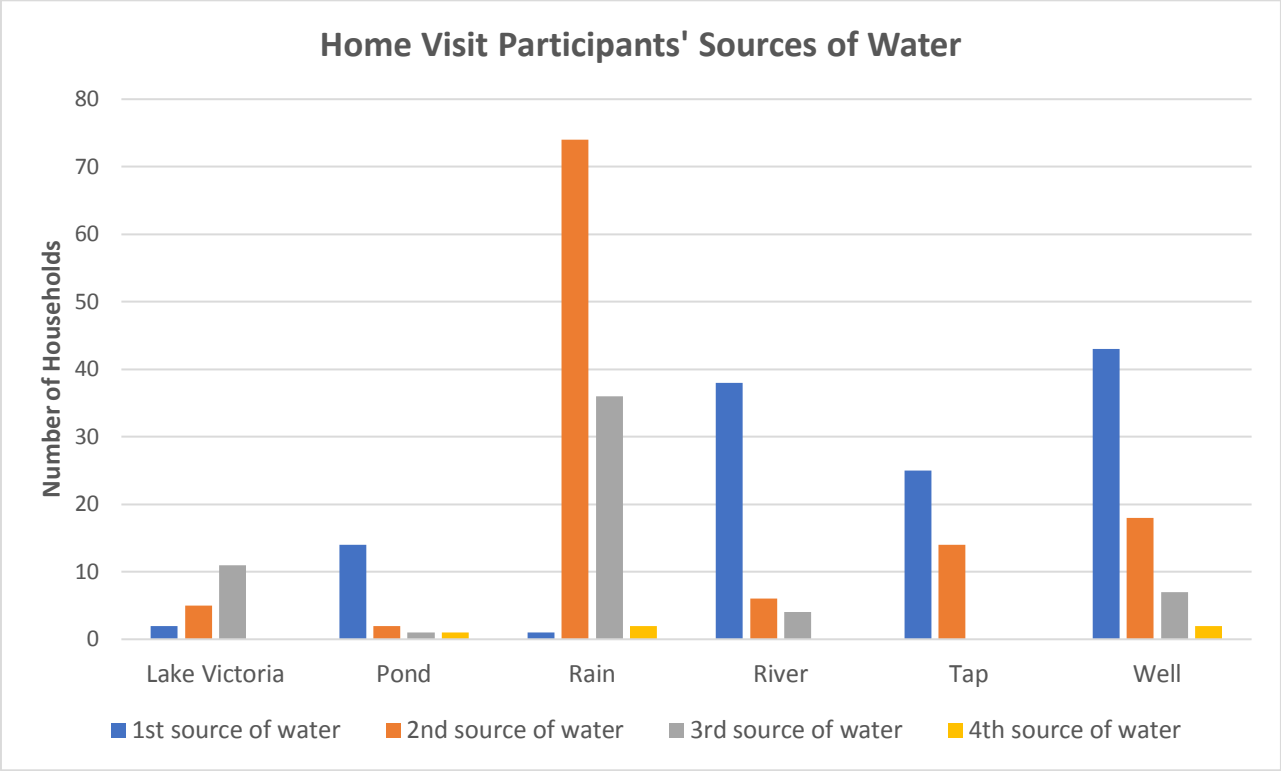


Figure 14: Water Treatment Methods of Home Visit Participants

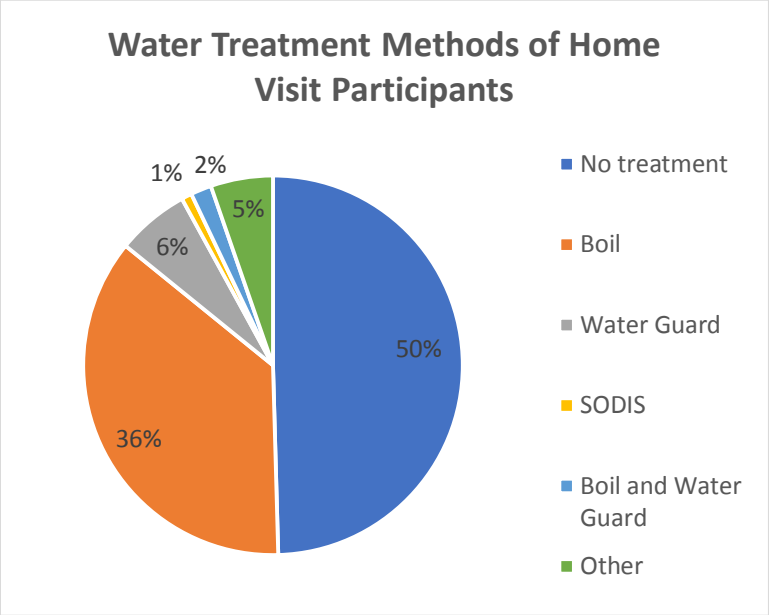


Figure 15: WASH Questions Asked during home visits

Question Asked	Family Answer	Intake Assessment Percentage
1. Does the family filter their drinking water?	Yes	89%
	No	11%
2. At which critical times does the family wash their hands?	Before food preparation	69%
	Before eating	98%
	Before feeding babies	63%
	After defecation	92%
	After cleaning up babies' feces	64%
3. Does the family treat their hand-washing water?	Yes	17%
	No	80%
	Unanswered	3%
4. Does the family use soap when washing their hands?	Yes	81%
	No	19%
5. Does the family cover their food?	Yes	96%
	No	4%
6. Does the family use soap and treated water to wash their dishes?	Uses soap	99%
	Uses treated water	9%
7. Does the family have a latrine?	Yes	93%
	No	7%
8. Does the family use their latrine?	Yes	89%
	No	6%
	Unanswered	5%
9. Type of sanitation facility	Improved pit latrine	21%
	Pit latrine	71%
	Open defecation (no toilet)	1%
	Digging hole	5%
	Unanswered	2%
10. How does the family dispose of trash?	No means of disposal	6%
	Burning	54%
	Pit (digging hole)	28%
	Trash pile (no digging)	8%
	Other	2%
	Unanswered	2%
11. Does the family have good personal hygiene? (*subjective from CHE perspective)	Yes	92%
	No	6%
	Unanswered	2%

These WASH behavioral changes are key to changing the health of a community. While MSG has seen significant changes in Home Visit Program participants, the true indicator of change is health. Each year, MSG measures the community's health through our Health Screening Program. Figure 16 shows results from Home Visit Program participants. Data indicate that Home Visit Program participants have a lower disease prevalence rate for most WASH-related diseases (amoebiasis, intestinal worms, schistosomiasis in stool and urine, and malaria). These results are similar to the Health Screening results from previous years.

Figure 16: Home Visit Program Participants' Health Screening Disease Rates

Health Screening Rates	Number screened	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria
Overall percentage of health screening participants who tested positive (2019)	8,299	9%	31%	15%	18%	29%
Home Visit Program Participants (2019)	269	5%	9%	3%	6%	15%
Home Visit Program Participants (2018)	253	5%	7%	5%	5%	13%
Home Visit Program Participants (2017)	239	11%	10%	3%	8%	-
Home Visit Program Participants (2016)	164	13%	8%	3%	7%	-
Non-Program Participants (2019)	4,356	13%	50%	23%	29%	40%

Home Visit Discussion

In 2019, more than half of all Home Visit Program participants were located in Nyamtinga, as MSG expanded the Home Visit Program further into other areas of the Rorya District (Figure 9). Figure 13 shows that the first source of water was found to be wells, followed by rainwater. Fifty percent of Home Visit participants reported that they did not treat their water, followed by 36% who reported boiling their water as their first choice of purification (Figure 14). This highlights a strong need for further education as nearly half of the participants used their water without treating it, yet the most common water collection methods include using various receptacles to fetch and store water. This increases the likelihood of water contamination. Figure 15 pinpoints responses to other important questions asked during home visits. It is

important to note that families prioritize using soap to treating water for household tasks as evidenced by only 17% reporting treating their handwashing water while 81% reported using soap for handwashing. Furthermore, 99% reported using soap to wash their dishes while only 9% reported using treated water for this task.

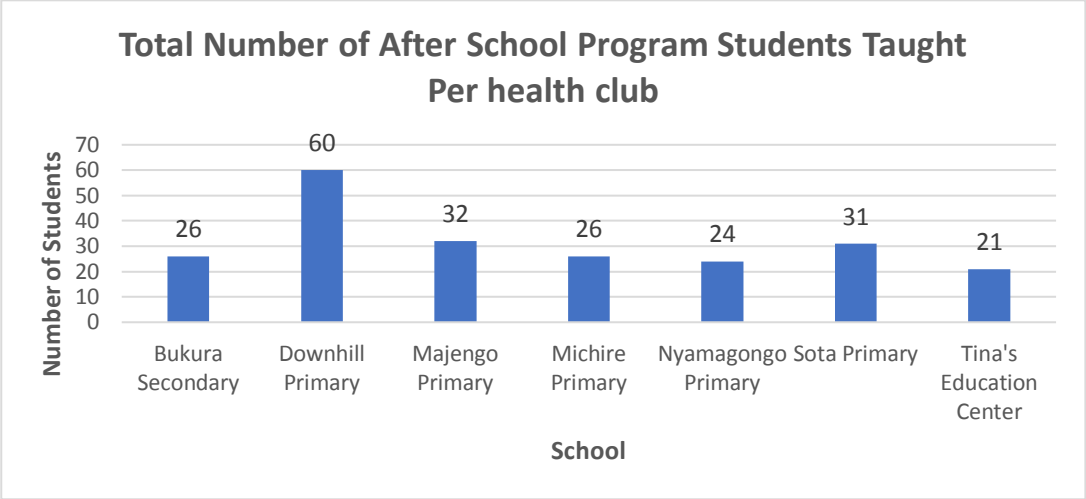
The Home Visit Program continues to be an important and impactful MSG program. Program participants continuously say that MSG's education has helped their families change their WASH behaviors and protect their families from waterborne and water-related diseases. We saw families start filtering and treating their water, build latrines and stop open defecation, start using soap, and start washing their hands at critical times. The real impact of the Home Visit Program was reflected in the health screening rates, which indicated that those who participated in the Home Visit Program had a lower disease prevalence rate for amoebas, intestinal worms, schistosomiasis, and malaria than non-program participants without MSG education. It is encouraging to see the data reflect an improvement in the families' WASH behaviors in response to the core MSG WASH lessons about water treatment, hand washing during critical times, and latrine use.

4. After School Program

The After School Program started in 2012 and is one of MSG's original programs. The goal of this program is to teach children about proper WASH behaviors and disease prevention, while also allowing them to have a creative, fun experience. By learning how to care properly for their own health, students stay healthy, remain in school, and can therefore achieve their full potential. Using the students' creative, artistic, and critical thinking skills, CHEs teach disease prevention education about topics such as waterborne and water-related diseases, proper water treatment, sanitation, hygiene practices, and the fecal-oral disease cycle. MSG also donates handwashing stations to enable proper WASH techniques at schools.

Since starting this program in 2012, MSG has taught in 19 primary and secondary schools, reaching 10,812 students. In 2015, the District Education Officer granted MSG permission to work in all 126 primary schools in the Rorya District. It is our goal to work in as many primary schools as we can, so we can continue to spread this important, life-changing WASH education. In 2019, MSG focused on providing MSG education to seven schools: four government primary schools (Majengo Primary School, Michire Primary School, Nyamagongo Primary School, and Sota Primary School), two private primary schools (Downhill primary school and Tina's Education Center), and one government secondary school (Bukura Secondary School). See Figure 17 for the breakdown of the number of students taught per school.

Figure 17: Total Number of After School Program Students Taught per health club (see below for info about health clubs)



In the seven schools we continuously visited, CHEs directly taught 220 students through Health Clubs. MSG Health Clubs have 40 students or fewer per school. Students selected to be in the Health Club work together with their teachers, parents, and school committees to ensure that the knowledge they are learning from MSG continues to be passed on to the rest of the school. Each Health Club has a relatively small number of students to ensure that they receive instruction in an environment that is conducive to learning, with a preference to smaller-sized classrooms rather than larger classrooms. After interested students had been identified at each school with the help of teachers, parents were notified. MSG then hosted a club-opening ceremony where WASH-related supplies (handwashing buckets, soap, water storage containers, chlorine tablets, etc.) were presented, and the purpose of the School Health Club was explained to the teachers, parents, and the selected students. The School Health Clubs are responsible for buying and replenishing WASH supplies.

In 2019, we expanded our After School Program into Downhill Primary School, phased out of Obwere Primary School as the established Health Club had proven to be independently sustainable, and transformed Majengo and Nyamagongo Primary Schools into Health Clubs as opposed to teaching entire classrooms. As shown in Figure 17, Downhill Primary School had a higher number of students than the other schools. More students were initially taught in this school, then later in the year, a Health Club was formed, and the number of students decreased.

As we have learned from previous years of teaching school pupils, students retain more WASH knowledge and score higher on their WASH exams if the student-teacher ratio is decreased. Figure 18 contains the test scores from all seven schools. Teaching through school Health Clubs provided the students with more appropriate learning conditions in which more attention could be given to each student, and there was less distraction from having too many students in one classroom.

Figure 18: WASH Test Comparison

School	Average Test Score	Average Test Score Tanzanian Letter Grade	Highest Test Score	Lowest Test Score
All Health Clubs	59%	D – Average	95%	4%
Bukura Health Club	55%	D – Average	84%	36%
Majengo Health Club	58%	D – Average	95%	20%
Michire Health Club	49%	E – Acceptable	82%	4%
Nyamagongo Health Club	63%	C – Good	90%	29%
Sota Health Club	64%	C – Good	95%	11%
Tina's Health Club	67%	C – Good	87%	43%
Downhill Regular After School Program	56%	D – Average	82%	33%

**Note: Test scores were calculated on the Tanzanian scale, which has different passing qualifications than that of the U.S.*

In 2019, MSG continued to measure disease rates for After School Program participants through health screenings. As shown in Figure 19, After School Program participants had a lower disease prevalence rate than those who had never received MSG education.

