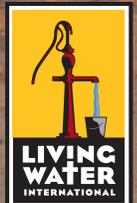


# **WASH Program Area – Systematic** **Review of Endline Evaluation Findings**

**Summary of four Living Water International WASH Program Areas:  
Cabaret (Haiti), Tola (Nicaragua), Ruhaama (Uganda),  
and Chirundu (Zambia)**

**JUNE 2020**



# **TABLE OF CONTENTS**

3	Executive Summary
5	Introduction: WASH Program Area (WPA)
6	WPA Evaluation Methodology
7	Water Access Summary
10	Sanitation & Hygiene Summary
14	Church & Community Mobilization Summary
18	Country Details
30	Conclusions & Recommendations
33	Appendices

**WASH Program Area – Systematic Review of Endline Evaluation Findings**  
**Summary of four Living Water International WASH Program Areas:**  
**Cabaret (Haiti), Tola (Nicaragua), Ruhaama (Uganda), and Chirundu (Zambia)**

© Living Water International, 2020

All rights reserved. Permission is required to reproduce any part of this publication.

Requests for permission should be addressed to Living Water International,  
4001 Greenbriar Drive #200, Stafford, Texas 77477, USA  
(email: [programs@water.cc](mailto:programs@water.cc), phone: 281.207.7800).

**Acknowledgements**

The authors would like to extend their sincere thanks to Living Water International field offices and regional teams for their partnership in compiling this report. We truly value their time in planning, executing, and reflecting on the extensive evaluations that contributed to this summary report.

We also want to thank the external evaluation teams that conducted thousands of household interviews to inform this report. Their commitment to detail helps this report be as accurate as it can be.

Lastly, we want to thank the communities where Living Water International has been implementing these and other WPAs. Their trust in the work and their time to answer extensive household interview questions allows us to learn and improve together.

These joint contributions help make this report possible, and we hope facilitate learning from past WPAs and strengthen future efforts to serve communities well.

**Lauren Bloem** is an Independent Contractor at Right Fit Evaluation Consulting

[lbloem@water.cc](mailto:lbloem@water.cc)

**Nathan Mallonee** is the Senior Director of Program Development at Living Water International

[nmallonee@water.cc](mailto:nmallonee@water.cc)

# Executive Summary

This systematic review offers a summary of learnings for Living Water’s first generation of water access, sanitation, and hygiene (WASH) program areas in Haiti, Nicaragua, Uganda, and Zambia. This report offers a high-level summary of progress towards WASH indicators and community and church mobilization goals central to the WASH Program Area (WPA) model. It summarizes existing reports conducted by external evaluators over the programmatic cycle of these four WPAs. The external evaluators relied on representative household surveys in the geographic regions where Living Water implemented the WPAs to estimate community level access to WASH services. Qualitative data, through focus groups and key informant interviews, also helped explain the results seen through the household surveys.

Increasing access to an improved water source through installing, rehabilitating, or extending

water systems was a clear focus of the WPA model, and there were substantial changes in water access in the communities that implemented the WPA in Uganda, Zambia, and Nicaragua (see Table 1).<sup>1</sup> There were limited changes in water access and hygiene levels in Haiti, though overall access levels were similar to those at endline in other countries.

WPA implementation around sanitation and hygiene varied, as some communities focused more on increasing access to sanitation and hygiene services, while others focused on behavior change and practice. There were positive changes in sanitation access in communities implementing the WPA in Haiti and Zambia. There were high levels of sanitation access but little change in Uganda and Nicaragua. In Nicaragua, access to hygiene services increased, and in Uganda rates stayed the about the same.