Figure 19: After School Program Participants' Health Screening Disease Rates

Health Screening Rates	Number screened	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria
Overall percentage of health screening participants who tested positive (2019)	8,299	9%	31%	15%	18%	29%
After School Program Participants (2019)	696	5%	2%	4%	2%	16%
After School Program Participants (2018)	985	4%	9%	7%	5%	15%
After School Program Participants (2017)	402	7%	8%	4%	6%	-
After School Program Participants (2016)	1,638	8%	7%	4%	7%	-
Non-Program Participants (2019)	4,356	13%	50%	23%	29%	40%

After School Discussion

The After School Program continues to be an important program for children, adolescents, teachers, and their families. In 2019, opening new School Health Clubs helped the students retain WASH knowledge better and be better prepared to continue teaching future students WASH education once MSG leaves a school. We expanded this program into one new school, Downhill Primary School, phased out of Obwere Primary School, and transformed Majengo and Nyamagongo Primary Schools into Health Clubs. We recommend continuing to open School Health Clubs and expanding to new schools in the future to help the students and teachers take ownership of their WASH knowledge and School Health Club. The smaller the class size, the more WASH education is retained by the students. Teachers, students, and parents were able to take ownership of their newly gained WASH knowledge and continue passing the knowledge on to future students. Additionally, the health screening data indicate that MSG program participants have a lower disease prevalence rate even when the education was from previous years. Even though MSG taught fewer students at participating schools, the Health Club members were successful in continuing to teach schoolmates about water-related disease prevention and health education. This resulted in students at those schools having lower disease prevalence rates than students at schools where MSG had not yet taught. These results are similar to the Health Screening results from previous years.

5. Singing and Dance Program

The Singing and Dance Program started in 2012, which makes it one of MSG's oldest programs. Its goal is to use creative activities, such as songs, skits, and dances to learn and teach WASH lessons. Each lesson includes a song, dance, skit, art project or poem. Using creative and fun activities helps children remember these important WASH lessons. Ages of program participants ranged from 5-15.

With funding from First Foundation, the Singing and Dance Program explored peer-to-peer teaching among participants in 2019 by teaching 47 participants in weekly regular classes. Several other participants attended classes irregularly, but they have not been included in this number. The Singing and Dance Group consists of two groups: older students (ages 11-15) and younger students (ages 5-10). Every Monday, the younger students had an opportunity to meet, learn about WASH, and sing and dance with children in their age group. The older students met every Thursday, and they focused on skits and peer-to-peer teaching. All students from both age groups were invited to participate in Singing and Dance on Wednesdays. Most students participated in the Wednesday group; however, some felt more comfortable coming to only their age-group classes. This program met throughout the year. On average, each group met four times a month for ten months (see Figure 20).

The peer-to-peer component was intended to allow for the older Singing and Dance Group participants to learn how to effectively educate their peers about public health and changing their WASH behaviors, rather than depending on Community Health Educators (CHEs) or other adult teachers. Research has found that peer-to-peer teaching has been successful among youths because they are easily influenced and care about what their peers say and think (Green, J. 2001). Additionally, peer-to-peer teaching is a highly economical way to spread health education, and by asking youths to teach WASH education to their peers, the education becomes more sustainable and highly engaging, and the students are empowered to be leaders in their community.

MSG began piloting peer-to-peer teaching in the Singing and Dance Group by teaching all 16 WASH lessons to the older Singing and Dance Group participants. After learning the lessons, older participants were tested and trained on how to teach their peers. Six students were selected to be the peer-to-peer facilitators because of their strong understanding of the lessons and their ability to teach others. Apart from the actual WASH content, lessons included tips on how to teach lessons through games, skits, songs, and dances, which are integral in this program to ensure that lessons are memorable for the young age group to maximize knowledge retention. The six older students then taught the younger students twice a month while supervised by the CHEs. Additionally, the peer teachers taught their fellow students during lessons and events at local schools and in the community. Since the Singing and Dance Group participants have been taught throughout the week, their test scores have shown a high understanding of WASH knowledge. The highest score was 100%, and 57% of those tested received an 80% or higher, which is MSG's internal goal.

Figure 20: Singing and Dance Program Participant Information

Month	Group Type	Number of students	Males	Females	Average Class Size	Number of Performances
January	Younger Students	93	35	58	23	-
January	All Students	196	64	132	49	-
January	Older Students	86	31	55	29	-
February	Younger Students	152	71	81	38	-
February	All Students	241	92	149	60	-
February	Older Students	27	8	19	27	-
March	Younger Students	114	56	60	29	-
March	All Students	220	90	130	55	-
March	Older Students	77	22	55	19	-
April	Younger Students	32	9	23	32	2
June	Younger Students	44	18	26	22	-
June	All Students	169	80	89	56	1
June	Older Students	129	60	69	43	-
July	Younger Students	126	60	66	32	-
July	All Students	213	87	128	53	1
July	Older Students	82	22	60	27	-
August	Younger Students	67	31	36	34	-
August	All Students	223	80	143	45	-
August	Older Students	113	40	73	28	-
September	Younger Students	122	41	81	31	-
September	All Students	219	67	152	55	-
September	Older Students	158	49	105	40	1
October	Younger Students	160	63	97	40	
October	All Students	123	62	61	62	2
October	Older Students	175	70	105	35	
November	Younger Students	92	22	70	23	1
November	All Students	176	52	133	44	2
November	Older Students	72	22	50	24	
Total Number Taught		**3,701**	**1,404**	**2,306**	**38**	**10**

In 2019, the Singing and Dance participants performed 10 times in front of a total of 4,174 community members. A detailed account of some select performances is listed below:

- Rorya's Got Talent (Rorya Wanavipaji): MSG hosted its fifth annual talent competition, which attracted 4,049 community members over three events. The first event was the audition, followed by a performance by the semifinalists and then the finalists. Each semi-finalist and finalist had to demonstrate an original talent and a talent that taught WASH-related issues. The Singing and Dance Group performed songs and dances about WASH issues during the first four events.
- Graduation and Parents' Event: This year, the Singing and Dance Graduation and Parents' Event were combined as one celebration. Program participants showcased what they had learned from MSG throughout the year to their peers and guardians through performing songs, skits, and dances. The older students graduated from the Singing and Dance Program and will be able to join either the Female Hygiene Club or Male Hygiene Club in 2020. One hundred and twenty-five people were in attendance.
- Other events were peer-to-peer teaching and were not counted in the community member total.

Health Screening Results

According to the results from the annual health screening campaign, the Singing and Dance Program had a lower prevalence rate of all waterborne and water-related diseases tested for than community members without MSG education (Figure 20). This shows us that the Singing and Dance Program is extremely effective in helping program participants and their families prevent WASH diseases.

Figure 21: Disease Rates among Singing and Dance Program Participants

Health Screening Rates	Number screened	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria
Overall percentage of health screening participants who tested positive (2019)	8299	9%	31%	15%	18%	29%
Singing and Dance Participants (2019)	99	4%	4%	3%	6%	5%
Singing and Dance Participants (2018)	86	4%	4%	8%	0%	4%
Singing and Dance Participants (2017)	84	0%	8%	1%	2%	-
Singing and Dance Participants (2016)	88	9%	5%	5%	6%	-
Non-Program Participants: (2019)	4,356	13%	50%	23%	29%	40%

Singing and Dance Discussion

In 2019, funding for this program allowed MSG to pilot a new concept of peer-to-peer education, in which six older participants taught the younger participants twice a month after being selected and learning from our CHEs. This new concept was a success as it allowed for the older students to gain confidence and teaching skills while educating their peers. This process empowered the older students to be leaders in their community, and it encouraged the younger students to aspire to being peer-to-peer educators in the future as they continue in the Singing and Dance Program. WASH lessons were taught in creative and memorable ways, including songs, skits, and dances. The younger students were taught, and so were large audiences at MSG's various community events. MSG evaluates programs and program participants using qualitative and quantitative measures. Level of confidence, self-esteem, and leadership amongst the older participants, especially the peer-to-peer educators, improved after implementation of the peer-to-peer aspect into our Singing and Dance Program. The 2019 Health Screening results show that disease prevalence rates for Singing and Dance Program participants is once again lower than for community members who have never received MSG education as has been the trend for the last five years. Based on the successes mentioned above, MSG intends to continue incorporating the peer-to-peer aspect of educating participants in our Singing and Dance Program.

6. Disease Prevention Centers

Our first Disease Prevention Center (DPC) started in 2012 at the Shirati KMT District Hospital, which makes it one of MSG's original programs. The goal of this program is to provide disease prevention education in hospital and health clinic settings. MSG has a long-standing partnership with the Shirati KMT District Hospital and has continued to work with the hospital's visitor center. This year, we continued working with the Shirati KMT District Hospital and three other health centers: Masonga Dispensary, RAO Hospital, and Ngasaro Clinic. In 2019, MSG started teaching at two new DPCs, Kothora Dispensary and Sota Health Center, and began providing MSG educational booklets to the Bukama Dispensary for their staff to distribute to patients and visitors. The DPC Program provides health education in the form of demonstrations of proper hygienic behaviors, oral lessons, written materials, and interactive worksheets that the visitors keep as a reminder of the lesson. Education is given to patients, people visiting patients, and hospital staff. Visitors to the DPCs learn about disease transmission, avoiding diseases in the future, and why preventing disease is more economical than treating disease. After disease prevention lessons, the participants are asked questions to monitor their demographics, knowledge of WASH, and familiarity with MSG. This program reaches people from far away because the Shirati KMT District Hospital is where patients from the entire Rorya District and beyond receive treatment.

DPC Demographics

In 2019, the DPCs were open for 62 days, and 645 people visited. On average, the CHEs saw 10 people per day. This number would vary depending on the prevention center, ranging from four to 24 people. Participants are asked five questions when they visit a DPC: 1. Have they heard of MSG before? 2. Have they participated in an MSG program? 3. Do they treat their water before use? 4. Do they know where to get WASH products? 5. Do they have someone in the household under the age of three who has had diarrhea within the past two weeks? The garnered information enables MSG to track DPC participants and assess what is needed to improve public health and behavior patterns in the Shirati community.

Figure 22: Gender of DPC Participants

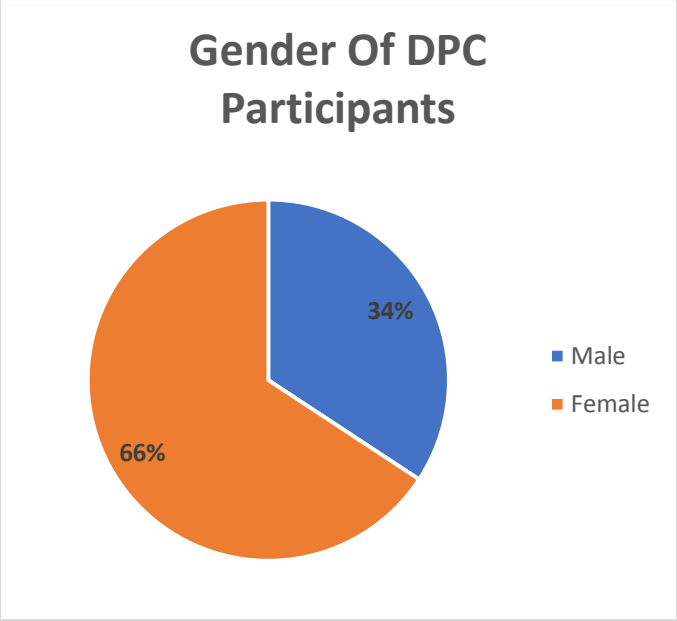
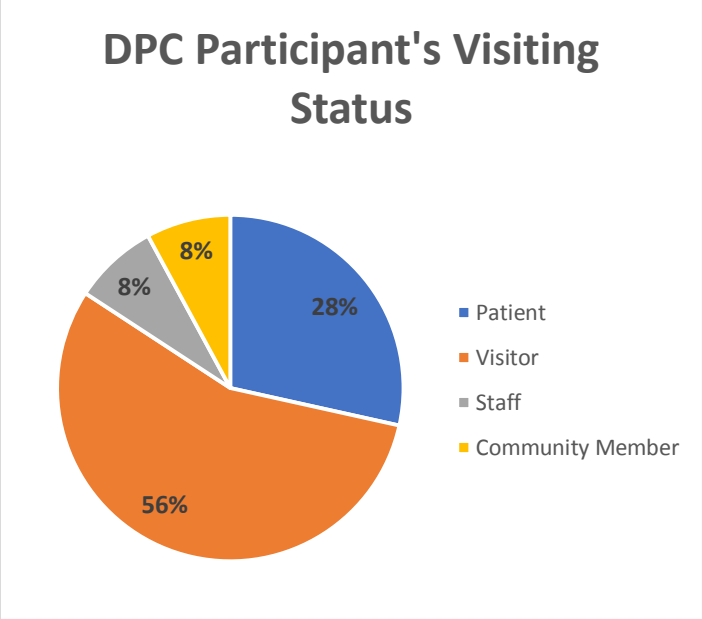


Figure 23: DPC Participants' Visiting Status



DPC Questions:

1. Have they heard of MSG before?

Figure 24: DPC Participants' Familiarity with MSG

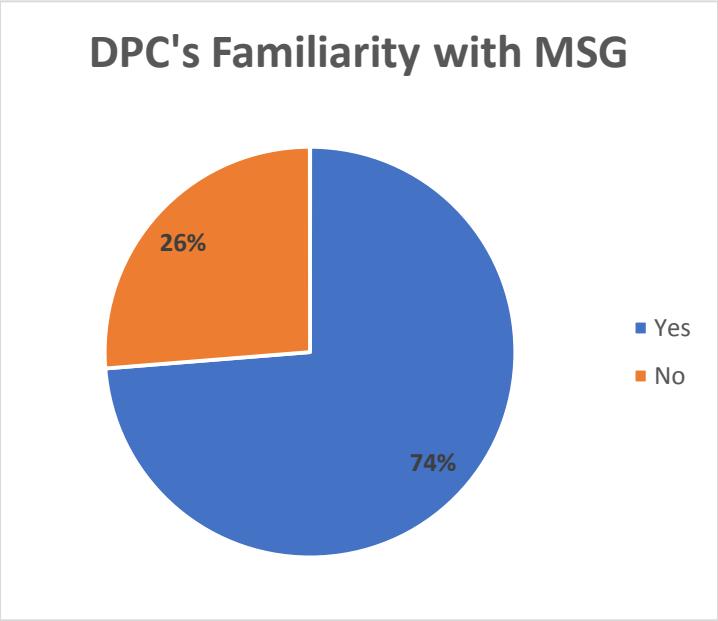
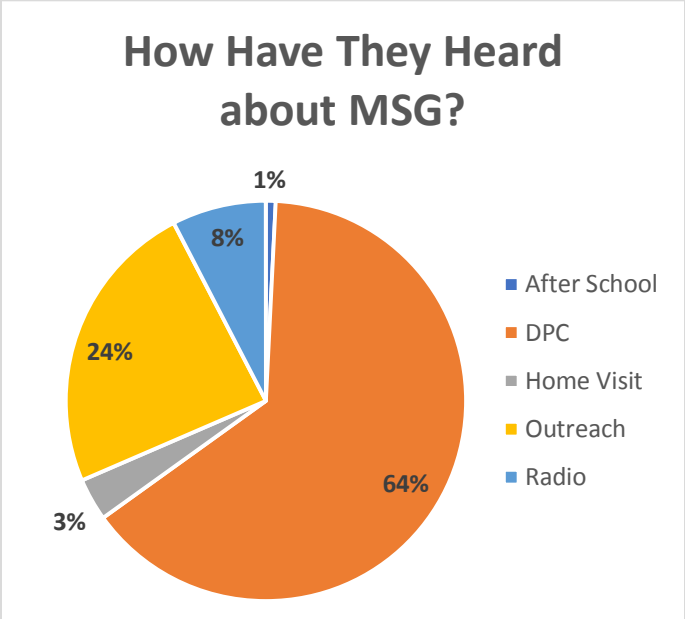