	HAITI (N=400)			NICARAGUA (N=N/A)			UGANDA (N=601)			ZAMBIA (N=407)		
	Mid '16	End '19	Change	Base '14	End '17	Change	Base '12-'14	End '19	Change	Base '13	End '19	Change
<b>WATER ACCESS % (N)</b>												
Households using an improved water source	72% (N/A)	73% (400)	+ 1 p.p.	36% (N/A)	67% (N/A)	+ 31 p.p.	49% (N/A)	73% (601)	+ 24 p.p.	46% (N/A)	97% (407)	+ 51 p.p.
<b>SANITATION % (N)</b>												
Households with access to a sanitation facility	37% (N/A)	88% (120)	+ 51 p.p.	99% (N/A)	99% (N/A)	+/- 0	96% (N/A)	98% (601)	+ 2 p.p.	56% (N/A)	88% (407)	+ 32 p.p.
<b>HYGIENE % (N)</b>												
Households with handwashing station that shows evidence of recent use	-	-	N/A	34% (N/A)	64% (N/A)	+ 30 p.p.	62% (N/A)	60% (84)	- 2 p.p.	-	84% (91)	N/A

TABLE 1 LIVING WATER WPA OUTCOMES SUMMARY

<sup>2</sup> Based on sample size calculations, we rely on a 5% margin of error in this report and note in bold cases where the change in access was outside of this margin of error and therefore more likely to be statistically significant.



With church and community mobilization, inconsistent indicators across time and communities make it challenging to draw conclusions from the quantitative data. There were no substantial changes in positive perceptions of the local church, or in community members self-identifying as Christian. It is hard to know the extent to which Living Water might have influenced these changes, either positively or negatively. There are no indicators collected from baseline to endline in any country that explicitly links Living Water WPA implementation with the community's perceptions of the church.

The report makes recommendations regarding an improved global monitoring, evaluation, and learning system to better align evaluation planning, indicators, and reporting across time and communities. Increased consistency in these areas will make cross-country comparisons more credible and useful in future reports. Relatedly, more clearly linking monitoring and output data with endline evaluations will allow future reports to more clearly make a connection between any community level changes and the contribution of Living Water WPAs to those changes.

Finally, the report also makes recommendations regarding program design based on the evaluations. Increasing clarity on activities and indicators for WASH practices (in addition to WASH services) will help the WPAs focus their activities and align work with outcome goals. Similarly, clarity on the role of church and community mobilization within the WPA model will help guide activity planning. These issues have already been addressed in the organization's Theory of Change (2018)<sup>2</sup>, but these evaluations underscore the importance of the Theory of Change. Finally, developing a more transparent process for indicator target setting that relies on either existing monitoring data or the baseline evaluation could then guide programmatic planning.

---

<sup>2</sup> <http://livingwater.box.com/TOC>

# 1. Introduction: WASH Program Area (WPA)

## 1.1 Program Theory

This systematic review offers a summary of learnings for the ‘first generation’ of water access, sanitation, and hygiene (WASH) Program Areas in Haiti, Nicaragua, Uganda, and Zambia. Living Water International first started implementing these WPAs between 2012 and 2014 and are concluding their implementation in Fiscal Year 2019 (FY19). **At the time of these programs’ design, Living Water defined a WPA as “a defined geographic region that is the focus of a 3-5 year program thoughtfully integrating and contextualizing principles of water access, sanitation, hygiene, Christian witness, and sustainability—resulting in sustained impact in that region through infrastructure, health, and spiritual transformation.”<sup>3</sup>**

The first WPA launched in Ruhaama, Uganda, in 2012. Living Water’s prior experience had mainly focused on constructing boreholes with hand pumps in a project-based mindset. The WPA expanded a focus to whole districts (a wider geographic area), a focus on safe water systems available to each household, and attention to behavior change needed to create sustainable improvements in WASH.<sup>4</sup> This systems-focus aligns with communities’ demands for household level water access, global standards around WASH services, and even lowers costs per water user.

Additionally, there was a focus on church mobilization in WPAs to support, eventually, WASH-focused church mobilization.<sup>5</sup> This integration of spiritual and social activities aligns with a focus on integral mission – acknowledging the holistic nature of this work and of people.