Figure 25: How DPC participants Have Heard about MSG



2. Have they participated in an MSG program?

Figure 26: DPC Visitor Participation in other MSG Programs

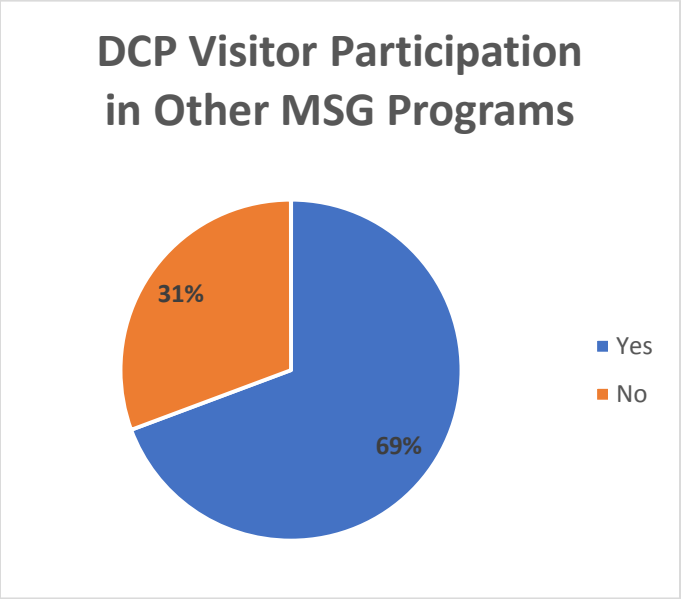
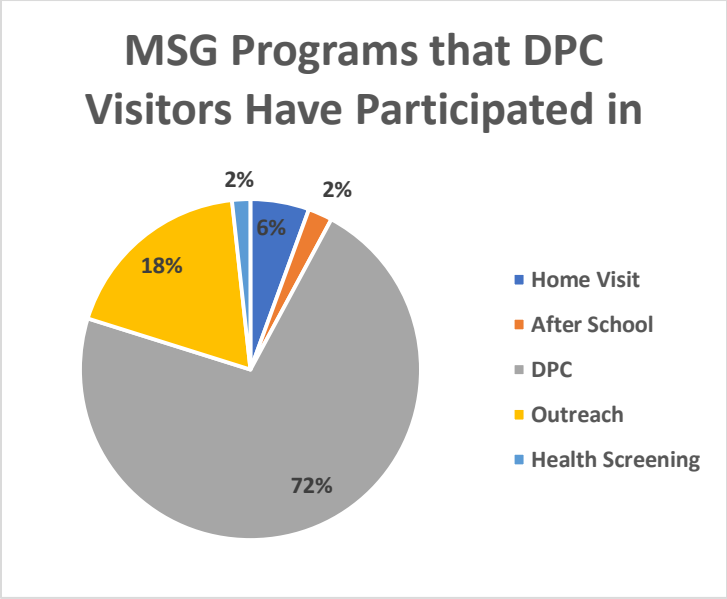


Figure 27: MSG Programs that DPC Visitors Have Participated in



3. Do they treat their water before they use it?

Figure 28: Do DPC Participants Treat their Water before They Use It?

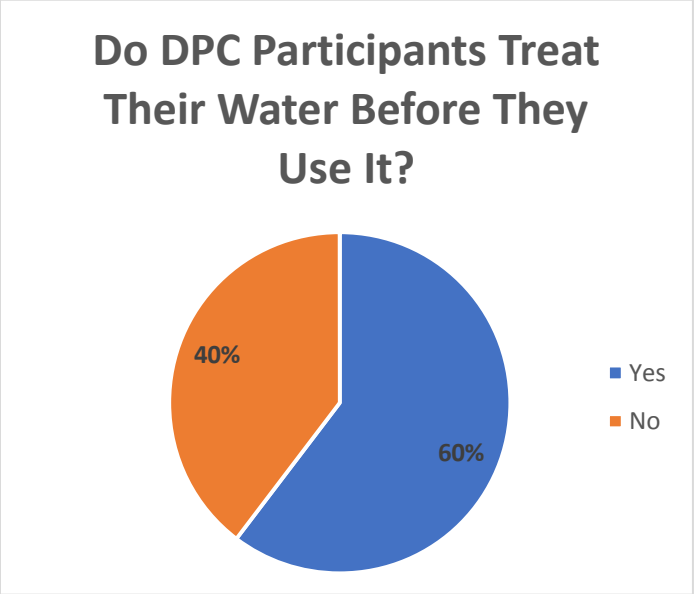
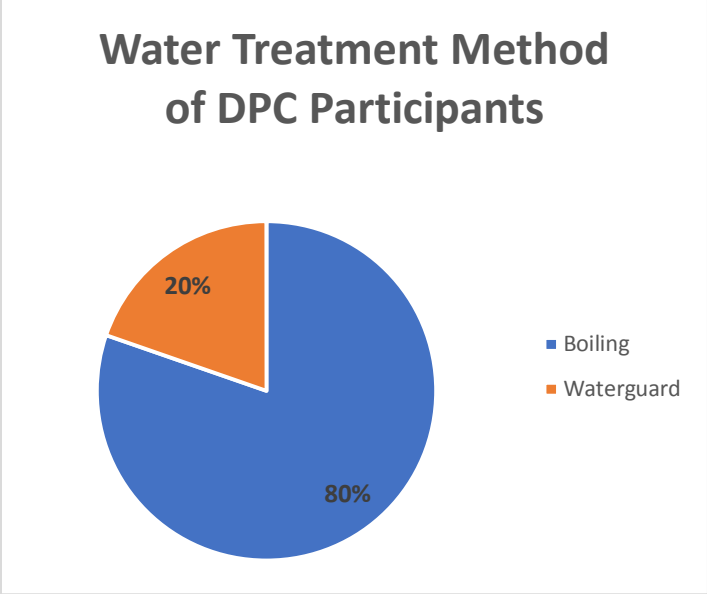
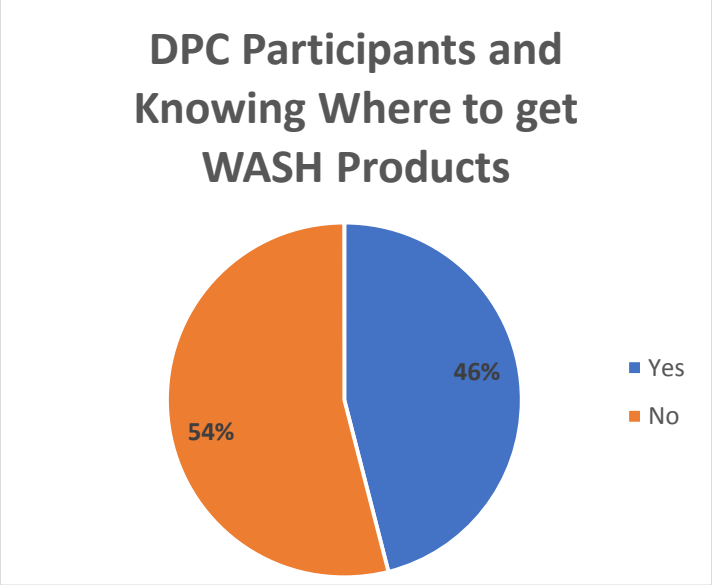


Figure 29: Water Treatment Methods of DPC Participants



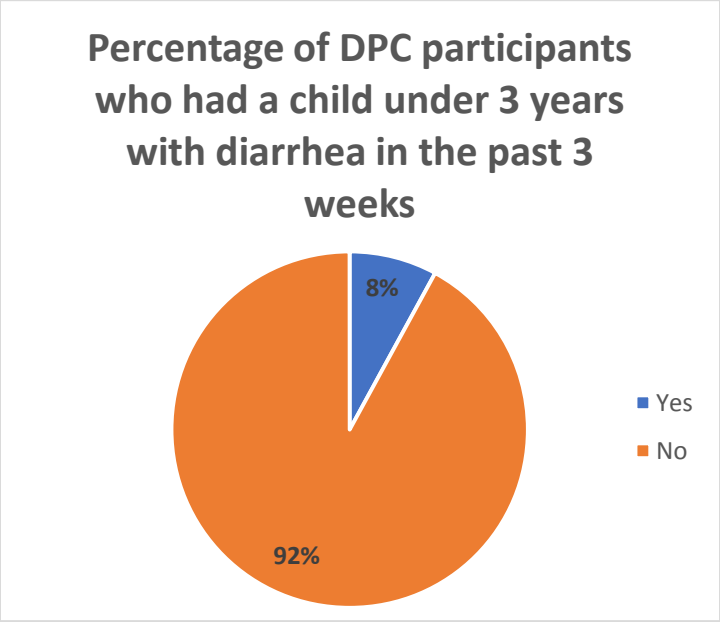
4. Do they know where to get WASH-related products?

Figure 30: DPC Participants and Knowing Where to Get WASH Products



5. Do they have someone living with them under the age of three who had diarrhea in the past two weeks?

Figure 31: Percentage of DPC participants who had a child under 3 years with diarrhea in the past two weeks



DPC Discussion

In 2019, the DPC Program was a success. Seventy-four percent of DPC participants were familiar with MSG (Figure 24), and 69% had participated in MSG programs (Figure 26). DPC participants were most likely to have participated in MSG's Outreach Program (18%) and Home Visit Program (5%) (Figure 27). It is also important to note that 70% of DPC participants had previously participated in the DPC Program (Figure 27). More than half of the participants reported treating their water before using it (Figure 28) with 80% reporting boiling as their water treatment method (Figure 29). More than half (54%) of DPC participants did not know where to get WASH products, such as chlorine tablets, buckets with lids and taps, and ceramic water filters (Figure 30). All participants were informed that these products are available for purchase from the MSG office, and chlorine tablets are available for purchase at the DPC on days MSG is on site. Figure 31 shows that eight percent of participants had a child under three years of age who had had diarrhea within the past two weeks. These participants received further education on how to ensure their water collection and storage methods were safe and free of contamination, how to practice proper handwashing techniques, and when to seek medical assistance to prevent dehydration.

Even though there are still individuals who do not treat their water, do not know where to buy WASH-related products, and have children under the age of three who have diarrhea, MSG program participants are much better informed and have healthier families than those who have never received MSG education. In 2019, MSG expanded this program by teaching at two new DPCs, and we began providing MSG educational booklets to Bukama Dispensary for their staff to distribute to patients and visitors. As we continue to expand to more health facilities, it will be interesting to compare the health of the participants at the different disease prevention centers. Each hospital and/or clinic reaches a different demographic group, and future data will help us see if our education is being used in all participating clinics, or educational changes need to be tailored to the specific clinics.

7. Hotline

The Hotline Program started in October 2013. This program is a way for the community to contact MSG through our hotline numbers to learn about water, sanitation, hygiene, disease prevention, and health. Additionally, it is a way for MSG to teach participants in hard-to-reach places. The hotline number is given to participants if they do not have time to talk in person during other programs such as Outreach, Disease Prevention Center, and radio shows. This program also aims to reach men in the community, as they often do not have time to talk during the Home Visit or Outreach Programs.

In 2019, we reached 305 people through 670 phone calls. Participants from several areas in Tanzania were called up to three times to receive WASH education (Figure 32). Most callers called from the nearby wards or wards that our Outreach Program had previously visited. WASH-related SMS messages were sent 635 times. In total, MSG gave out 1,305 WASH-related lessons in the form of a phone call or text message (Figure 32).

Figure 32: Frequency of Hotline Participants

Number of times reached	Number of times spoken to on phone	Number of times sent SMS
# 1st time	305	257
# 2nd time	208	215
# 3rd time	157	163
Total number of lessons	**670**	**635**

Figure 33: Hotline Participants' Gender

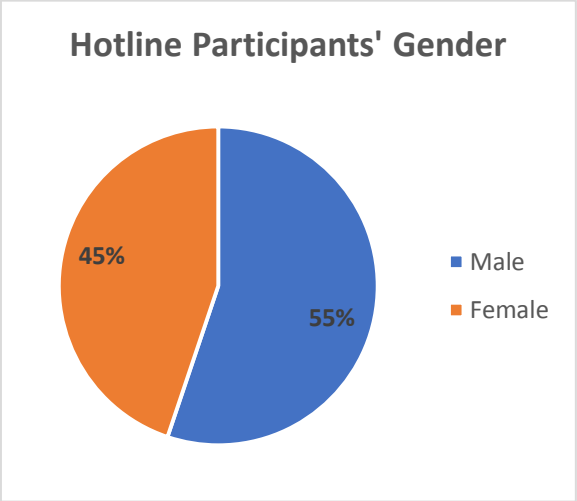
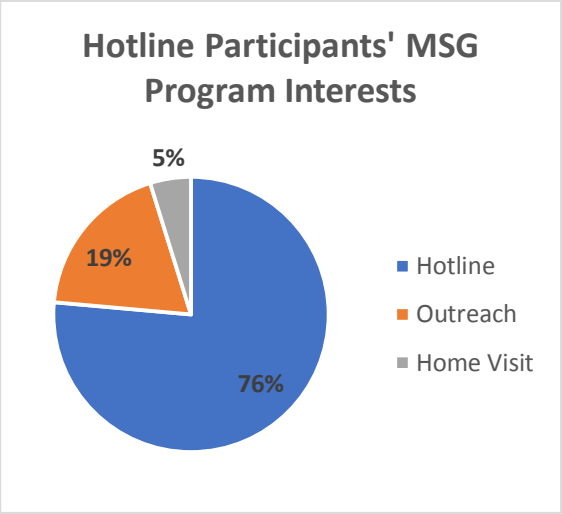


Figure 34: Hotline Participants' MSG Program Interests



Hotline Discussion

The MSG Hotline is a great option for those who live far away or have short WASH-related questions. In 2019, CHEs continued to implement a system initiated in 2018 in which program participants were called a total of three times and sent up to three SMS/text messages. Most Hotline Program participants were interested in learning more about the Hotline Program as they recognized that it was a convenient way to receive WASH education regardless of their location. They were also interested in the Outreach Program and Home Visit Program (Figure 34). Callers interested in the Home Visit Program were listed in a file to potentially be visited by a CHE later.

9. Outreach

There are many ways to teach WASH education to the community. Our Outreach Program started in 2012 with the goal of teaching the local community about WASH practices through a variety of local outreach methods, including event days and market outreach as well as visiting groups, shops, salons, and restaurants in the Mara Region. This program has developed over time to reach more community members and to respond to community crises, such as cholera outbreaks. Outreach continues to directly reach the most people and has the largest direct scope of all MSG programs. In 2019, our Outreach Program reached a total of 24,540 participants.

Market Days

Throughout the year, CHEs visit markets located in the Rorya District. Market days are either half or full days of work, depending on the size of the market and the location. Education topics include water treatment (e.g., boiling water, using chlorine tablets, etc.), the fecal-oral disease cycle, and preventing WASH-related diseases, such as cholera. The CHEs also use this time to sell chlorine tablets, oral rehydration solution, and various Menstrual Hygiene Management products. These products are sold at a subsidized price to make them more affordable to the community. On average, about 32 people received education during a market day. In total, we visited 50 market locations over 111 days, reaching approximately 3,589 people. Of the 61 locations visited, 12 were visited five or more times.

Salons and Shops

In 2019, MSG visited local salons and shops to teach local business owners how to protect their customers through practicing proper WASH techniques, how to keep their environment clean, and how to provide better customer service. Overall, CHEs taught 81 WASH lessons to store owners and 39 lessons to salon owners – for a total of 120 lessons. Forty-two establishments were taught once, and forty were taught twice. After each lesson, the CHEs ranked each store and salon with 4 being the highest level of understanding and 1 being the lowest. Later in the year, the CHEs visited the store and salon owners and tested them on their WASH knowledge.

Restaurants

Each year, MSG visits local restaurants. In 2019, CHEs taught 20 local restaurant owners predominantly in Busanga and Rwang'enyi (See Figure 35). Our CHEs evaluate local restaurants to gain a better understanding of their cleanliness and safety for their customers. If the restaurant managers want to participate, they receive MSG lessons on how to improve the environmental and food safety of their restaurant. Providing restaurant owners with WASH education empowers them to change their behaviors and provide a place that is safer and healthier for them and their customers. These restaurants we evaluated at the end of the year.

Most restaurant owners used water from Lake Victoria and from wells when cooking and cleaning, as well as for hand washing (Figure 36). All restaurant participants reported that they filtered drinking water, and the majority reported that they treated their drinking water through boiling (32%), chlorine (16%), SODIS (5%), boiling and chlorine (5%), or by other treatment methods (5%). A high number of restaurant participants washed their hands before food preparation (95%), before eating (90%), and after defecating (94%). All restaurants had a place for hand washing; however, only 85% treated their handwashing water, and 5% did not have soap at their handwashing stations. The MSG Community Health Educators assessing the restaurants reported that 21% of the restaurants were observed to have many flies. Thirty-five percent of restaurant participants reported keeping their food overnight, which is hazardous if not properly and hygienically stored. Additionally, all restaurants reported washing dishes with soap and water, and 10% did not have a latrine for their customers to use.

Figure 35: Locations of the Restaurants

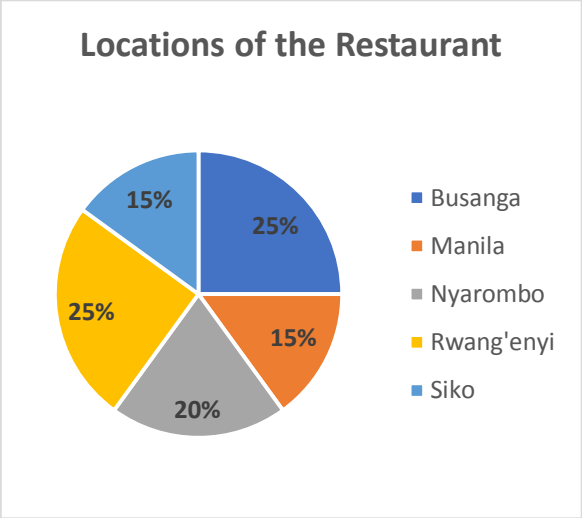


Figure 36: Restaurant Water Source

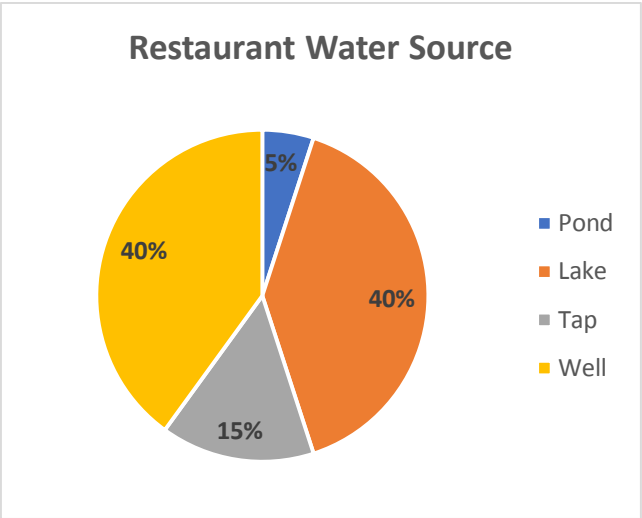


Figure 37: Overall Analysis of 2019 Restaurants

Question	Answer	Percentage
1. Do they filter their drinking water?	Yes	100%
	No	0%
2. How do they treat their drinking water?	No treatment	37%
	Boil	32%
	WaterGuard	16%
	SODIS	5%
	Boil and WaterGuard	5%
	Other	5%
4. When do they wash their hands?	Before food preparation	95%
	Before eating	90%
	After defecation	94%
	Do not wash hands	0%
5. Does their restaurant have a place for hand washing?	Yes	100%
	No	0%
6. Do they treat their hand-washing water	Yes	85%
	No	15%
7. Do they have soap at their hand-washing station	Yes	95%
	No	5%
8. Are there many flies in the restaurant?*	Yes	21%
	No	79%
9. Do they keep their food overnight?	Yes	35%
	No	65%
10. Do they wash dishes with soap and water?	Yes	100%
	No	0%
11. Does their restaurant have a latrine?	Yes	90%
	No	10%

**This assessment is subjective, as it is based on observations by the CHEs.*

Event Days

Every year, MSG hosts community-wide events that are sometimes organized in cooperation with the government or other organizations. These events are a way to reach out to the community to teach about WASH-related issues that affect the community members' everyday lives. In 2019, MSG hosted five events not associated with other programs like Singing and Dance and Female Hygiene (these events are explained in their own program sections). These events directly reached 9,590 community members.

2019 Events

- Reached: 20,889 people
- World Water Week: MSG partnered with other organizations throughout Tanzania to educate about WASH at the national celebration in Dodoma. Our various education booklets were distributed to the 5,000 participants in attendance. MSG was also a representative of Tanzania Water and Sanitation Network (TAWASANET) at this week-long event as we are the Lake Zone Coordinator for TAWASANET.
- Nane Nane: MSG partnered with other organizations throughout Tanzania to educate about WASH through a week-long government-organized event in Simiyu to recognize and celebrate the contribution of the agricultural sector to Tanzania's economy. Our various education booklets were distributed to 7,000 participants during this event.
- Southern African Development Community (SADC): MSG partnered with other organizations throughout Tanzania and Southern African countries to educate about WASH during a week-long event in Dar es Salaam. MSG hosted an education booth presenting our work and promoting and selling various WASH and MHM products to those in attendance. MSG also represented the Tanzania MHM Coalition at this event. Our various education booklets were distributed to 7,000 participants in attendance.
- Menstrual Hygiene Management (MHM) Day: Maji Safi Group participated in the National MHM exhibition in Dodoma. **During this event, the organization participated in teaching seminars, spoke in panel discussions, and hosted a booth.** Our various education booklets were distributed to 6,000 participants in attendance. (This number of participants is counted under the Female Hygiene Program).
- Global Hand Washing Day (GHD): This was our sixth annual GHD event. MSG reached 1,563 in celebration of this international day. MSG taught students at Manyanyi Primary School, Ngasaro Primary School, and Ngasaro Secondary School in the morning and taught community members in the Kanga Center in the afternoon.
- World Toilet Day: MSG reached 326 community members in the Kabwana Center. Teaching focused on the different environmentally friendly WASH products available for purchase from MSG, such as SATO toilet pans and reusable MHM products.

Outreach Discussion

After MSG completed all the salon, shop, and restaurant visits, participants were tested on their WASH knowledge, and certificates were given to those establishments that received a passing score. These certificates are then displayed, so customers can see the sanitary and hygienic conditions of the establishment. Prior to testing, restaurant owners were taught WASH lessons one to three times. In 2019, MSG evaluated 51 salon, shop, and restaurant owners on their WASH knowledge and the cleanliness of their establishments. These participants came from the following villages in the Rorya District: Nyarombo, Rwang'enyi, Busanga, Manila, Siko. The average test score was 83% with the highest test score being 100%. In previous years, MSG honored those who performed exceptionally on their evaluations at an award ceremony in their communities, but in 2019 this event was not held due to funding constraints.

This year, MSG focused on expanding to new wards and villages to teach about WASH. Several days were committed to visiting markets and teaching store and restaurant owners. Through post-evaluation methods, we saw a high level of understanding among participants taught two or more times. By arming the community with disease prevention education, we saw communities become more prepared with good WASH practices to protect themselves and their communities. Additionally, MSG participated in multiple week-long government-organized events in honor of World Water Week, Nane Nane, MHM Day, and Southern African Development Community (SADC) in which we were able to reach thousands of participants by teaching them, distributing our educational handouts on WASH, and selling various WASH and MHM products.

10. Radio Show (Sachita FM)

MSG has a partnership with Rorya FM, the local radio station in Shirati. This partnership allows MSG to host one-hour shows that educate the community about the importance of WASH and Menstrual Hygiene Management. In 2019, Rorya FM experienced difficulties due to technical issues and halted their services, so MSG strengthened its relationship with a second radio show, Sachita FM, located in the nearby Tarime District. This radio station estimates that each show reaches approximately 6,400 listeners. Each show was recorded and subsequently repeated later during the week. In 2019, MSG aired 29 shows: 11 shows were WASH related-lessons, and 18 shows were female hygiene lessons. The lessons indirectly reached approximately 371,200 people (including repeat listeners), nearly 200,000 more listeners than in 2018. Figure 38 details the breakdown of lessons taught during each show.

Each show provides the community with the opportunity to call in or send an SMS/text message to ask questions and/or make comments for our CHEs to answer. Throughout the year, MSG had 158 callers and 753 people who sent SMS/text messages that were answered directly by the CHEs. The average number of callers per show was five, and the average number of messages sent per show was 26.

Figure 38: Sachita FM Shows in 2019

Date	Program	Number of Estimated Listeners	Topic	Number of Callers	Number of SMS/Texts
1/18/2019	Female Hygiene	6,400	Menstrual Hygiene Management	4	35
1/22/2019	Outreach	6,400	Amoebiasis and Intestinal Worms	10	11
1/25/2019	Outreach	6,400	Implications of open defecation and water sources	1	40
1/29/2019	Female Hygiene	6,400	Menstrual Hygiene Management and cleanliness	4	57
2/1/2019	Outreach	6,400	Typhoid	1	65
2/5/2019	Female Hygiene	6,400	Implications of early pregnancy	5	15
2/12/2019	Outreach	6,400	Gender equality and the right to an education	13	21
2/15/2019	Outreach	6,400	Diarrhea	3	10
2/19/2019	Female Hygiene	6,400	Social behavior issues related to puberty	11	25
2/26/2019	Outreach	6,400	Cholera	5	15
3/5/2019	Female Hygiene	6,400	Building stronger relationships between parents and teenagers	7	45
3/8/2019	Outreach	6,400	Urinary Tract Infections and Fungus	11	17
3/12/2019	Outreach	6,400	Water-related diseases	8	68
3/15/2019	Female Hygiene	6,400	Gender equality within the household	5	10
3/20/2019	Female Hygiene	6,400	Menstrual Hygiene Management	0	5
3/22/2019	Outreach	6,400	Water treatment methods	1	35
6/14/2019	Female Hygiene	6,400	Breaking the silence on Menstrual Hygiene Management	9	16
6/21/2019	Female Hygiene	6,400	Pubertal changes and menstruation	10	59
6/28/2019	Female Hygiene	6,400	Menstrual Hygiene Management	10	11
7/5/2019	Female Hygiene	6,400	Menstrual Hygiene Management products	0	0
7/12/2019	Female Hygiene	6,400	Menstrual Hygiene Management	9	40
7/16/2019	Female Hygiene	6,400	Implications of early pregnancy	7	31
7/23/2019	Female Hygiene	6,400	Menstrual Hygiene Management	0	15
8/2/2019	Female Hygiene	6,400	Building stronger relationships between parents and teenagers	5	17
8/6/2019	Female Hygiene	6,400	Gender equality and the right to an education	9	30
8/9/2019	Singing and Dance	6,400	Singing and Dance program; Handwashing	0	0
8/16/2019	Singing and Dance	6,400	Singing and Dance program; water-related diseases	1	6
8/23/2019	Female Hygiene	6,400	Menstrual Hygiene Management	0	8
8/27/2019	Female Hygiene	6,400	Building stronger relationships between parents and teenagers	9	46
Total Listeners		**185,600**		**158**	**753**
Total Listeners including repeat show		**371,200**			

****Each show was repeated once during the same week.*

Radio Show Discussion

As the Radio Program continues to grow, the community continues to receive lessons and be exposed to important education. This year, MSG focused on strengthening our relationship with Sachita FM as Rorya FM halted their services. This was beneficial as Sachita FM reaches even more listeners per show than Rorya FM. Therefore, we were able to double our listenership from the previous year while hosting fewer radio shows than in 2018. Radio shows were aired in the mornings instead of the afternoons, as many households listen to the radio while performing morning chores and tend to call the radio station with questions or send SMS messages more frequently in the morning than during other times of the day.

12. Female Hygiene Program

MSG started its Female Hygiene Program in November 2013 as a safe place for young women, 11-18 years old, to learn about Menstrual Hygiene Management (MHM), gain access to female WASH materials like sanitary pads, and be encouraged to stay in school. The overall objective of this program is to reduce school absences/dropouts related to menstruation by educating girls and young women about MHM and supporting them in their studies. The MSG Female Hygiene lessons were created through participatory methods in collaboration with Marni Sommer's *Grow and Know* curriculum, which was developed specifically for teaching MHM in Tanzania. Lessons equip participants with female health and hygiene knowledge to decrease their absences from school during menstruation and empower them to become community leaders.

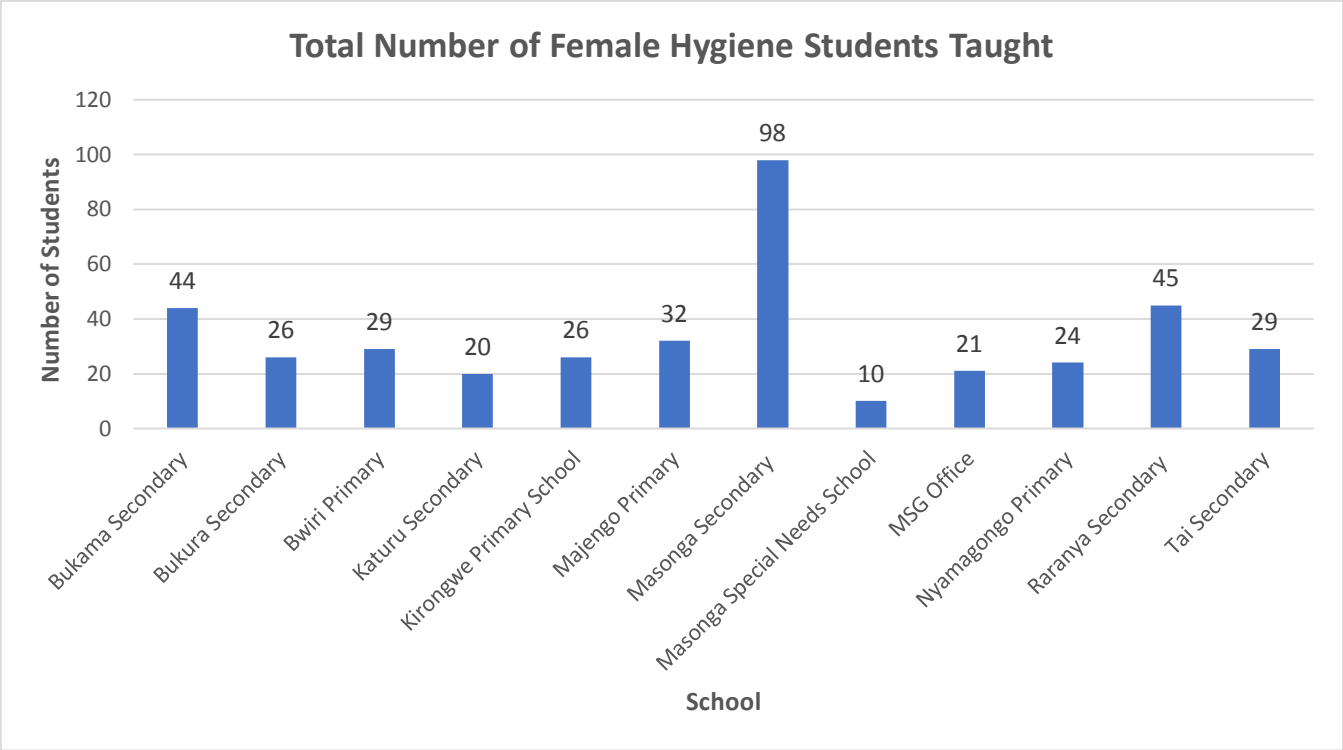
This program increased significantly in 2016 with the help of a grant from INTERTEAM, the City of Zurich, and the City of Basel. Additionally, MSG received funding from Dining for Women (DFW) to expand the Female Hygiene Program in 2019 and 2020. The first year of receiving funding from DFW was successful as we worked towards reaching our overall program objectives. Throughout 2019, the Female Hygiene Program worked in six wards in 11 schools (Bukama, Bukura, Katuru, Tai, Masonga, and Raranya secondary schools; Bwiri, Kirongwe, Majengo, and Nyamagongo primary schools; and Masonga Special Needs School) and at the MSG Office (Figure 39). New schools that MSG expanded to include Masonga and Bukama secondary schools and Bwiri primary school. Female Hygiene Health Clubs were formed in all 11 schools except in Masonga Secondary School, where 98 first- and second-year students were taught. A health club will be formed there in 2020 with a selection of these students.

To reduce school absences and build self-confidence related to menstruation, MSG's Female Hygiene Program expanded its reach to primary and secondary school students in six wards throughout the Mara Region. This expansion was made possible by the funds received from Dining for Women to support our Female Hygiene Program and impact the lives of girls and women. MSG was able to teach 525 girls about MHM, so they would have the knowledge, confidence, and menstrual supplies to continue attending school even while menstruating. Five hundred and twenty-five girls received education and mentoring weekly throughout the year, an educational booklet with information about puberty, and their choice of a reusable menstrual product – either a menstrual cup or a kit with reusable menstrual pads. School Health Clubs were concurrently established at two additional schools.

MSG spread awareness about MHM to reduce the stigma surrounding menstruation through hosting radio shows, painting MHM-related educational murals, and hosting public educational events aimed at engaging the community. Raising awareness about the use of menstrual cups was a highlight of spreading awareness about MHM. MSG increased the frequency and reach of female hygiene radio shows by airing 18 radio shows, reaching a total of 115,200 listeners. Two murals with MHM content were painted on primary and secondary school walls visible to students and community members. These murals are used as educational tools and continue to spread awareness and reduce associated stigma about MHM.

To provide sustainable long-term access to female WASH products, MSG incorporated menstrual cups into our Female Hygiene Program to give participants more sustainable and cost-effective options for MHM. We showcased menstrual cups in our curriculum, health clubs, educational murals, radio shows, and live events throughout the year. The students in our Female Hygiene Program had already been exposed to learning about new menstrual products, such as menstrual cups and reusable menstrual pads, but with funding from DFW, MSG was able to offer interested students a supply of the product they wanted to use. The first step in accomplishing this was having our Community Health Educators host information sessions with students and their guardians. When parents and teachers receive the same education about the benefits and challenges of menstrual cups as the students, they are more likely to support and encourage their girls to use their menstrual cups. When parents or teachers do not receive this same education, they can easily influence girls to not use them. Reusable menstrual products, such as menstrual cups and washable pads were discussed, and all questions were answered. Students who were interested in using either product received their product of choice. Those students will participate in focus-group discussions throughout the school year facilitated by MSG's Community Health Educators and complete an assessment survey at the end of the DFW funding period to learn more about their experiences, the challenges, and the benefits they encountered while using the products. During this reporting period, 525 girls received their choice of either a menstrual cup or a kit with reusable menstrual pads.

Figure 39: Number of Female Hygiene Program Participants per School



Female Hygiene Program Events

Throughout the year, the Female Hygiene Program hosts fun, educational community awareness events. In 2019, the Female Hygiene Program hosted five types of events, reaching over 7,558 people: A Female Hygiene Health Club opening event, Dining for Female Hygiene, MHM seminar, International MHM Day, and a Miss/Mr. Maji Safi contest. Community members were invited to attend these events to learn about female hygiene and health issues through songs, dances, and skits.

- Opening Kirongwe Primary Health Club: Reached 55 students, teachers, and parents at opening event. School was presented with the Health Club package, including disposable menstrual pads for emergency stock for the school, hand-washing buckets, hand-washing bucket stands, water-storage buckets, soap, and WaterGuard tablets.

- Dining for Female Hygiene: As part of the MSG tradition, the CHEs and program participants organized Dining for Female Hygiene events by hosting special dinners for participants and their female guardians (mothers, grandmothers, aunts) twice during the year. During the events, female health and hygiene issues were discussed, new members were welcomed, and through songs, dances, and skits, the young women showcased what they had learned. This event reached 300 people through two events (170 and 130 respectively).

- MHM Seminar: In April, MSG hosted a weeklong seminar held by Tanzanian Menstrual Hygiene Management (MHM) National Trainers from the Ministry of Health and Ministry of Education. Many community stakeholders participated, including government officials, schoolteachers, and other partners, to learn about different aspects of MHM and how to teach MHM in schools and to community members. This was a very successful and popular seminar as all attendees returned to their communities equipped with the knowledge and skills necessary to educate others about MHM and other topics related to female hygiene. Sixty participants were in attendance.

- Menstrual Hygiene Management Day: MSG's Executive Director and Director of Operations attended the national celebration of MHM Day in Dodoma as a member of the TZ MHM Coalition. MSG handouts were distributed to 6,000 people in attendance during the day as they visited our booth and other daily celebrations.

- Miss/Mr. Maji Safi: As has become the MSG tradition, the Female Hygiene Program partnered with the Male Hygiene Program to conduct the annual Miss/Mr. Maji Safi event. The girls and boys from our Female and Male Hygiene Programs participated in this knowledge and confidence competition in front of 1,143 community members. It was a very successful event that allowed 50 girls and boys to perform and compete in front of their peers and parents.

Female Hygiene Health Screening Results

Health screening results for the Female Hygiene Program participants indicate that when comparing all WASH-related diseases, program participants continue to have lower disease prevalence rates than community members without MSG education (See Figure 40).

Figure 40: Disease Rates among MSG Program Participants

Health Screening Rates	Number screened	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria
Overall percentage of health screening participants who tested positive	8299	9%	31%	15%	18%	29%
Female Hygiene Program Participants who tested positive (2019)	88	2%	0%	2%	2%	19%
Female Hygiene Program Participants who tested positive (2018)	753	4%	7%	4%	6%	11%
Female Hygiene Program Participants who tested positive (2017)	459	6%	8%	7%	5%	-
Non-Program Participants who tested positive (2019)	4,356	13%	50%	23%	29%	40%

Female Hygiene Discussion

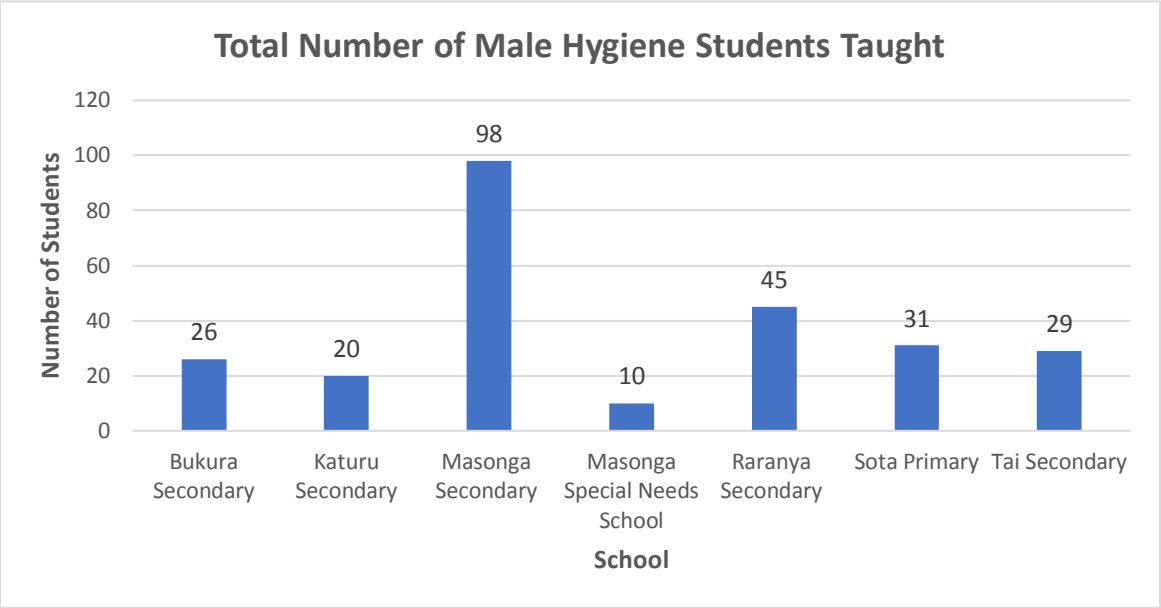
The Female Hygiene Program continues to grow and be one of our most popular programs. In 2019, we expanded significantly, especially by forming Health Clubs at schools, which is a more sustainable method of reaching more schools and allowing teachers, students, and parents to take a lead in educating their pupils about female hygiene issues. In response to a suggestion from 2017, classroom sizes were significantly reduced to ensure that the students were retaining the education by learning in a more student-friendly environment that includes smaller classroom sizes and better student-to-teacher ratios to foster effective learning (similar to the After School and Male Hygiene Programs). Success of this initiative is also seen in the low disease prevalence rates of Female Hygiene Program participants compared to non-program participants. Similar to the After School Program, fewer students are now directly taught by the MSG staff through the formation of Health Clubs, but it is evident that the members of the Female Hygiene Health Clubs were successful in continuing to teach the rest of their schoolmates about water-related disease prevention and health education. This resulted in students having lower disease prevalence rates than students at schools in which MSG had not yet taught. These results are similar to the Health Screening results from previous years.

13. Male Hygiene Program

The Male Hygiene Program started in 2016 because the community and our CHEs expressed an interest in starting a counterpart program to the already active and highly popular Female Hygiene Program. After the piloted year proved to be a success, MSG officially added this program to the budget in 2017. This program provides young men and boys with education about male and female anatomy, puberty, changes in their bodies, personal hygiene, respect for women, and the importance of breaking the silence about menstruation. By involving both genders in the conversation, Male Hygiene Program participants are now becoming more aware and knowledgeable about menstrual hygiene management and female and male hygiene issues. As the young boys become men, they are able to support female peers and family members.

In 2019, the Male Hygiene Program operated at seven schools (Bukura Secondary School, Katuru Secondary School, Masonga Secondary School, Masonga Special Needs School, Raranya Secondary School, Sota Primary School, and Tai Secondary School). Overall, the Male Hygiene Program directly taught 259 students through the formation of School Health Clubs. Some of these clubs were in collaboration with the Female Hygiene Program. Members of these Health Clubs were then responsible for passing on the education to the rest of their schoolmates (see Figure 41). This year, the Male Hygiene Program expanded to Masonga and Raranya Secondary Schools. At Raranya Secondary School, the program was transformed into a health club, and at Masonga Secondary School it will be transformed into a health club in 2020.

Figure 41: Number of Male Hygiene Program Participants per School



This year, the Male Hygiene Program participated in three events: Opening Sarungi Secondary Health Club, Dining for Male Hygiene, and Miss/Mr. Maji Safi. The Sarungi Secondary School health club reached 50 students, teachers, and parents at the opening event. The school was presented with the Health Club package, including disposable menstrual pads for emergency stock for the school, hand-washing buckets, hand-washing bucket stands, water-storage buckets, soap, and WaterGuard tablets; however, the school later requested that MSG not continue teaching at the school. The Dining for Male Hygiene event taught 121 program participants and their guardians more about the lessons they are learning in this program. The Miss/Mr. Maji Safi event attracted 1,236 community members (some of whom were included in the overall number of program participants reached through the Female Hygiene Program).

Male Hygiene Health Screening Results

According to Figure 42, Male Hygiene Program participants are healthier than people who do not participate in MSG's education. WASH-related disease prevalence rates were significantly lower for participants than for community members without MSG education.

Figure 42: Disease Rates among Male Hygiene Program Participants

Health Screening Rates	Number screened	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria
Overall percentage of health screening participants who tested positive	8,299	9%	31%	15%	18%	29%
Male Hygiene Program Participants who tested positive (2019)	173	2%	3%	1%	2%	11%
Male Hygiene Program Participants who tested positive (2018)	305	3%	10%	7%	6%	10%
Male Hygiene Program Participants who tested positive (2017)	164	9%	4%	1%	8%	-
Non-Program Participants who tested positive (2019)	4,356	13%	50%	23%	29%	40%

Male Hygiene Discussion

As the Male Hygiene Program continues to expand, it is important that the program continues to provide quality education to young boys. This program continues to be of great interest to the community and has already proven to be successful. In 2019, like in the After School and Female Hygiene Programs, there was an increase in School Health Clubs formed as a more sustainable way of teaching students to ensure greater knowledge retention of Male Hygiene topics. Male Hygiene is one of our newest programs, but it has already become evident that Male Hygiene Program participants are healthier and contract water-related diseases less frequently than those not participating in our programs (Figure 42).

14. Toilet Project

Through our Learning Tools Program, Maji Safi Group is now addressing open defecation, which is still a serious issue in rural areas of Tanzania, and we are piloting and implementing toilet projects that are affordable to the communities where we work. The implementation of our toilet project started in 2018 when we piloted Arborloo toilets in the Rorya District. The overall goals of the toilet project are to help stop open defecation, encourage tree planting, and promote WASH education in schools. Since 2018, 16 Arborloo toilets have been built at six different schools. Three toilets were built at each of the following schools: Michire Primary, Sota Primary, Shirati Primary Tai Secondary, and Katuru Secondary. At each school, one toilet was designated for boys, one for girls, and one for teachers. Maji Safi Group was able to build four Arborloo toilets at the Masonga Special Needs School. In 2018 and 2019, approximately 7,960 people from schools and rural communities in the Rorya District used Arborloo toilets.

15. Water Project

Based on thorough needs assessments conducted by MGS in the Rorya District, Maji Safi Group opened its first water project in the Shirati community in June 2019. Providing clean water from a solar-powered borehole addresses the issue of the vast majority of households collecting water from unprotected and therefore highly contaminated water sources. During the last six months of 2019, we were able to serve 5,600 residents with clean and safe water. We sell water at the water point and connect individual households to the system.

16. Health Screening Program

Maji Safi Group (MSG) provides comprehensive water, sanitation, and hygiene (WASH) education and programming to rural, underserved individuals and families in Shirati, Tanzania. MSG's model for promoting community-driven water, sanitation, and hygiene (WASH) education and disease prevention focuses on behavioral change; however, measuring such changes in the community is a challenge. In 2019, Maji Safi Group (MSG) conducted its fifth annual health screening campaign to test and treat MSG's current and potential program participants for schistosomiasis, amoebiasis, intestinal worms, malaria, and ringworms. The purpose of our annual Health Screening Program is to alleviate the burden of the diseases, while also gathering data to establish a longitudinal study on disease prevalence rates in the Rorya District. Since 2015, MSG has been able to provide this health screening service to 26,501 Rorya District community members.

In 2019, MSG tested a group of 8,299 people comprised of community members with no MSG education and community members who were current or past program participants. For the fifth year in a row, disease rates revealed that MSG program participants who have been exposed to MSG's education have lower disease rates for schistosomiasis, amoebiasis, intestinal worms, malaria, and ringworm than non-program participants with no exposure to MSG programs. Additionally, overall disease rates continue to decrease in the communities where we are teaching or have taught, indicating that the communities are getting healthier. However, this was the first year we tested for ringworm.

2015 Health Screenings Summary

The first health screening campaign, conducted in 2015, was a means of detecting and treating WASH-related diseases in the different stages of MSG's WASH-education intervention. During the pilot year, we found that many students and participants were sick – 81 percent of those screened tested positive for one or more water-related diseases. We believe that a high prevalence of positive UTI tests partially influenced these high disease rates. MSG tested and educated 3,060 community members (including approximately 900 program participants) and treated 5,604 cases of water-related diseases. The screenings provided participants with an understanding of their WASH health situation, treatment if needed, and education to prevent future WASH-related diseases. Additionally, following the World Health Organization and the Tanzanian Ministry of Health's guidelines, all health screening participants received treatment for intestinal worms regardless of whether they tested positive or not. This mass treatment was conducted because the Rorya District is endemic for intestinal worms. Figure 43 shows the disease rates for each water-related disease we tested for.

Figure 43: 2015 Health Screening Disease rates

2015 Health Screening Rates	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	UTIs
Overall percentage of health screening participants who tested positive	20%	18%	2%	31%	70%
New MSG Program participants who tested positive	28%	12%	17%	4%	66%
MSG Program participants who tested positive	18%	16%	4%	14%	16%
Non-MSG Program participants who tested positive	22%	30%	3%	16%	30%

2016 Health Screening Summary

In 2016, Maji Safi Group (MSG) conducted its second annual health screening campaign, testing 5,060 people. The participant sample included MSG program participants, their guardians, local community members, students, and fishermen as a means of evaluating the effectiveness of our programs and the overall health situation in the Rorya District. MSG screened for malaria, schistosomiasis, amoebiasis, intestinal worms and urinary tract infections (UTIs). Overall, disease rates showed that MSG program participants who have been exposed to MSG education typically have a lower WASH-related disease prevalence rate (i.e., schistosomiasis, amoebiasis, and intestinal worms) than non-program participants with no exposure to MSG programs. Data also suggested that MSG should reevaluate its education about UTIs and add malaria lessons to its education. Figure 44 indicates the disease rates for each water-related disease we tested for.

Figure 44: 2016 Health Screening Disease Rates

2016 Health Screening Rates	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	UTIs	Malaria
Overall percentage of health screening participants who tested positive	14%	24%	7%	13%	51%	22%
Percentage of current participants who tested positive	10%	9%	5%	8%	53%	23%
Percentage of past participants who tested positive	9%	9%	5%	6%	49%	16%
Percentage of family members of program participants who tested positive	11%	14%	3%	7%	53%	21%
Percentage of staff members who tested positive	12%	6%	0%	3%	53%	11%
Percentage of community members who tested positive	18%	41%	10%	21%	49%	23%

2017 Health Screening Summary

In 2017, MSG screened and treated 3,071 program and non-program participants. However, five forms were missing from the final count, so analysis was only conducted for 3,066 participants. The participant sample included MSG program participants, their guardians, non-program participants, and secondary school students. Primary school students were not screened this year due to a concurrent mass treatment campaign implemented by the Tanzanian government at all primary schools. MSG chose not to screen and treat primary school students to avoid double treatment. It was found that 51% of the 2017 health screening participants tested positive for one or more water-related diseases. Compared to the 2015 and 2016 health screening results, this is a 4% and 5% decrease, respectively. When looking at program participants' disease rates in comparison to non-program participants, the results continued to indicate that those exposed to MSG's education typically had lower disease prevalence rates than those not yet exposed to MSG's education. Data also suggested that MSG should add malaria lessons to its education. Figure 45 indicates the disease rates for each water-related disease we tested for in 2017.

Figure 45: 2017 Health Screening Disease Rates

2017 Health Screening Rates	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria*
Overall percentage of health screening participants who tested positive	14%	38%	23%	12%	6%
Percentage of current program participants who tested positive	11%	12%	8%	6%	4%
Percentage of past program participants who tested positive	7%	12%	7%	8%	4%
Percentage of family members of program participants who tested positive	7%	5%	8%	4%	2%
Percentage of staff members who tested positive	13%	0%	4%	0%	7%
Percentage of non-program participants who tested positive	20%	74%	44%	20%	6%

**Note: Only selected community members and Singing and Dance participants and their family members were tested for malaria. Only 400 malaria tests were given.*

2018 Health Screening Summary

In 2018, the MSG Health Screening Program was once again very well received among participants and community members. Overall, MSG screened and treated 6,911 program and non-program participants. The screenings took place over 19 days between March 16, 2018 and April 27, 2018. On average, MSG screened and treated 364 people per day with a range of 144 to 559 participants per day. Of those tested, 49% were male, and 51% were female.

For the 2018 health screening campaign, MSG used the same health screening questionnaire that was used in 2016 and 2017 to ensure rates could be compared longitudinally. It was found that 54% of the 2018 health screening participants tested positive for one or more water-related diseases (amoebiasis, intestinal worms, schistosomiasis in stool, schistosomiasis in urine, and malaria). Compared to the 2015 health screening results, this is a 1% decrease in overall disease rates, but an increase in overall disease rates between 2017 and 2018. This was to be expected, as MSG expanded the Health Screening Campaign into new communities and schools that had not yet received any MSG education or intervention (i.e., participants in these new areas had not received MSG's WASH lessons prior to being screened).

When looking at program participants' disease rates in comparison to those of non-program participants, the results continually indicated that those exposed to MSG's education typically had a lower disease prevalence rate. Participant status was categorized in five ways: current program participant (involved in an MSG program within the year), past program participant (involved in an MSG program a year or longer ago), family member (a current or past program participant's family member), staff (an MSG staff member), and non-program participant (= community member in pie chart).

Figure 46: 2018 Health Screening Disease Rates

2018 Health Screening Rates	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria
Overall percentage of health screening participants who tested positive	9%	41%	26%	17%	28%
Percentage of current program participants who tested positive	4%	9%	7%	6%	14%
Percentage of past program participants who tested positive	4%	10%	5%	8%	14%
Percentage of family members of program participants who tested positive	8%	15%	13%	6%	14%
Percentage of staff members who tested positive	5%	14%	14%	6%	6%
Percentage of non-program participants who tested positive	13%	72%	44%	26%	42%

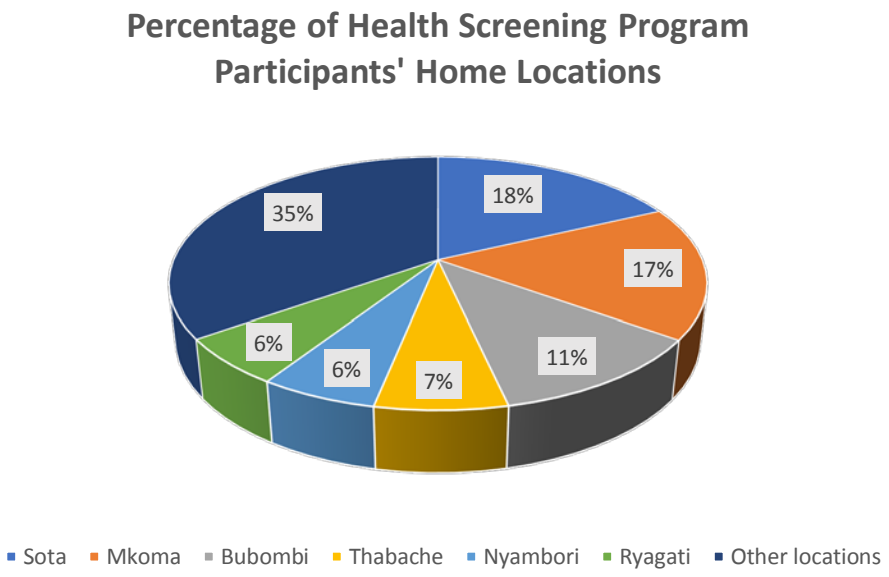
2019 Health Screening Results

2019 Demographics

In 2019, the MSG Health Screening Program was once again very well received among participants and community members. Overall, MSG screened and treated 8,299 program and non-program participants. The screenings took place over 18 days between April 11, 2019 and May 22, 2019. On average, MSG screened and treated 461 people per day.

In 2019, 50% of health screening participants were male, and 50% were female. The youngest person tested was two and half years old, and the oldest person tested was 95 years old. The screenings took place in several different locations: the MSG office, Tina's Education Center, Masonga Maalum, Sota Primary School, Majengo Primary School, Nyamagongo Primary School, Downhill Primary School, Shirati Primary School, Leaders Academy, Nyambori Primary School, Katuru Secondary School, Raranya Secondary School, Tai Secondary School, Bukura Secondary School, Masonga Secondary School, and the Ryagati, Nyambori, and Thabache communities. The majority of those screened came from the village of Sota (18%), Mkoma (17%), Bubombi (11%), Thabache (7%), Nyambori and Ryagati (6%), and other locations in the Mara Region (35%) as indicated in Figure 47.

Figure 47: Percentage Breakdown of Health Screening Program Participants' Home Locations



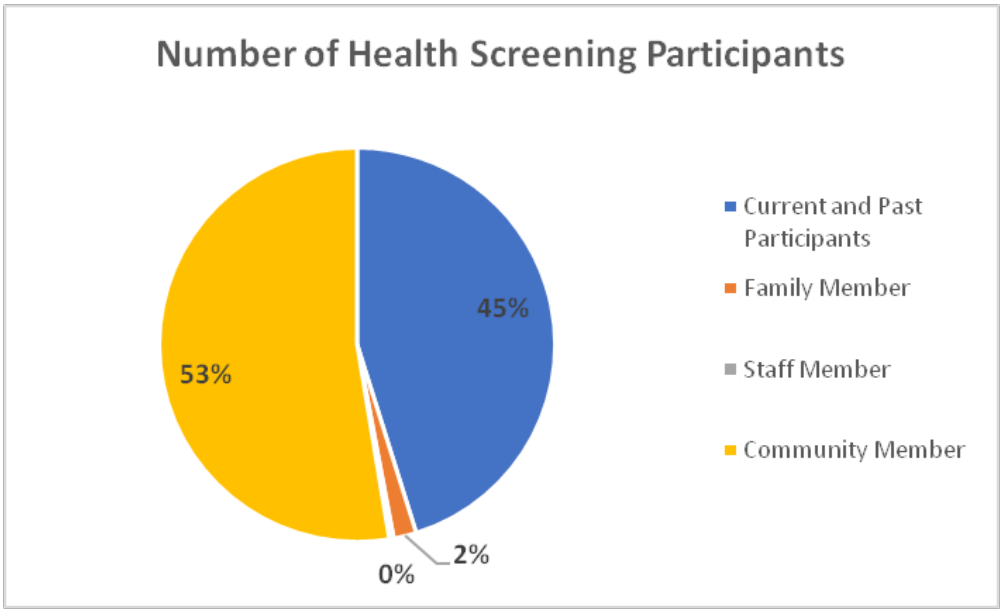
Overall 2019 Results

For the 2019 health screening campaign, MSG used the same health screening questionnaire that was used in 2016, 2017, and 2018 to ensure data could be compared longitudinally. It was found that 42% of the 2019 health screening participants tested positive for one or more water-related diseases (amoebiasis, intestinal worms, schistosomiasis in stool, schistosomiasis in urine, malaria, or ringworm). These results indicate a decline in overall disease rates for all five years of the health screening program: 55%, 56%, 51%, and 54% in 2015, 2016, 2017, and 2018, respectively. When looking at program participants' disease rates in comparison to those of non-program participants, the results continually indicate that those exposed to MSG's education on average have lower disease prevalence rates. Participant status was categorized in five ways: current program participant (involved in an MSG program within the year), past program participant (involved in an MSG program a year or longer ago), family member (a current or past program participant's family member), staff (MSG staff member), and non-program participant (labeled as community members in Figure 7). The breakdown of the health screenings participants' status is indicated in Figure 48 and Figure 49.

Figure 48: Health Screening Participant Status

Participant Status	Current and Past Participants	Family Member	Staff Member	Community Member	**Overall Total**
Number of Health Screening Participants	3,740	155	30	4,356	**8,281**

Figure 49: Percentage Breakdown of Type of Health Screening Participants



As indicated in Figure 50, there is a significant difference between disease rates among MSG program participants (current and past) and non-program participants. These percentages indicate that community members with no exposure to MSG programs or education have a higher percentage of amoebiasis (3%-8% higher), intestinal worms (31%-43% higher), schistosomiasis in stool (13%-19% higher), schistosomiasis in urine (15%-24% higher), malaria (20%-23% higher) and ringworm (1%-2% higher) than current and past MSG program participants, respectively.

These results lead us to believe that those who participate in Maji Safi Group's programs (currently or in the past) have a better understanding of WASH knowledge and can better prevent WASH-related diseases, such as amoebiasis, intestinal worms, schistosomiasis, malaria, and ringworm, than community members who have not had access to MSG education via programs.

The disease trends of those who have been exposed to MSG programs compared to those of non-program participants also hold for family members of MSG program participants and staff members. There are higher intestinal worm, schistosomiasis, and malaria rates among non-program participants than among family members of program participants and MSG staff. We believe that staff and family members have lower WASH-disease rates because they are exposed to MSG education. As Figure 50 indicates, exposure to MSG education has a significant impact on disease rates.

Figure 50: 2019 Health Screening Disease Rates

2019 Health Screening Rates	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria	Ringworm
Overall percentage of health screening participants who tested positive	9%	31%	15%	18%	29%	3%
Percentage of current participants who tested positive	10%	19%	10%	14%	20%	3%
Percentage of past participants who tested positive	5%	7%	4%	5%	17%	2%
Percentage of family members of program participants who tested positive	16%	22%	10%	13%	19%	7%
Percentage of staff members who tested positive	13%	13%	13%	3%	4%	0%
Percentage of community members who tested positive	13%	50%	23%	29%	40%	4%

We also assessed if the frequency of MSG lessons had an impact on disease rates. Therefore, we asked health screening participants how many times they had participated in a direct MSG WASH lesson. Categories to choose from included: never (they had never had a direct WASH lesson from MSG), 1-3 times (they had had 1-3 WASH lessons from MSG), 4 times (they had had four WASH lessons from MSG) and 5^{+} (they had had five or more WASH lessons from MSG). We chose these frequencies because in many programs we aim to give at least four lessons (i.e., Home Visit, Female Hygiene, Male Hygiene, Singing and Dance, Maji Safi Cup, and After School). Figure 51 and Figure 52 show the breakdown and percentages of the health screening participants who had received MSG's education. The figures also show that only a small number of participants had received four lessons compared to the other categories. This discrepancy is a result of participants not remembering the exact number of lessons that they had received, making them less likely to indicate having received four lessons. Figure 53 indicates that never having had an MSG lesson contributes to the highest disease rates.

Figure 51: 2019 Number of MSG Lessons Received by Health Screening Participants

Number of Lessons Received	No Lessons	1-3 Lessons	4 Lessons	5+ Lessons	Total
Number of Health Screening Participants	5.017	2.114	94	1,074	8,299

Figure 52: 2019 Percentage of MSG Lessons Received by Health Screening Participants

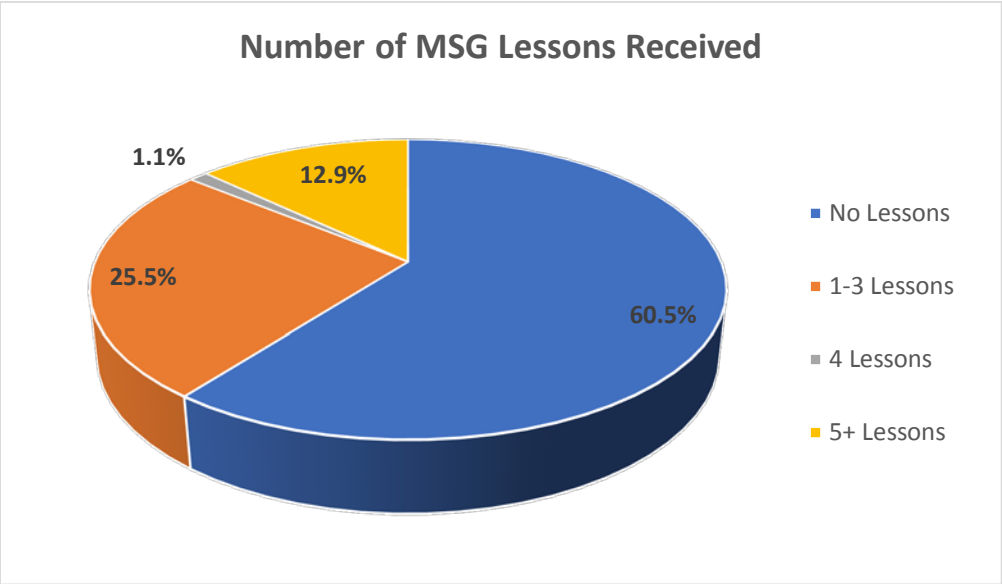


Figure 53: 2019 Health Screening Disease Rates as They Relate to Level of MSG Participation

2019 Health Screening Rates	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria	Ringworm
Overall percentage of health screening participants who tested positive	9%	31%	15%	18%	29%	3%
Percentage of health screening participants who received no MSG lessons and tested positive	10%	30%	14%	17%	29%	3%
Percentage of health screening participants who had received 1-3 MSG lessons and tested positive	9%	33%	15%	19%	30%	3%
Percentage of health screening participants who had received 4 MSG lessons and tested positive	16%	32%	23%	16%	23%	4%
Percentage of health screening participants who had received 5+ MSG lessons and tested positive	9%	29%	14%	17%	31%	2%

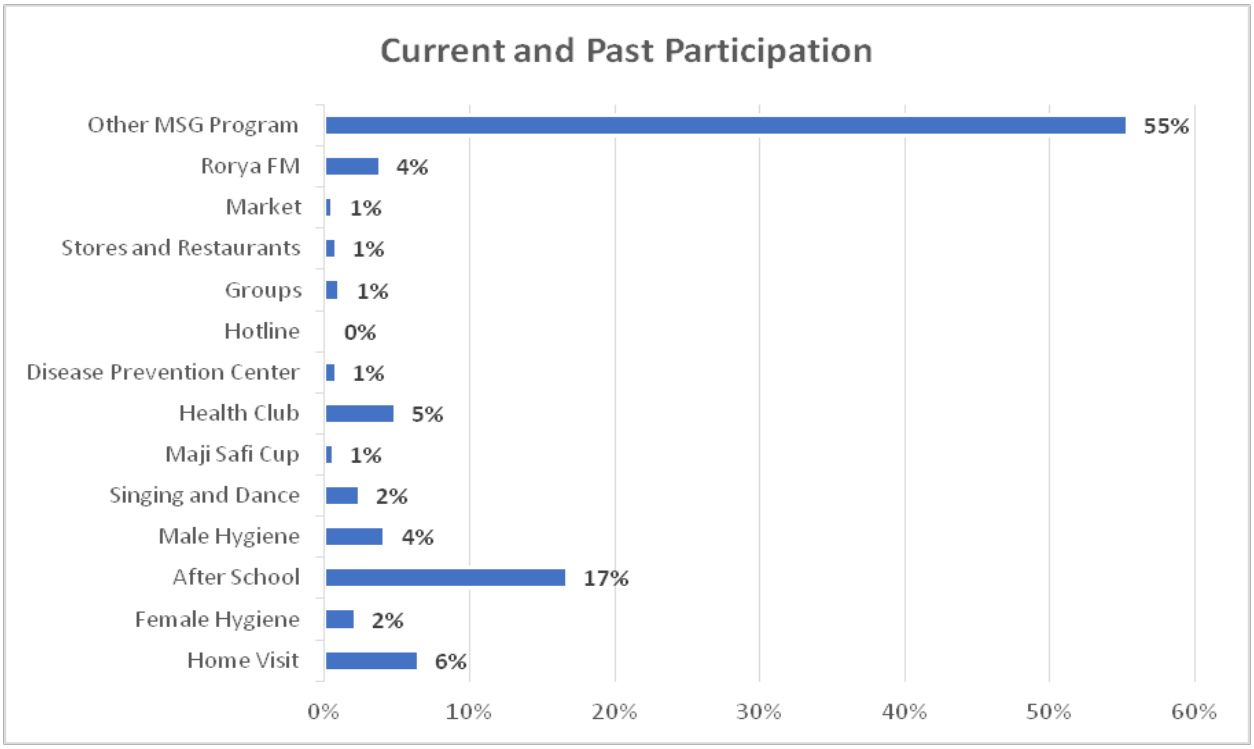
Maji Safi Group Program Disease Rates

In 2019, MSG tested 3,740 current and past program participants, who made up 45% of all those tested. MSG programs in which participants engaged included After School, Female Hygiene, Male Hygiene, Singing and Dance, Home Visit, Maji Safi Cup, Disease Prevention Center, Hotline, Outreach with groups, Outreach with stores and salons, Market outreach, Radio show, School Health Clubs, and Other, such as Emergency Outreach. The 3,740 participants were currently in more than one MSG program or had participated in a program in the past and were currently participating in another program. As indicated in Figure 54 and Figure 55, the program participants (past and current) came from our many programs: After School (17%), Home Visit (6%), Health Club (5%), Male Hygiene (4%), Rorya FM (4%), Female Hygiene (2%), Singing and Dance (2%), Maji Safi Cup (1%), Disease Prevention Center (1%), Groups (1%), Stores and Restaurant Outreach (1%), Market Outreach (1%), Hotline (0%) and Other MSG Programs (55%).

Figure 54: Number of Current and Past MSG Program Participants

Program	Number of Current and Past Participation	Percentage
Home Visit	269	6%
Female Hygiene	88	2%
After School	696	17%
Male Hygiene	173	4%
Singing and Dance	99	2%
Maji Safi Cup	26	1%
Health Club	203	5%
Disease Prevention Center	33	1%
Hotline	9	0%
Vikundi (Groups)	43	1%
Stores and Restaurants	34	1%
Market	23	1%
Rorya FM	159	4%
Other MSG Programs	2300	55%
Total	**4,155**	**100%**

Figure 55: Percentage of MSG Program Participation



According to Figure 56, nearly all MSG program participants had lower WASH disease prevalence rates than community members who had not had any exposure to MSG programs: amoebiasis (no infections - 13% lower), intestinal worms (36% - 50% lower), schistosomiasis in stool (10% - 23% lower), schistosomiasis in urine (23% - 29% lower), malaria (15% - 40% lower), and ringworm (no infections - 4% lower). Disease rates among program participants also varied. It should be noted that while the first column of Figure 51 indicates the number of non-program participants and individuals from each program that participated in the 2019 Health Screening Campaign, not all of these individuals were able to produce a urine, stool, or blood sample during the screening. Thus, the percentages in Figure 56 only include individuals who were able to produce the required sample for the test.

Figure 56: Disease Rates among MSG Program Participants

Health Screening Rates	Number screened	Amoebiasis	Intestinal Worms	Schistosomiasis in Stool	Schistosomiasis in Urine	Malaria	Ringworm
Overall percentage of health screening participants who tested positive	8,299	9%	31%	15%	18%	29%	3%
Home Visit	269	5%	9%	3%	6%	15%	0%
Female Hygiene	88	2%	0%	2%	2%	19%	1%
After School	696	5%	2%	4%	2%	16%	2%
Male Hygiene	173	2%	3%	1%	2%	11%	0%
Singing and Dance	99	4%	4%	3%	6%	5%	2%
Maji Safi Cup	26	0%	0%	8%	4%	25%	0%
Disease Prevention Centers	33	4%	4%	4%	3%	19%	0%
Hotline	9	13%	14%	0%	0%	11%	0%
Groups	43	4%	7%	4%	5%	16%	2%
Store and Restaurant Outreach	34	0%	8%	4%	3%	7%	0%
Market Outreach	23	0%	0%	13%	0%	0%	4%
Radio Show	159	7%	9%	5%	4%	18%	1%
Health Club	203	5%	2%	3%	2%	13%	2%
Other MSG Programs (health screenings, events, emergency outreach, etc.)	2,300	5%	8%	4%	6%	18%	2%
Non-Program Participants: Community Members	4,356	13%	50%	23%	29%	40%	4%

School Results

MSG was able to collaborate with 15 schools during the 2019 Health Screening Program. Figure 57 and Figure 58 show the number and percentage of students screened by school and class. Screening and treatment took place at five secondary schools and 10 primary schools. Some of these schools had previously participated in our Health Screening Campaign, but this was the first year for MSG to screen and treat at Downhill Primary School, Leaders Academy, Nyambori Primary School, and Masonga Secondary School.

Figure 57: Health Screening Participation at Schools

School Name	Number of Health Screening Participants	Percentage of School Participants in Overall Health Screening Campaign
Tina's Education Center	301	3.6%
Masonga Maalum	12	0.1%
Sota Primary	344	4.1%
Majengo Primary	304	3.7%
Nyamagongo Primary	160	1.9%
Downhill Primary	179	2.2%
Shirati Primary	239	2.9%
Leaders Academy	167	2.0%
Nyambori Primary	75	0.9%
Katuru Secondary	481	5.8%
Raranya Secondary	431	5.2%
Tai Secondary	757	9.1%
Bukura Secondary	439	5.3%
Masonga Secondary	372	4.5%
Thabache Primary	272	3.3%
Non-School Participants	3,766	45.4%
Total	8,299	100%

Figure 58: Chart of School Breakdown of Students and Adults

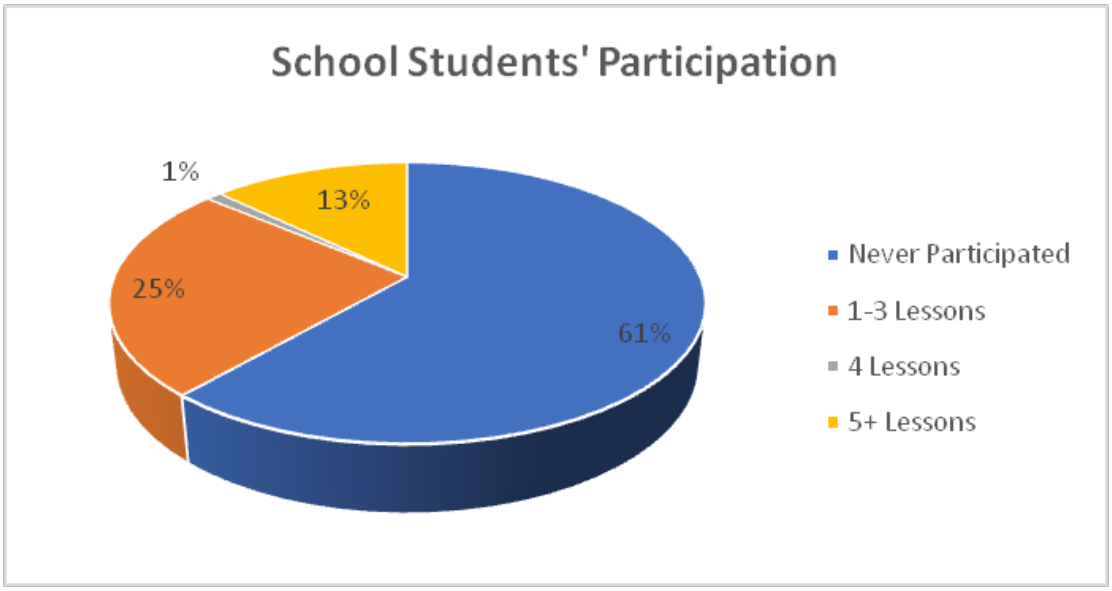
School Name	Pre-K	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Form 1	Form 2	Form 3	Form 4	Teacher	Parent	Overall Number Screened
Tina's Education Center	27	27	25	37	29	59	46	46	0	0	0	0	3	2	301
Masonga Maalum	5	1	0	3	3	0	0	0	0	0	0	0	0	0	12
Sota Primary	30	40	29	49	43	40	55	56	0	0	0	0	1	1	344
Majengo Primary	4	28	44	40	46	37	43	62	0	0	0	0	0	0	304
Nyamagongo Primary	0	0	0	0	0	55	42	61	0	0	0	0	2	0	160
Downhill Primary	32	18	24	13	22	35	17	14	0	0	0	0	3	1	179
Shirati Primary	0	0	0	0	4	87	51	96	0	0	0	0	0	1	239
Leaders Academy	8	45	45	37	28	0	0	0	0	0	0	0	4	0	167
Nyambori Primary	2	7	6	6	18	3	7	25	0	0	0	0	1	0	75
Katuru Secondary	0	0	0	0	0	0	0	0	159	134	108	79	1	0	481
Raranya Secondary	0	0	0	0	0	0	0	0	103	132	95	101	0	0	431
Tai Secondary	0	0	0	0	0	0	0	0	290	201	175	89	1	1	757
Bukura Secondary	0	1	0	0	0	0	0	0	163	132	83	52	8	0	439
Masonga Secondary	0	0	0	0	0	0	0	0	108	78	98	79	9	0	372
Thabache Primary	48	44	23	46	48	29	14	18	0	0	0	0	0	2	272
Total	156	211	196	231	241	345	275	378	823	677	559	400	33	8	4,533

When looking at the data from the MSG program participants, we also looked at MSG participation levels, broken up into four levels: non-program participants, have completed 1-3 lessons with MSG, have completed 4 lessons with MSG, and have completed 5 or more lessons with MSG. MSG has assigned class grades to teach during the After School, Male Hygiene, and Female Hygiene Programs; therefore, there are some class levels that have not received MSG education. Of those who were screened at a school, 61% (2,786 participants) participated in an MSG Program either as a past or current participant, and 39% (1,747 participants) have yet to receive MSG WASH education. Figure 59 and Figure 60 show a breakdown of the different schools, classes, and overall MSG participation level.

Figure 59: MSG Participant Status per School

School Name	# Never participated	# Participated in 1-3 lessons	# Participated in 4 lessons	# Participated in 5+ lessons
Tina's Education Center	136	79	8	78
Masonga Maalum	4	3	0	5
Sota Primary	233	75	2	34
Majengo Primary	209	69	1	25
Nyamagongo Primary	120	21	2	17
Downhill Primary	127	40	0	12
Shirati Primary	112	104	0	23
Leaders Academy	78	68	1	20
Nyambori Primary	43	15	1	16
Katuru Secondary	329	93	7	52
Raranya Secondary	226	143	7	55
Tai Secondary	517	158	9	73
Bukura Secondary	272	85	4	78
Masonga Secondary	203	103	1	65
Thabache Primary	177	64	2	29
Total	2,786	1,120	45	582

Figure 60: Percentage of MSG Participant Status in Participating Secondary Schools



School Demographics

The 2019 Health Screening Program also looked at the age and gender demographics of the school students MSG worked with. The results in Figure 61 show the gender breakdown from school to school, including that most schools had a higher percentage of males than females. These rates represent the gender differences typically found in rural schools in Tanzania.

Figure 61: School Participants' Average Age and Gender

School Name	Average Age	Percentage of Males	Percentage of Females
Tina's Education Center	12	45%	55%
Masonga Maalum	10	17%	83%
Sota Primary	11	51%	49%
Majengo Primary	11	54%	46%
Nyamagongo Primary	14	54%	46%
Downhill Primary	11	55%	45%
Shirati Primary	13	40%	60%
Leaders Academy	9	56%	44%
Nyambori Primary	12	51%	49%
Katuru Secondary	16	53%	47%
Raranya Secondary	17	61%	39%
Tai Secondary	16	53%	47%
Bukura Secondary	17	58%	42%
Masonga Secondary	17	59%	41%
Thabache Primary	10	47%	53%

School Disease Rate Analysis

During this health screening, the program participants were screened and tested for amoebiasis, intestinal worms, schistosomiasis in stool, schistosomiasis in urine, malaria, and ringworm. Figure 62 shows an analysis of the program participants' water-related disease rates.

Figure 62: Disease Rates per School

School Name	Percentage tested positive for Amoebiasis	Percentage tested positive for Intestinal Worms	Percentage tested positive for Schistoso-miasis in Stool	Percentage tested positive for Schistoso-miasis in Urine	Percentage tested positive for Malaria	Percentage tested positive for Ringworm
All Health Screening Participants	9%	31%	15%	18%	29%	3%
Tina's Education Center	4%	2%	2%	2%	0%	6%
Masonga Maalum	0%	0%	0%	0%	N/A	17%
Sota Primary	8%	2%	4%	0%	26%	8%
Majengo Primary	7%	9%	13%	5%	18%	3%
Nyamagongo Primary	7%	35%	9%	17%	58%	1%
Downhill Primary	15%	36%	24%	6%	23%	8%
Shirati Primary	3%	12%	10%	7%	18%	2%
Leaders Academy	3%	4%	1%	1%	N/A	10%
Nyambori Primary	10%	46%	19%	21%	70%	9%
Katuru Secondary	1%	16%	3%	6%	22%	0%
Raranya Secondary	5%	5%	2%	4%	0%	0%
Tai Secondary	5%	5%	4%	4%	24%	1%
Bukura Secondary	7%	23%	9%	16%	24%	0%
Masonga Secondary	2%	30%	20%	15%	16%	0%
Thabache Primary	10%	53%	21%	33%	66%	2%

**Note: Please note that all percentages were based on only those who produced a stool and/or urine sample. N/A means tests were not conducted at this specific school.*

Figure 62 illustrates disease prevalence rates within each school. We found that Downhill Primary students have the highest amoebiasis rates (15%) and schistosomiasis in stool rates (24%). Nyambori Primary students have the highest intestinal worm rates (46%), schistosomiasis in urine rates (21%) and malaria rates (70%). Masonga Maalum students have the highest ringworm rates (17%). Schools that have partnered with MSG in our school programs the longest, and thus have received most WASH education, tend to have healthier students (Tina's Education Center, Sota Primary, Katuru Secondary). This can be attributed to the continued increase in knowledge provided by MSG regarding disease prevention of water-related infections. Overall, these statistics indicate that participants are generally healthier if they are being exposed or have been exposed to Maji Safi Group's WASH education.

Likewise, schools that have not yet partnered with MSG in our school programs have some of the highest disease rates, such as Downhill Primary School and Nyambori Primary School. After the 2019 Health Screening Program was implemented, Downhill Primary School and Nyambori Primary School partnered with MSG in our school program through

the establishment of MSG School Health Clubs. These clubs will continue teaching WASH and female and male hygiene lessons throughout the next school year. We anticipate lower disease prevalence rates at these two schools in the 2020 Health Screening Program, as students will have had a full year to be educated on WASH disease prevention.

Health Screening Discussion

During the 2019 Health Screening Program, Maji Safi Group (MSG) collected extensive information about disease rates in the Rorya District. These rates represent the fifth year in our longitudinal study and are important to assessing the overall impact MSG's lessons are having on WASH behaviors in the community.

Over five years, our results have remained consistent: People who have been exposed to MSG's WASH education are healthier than those who have not received such education. Prevention is proving to save MSG program participants from continuously contracting WASH-related diseases. Our Health Screening results continue to indicate that those related to and/or interacting with program participants, whether through a family member or an entire school, benefit from the health education their connection is learning. Both family members and students from schools that have partnered with MSG for a long time had lower WASH disease rates than community members who had not yet received WASH education from MSG. Figures 4-7 above demonstrate how disease rates have varied over the years. The common trend we are seeing is that each consecutive year, current and past program participants have lower disease rates than non-program participants (except for amoebiasis in 2015 and schistosomiasis in stool in 2015). Additionally, current and past program participants have generally continued to have lower disease prevalence rates since 2015. This data maintains that MSG's WASH-related disease prevention education is effective in positively impacting and affecting the trajectory of people's health status.

2019 Program

The 2019 Health Screening Campaign was highly successful, but there is always room for improvement.
MSG recommends the following for the 2020 Health Screening Campaign:

- Update health screening questionnaire.
- Continue to collaborate with the local and district government regarding health screening dates and support to implement the program.
- Rescreen the communities and schools that were screened for the first time in 2019 to compare participants' disease prevalence rates before and after receiving MSG WASH-related disease prevention education.

2019 Health Screening Conclusions

Health screening results measure the WASH-disease prevalence rates of people who have received MSG's WASH education and participated in programs and compare them to disease prevalence rates of new MSG program participants and potential program participants who have never participated in MSG's education initiatives. The results continuously prove that there is a lower prevalence of disease rates among program participants who have completed MSG's WASH lessons. In 2019, in collaboration with the local and district governments, MSG was able to screen 8,299 people. Results indicated that MSG significantly improves the lives of program participants and community members who are exposed to MSG's education. It is our hope to continue our collaboration with the local and district governments in 2020 to further evaluate MSG programs and improve the lives of community members**.** Together, we can provide a clean bill of health coupled with community-driven education, which is a sustainable intervention model for decreasing WASH-related diseases in rural areas of Tanzania.

2019 Program Conclusion

With the financial support from our generous supporters, Maji Safi Group was able to directly teach over 49,674 people lifesaving WASH information in 2019. When we include the radio shows, we taught 420,874 people. We are pleased to see that Maji Safi Group continues to grow by expanding to new areas within the Rorya District. We are especially pleased with the health screening data that strongly indicate that MSG program participants continue to have lower disease prevalence rates than non-program participants without access to MSG's WASH education. We feel well prepared to enter 2020 with a strong management team and 17 Community Health Educators. We are confident that we can accomplish many of our upcoming goals. In 2020, it is our aim to continue expanding our WASH programs to other areas of the Rorya District and to keep demonstrating that Maji Safi Group's programs continue to be effective by maintaining our collaborative relationship with the government and the community. Additionally, we anticipate making an even larger decrease in waterborne and water-related diseases evident among MSG participants.