<sup>3</sup> WPA Planning Guidelines, 2013

<sup>4</sup> WPA Top 10 Lessons Learned, 2018

<sup>5</sup> WPA Top 10 Lessons Learned, 2018

<sup>6</sup> For all current targets, definitions and indicators see: <https://unstats.un.org/sdgs/indicators/indicators-list/>

<sup>7</sup> JMP Monitoring Data, accessed <https://washdata.org>

## 1.2 WASH Global Context

While these WPAs were being implemented, the global context for WASH changed with the update from Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs) in 2016. Specifically, global standards shifted from MDG Goal 7, Target 7C, “to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation,” to SDG Goal 6, “Ensure availability and sustainable management of water and sanitation for all.”<sup>6</sup> For a full summary of changes from MDGs to SDGs, see **Appendix A**.

The World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) Joint Monitoring Programme for Water Supply and Sanitation (JMP) developed updated standards to monitor the SDGs globally.<sup>7</sup> There is a specific focus on measuring “safely managed” water, sanitation, and hygiene, with a focus on household level access. This is a higher standard for WASH services than in the MDG era.

In conclusion, a strength of the WPA model recognizes that sustainable change in access to WASH services and practice rely on building water access systems, and leveraging the local church, government, and community organizations, to improve WASH conditions for a whole community. The model positions Living Water well to increasingly align programming with global WASH standards outlined under the SDGs in future generations of WPA programming.

The rest of the report is structured in four main sections. Section 2 provides details on the methodology used to evaluate each WPA. Section 3 compares results in all program areas across countries. The next section focuses on each country’s results and goes into more detail about the programmatic activity in each. Lastly, Section 5 provides some conclusions and recommendations.

## 2. WPA Evaluation Methodology

This report leverages data collected from representative household surveys in the geographic regions where Living Water implemented the WPAs. In most cases, external evaluators used some version of probability proportionate to size sampling, breaking the geographic area into smaller regions, usually based on existing administrative boundaries. Based on overall populations, the researchers established the appropriate proportion of the overall sample to interview from each region. Based on their sample size calculations, we assume a 5% margin of error in this report and note cases where changes were outside of this margin of error. These changes are more likely to be true changes in access levels for the area and not simply a change due to random chance. This also increases the likelihood the change was statistically significant. Due to a lack of raw data for most baselines, this report does not include statistical tests to determine if the changes are statistically significant.

It is important to note caution should be taken when comparing findings across countries. Due to differences in survey design, data collection, and analysis across reports, there is wide variation in the ways many of these indicators are calculated. Wherever possible, this report aims for internal consistency within a country from baseline to endline, but it is more challenging to align these indicators for comparisons across countries.

Additionally, due to the program design and methodology, the report cannot state with certainty the extent to which Living Water programming contributed to or caused the changes in community level access to WASH



services, whether positive or negative. There is no counterfactual, so it is not possible to know “what would have happened in the absence of Living Water’s interventions?” That said, we do provide some comparison to national level data over similar time periods to provide some sense of a counterfactual. Also, in the Country Details section, a summary of WPA activity and outputs highlights known activities and outputs accomplished within the WPA. Readers can make an inference between those efforts and the community level findings to decide the extent to which Living Water contributed to community level changes in WASH services.

## 3. WPA Results

### 3.1 Water Access Summary

The cumulative findings across the four WPAs show that water access was a key focus of Living Water work in these areas. In Uganda, Zambia, and Nicaragua, the rates of households using an improved drinking water source increased by up to 96%, an objectively meaningful change in water access levels.

See Table 2 for a summary of water access goals and progress. The change in response rates is noted for each country as a percentage point change. Using the 5% margin of error as a threshold, this report emphasizes findings highlighted that are outside a combined margin of error, and therefore, are more likely to be statistically significant.

Overall access rates to an **improved water source** increased over the measured time period in Nicaragua, Uganda, and Zambia. The increases ranged from 24 to 51 percentage points, well outside a combined margin of error and likely a statistically significant improvement. In Haiti, water access rates remained relatively flat at around 73%, a rate that is similar to endline rates in other countries.

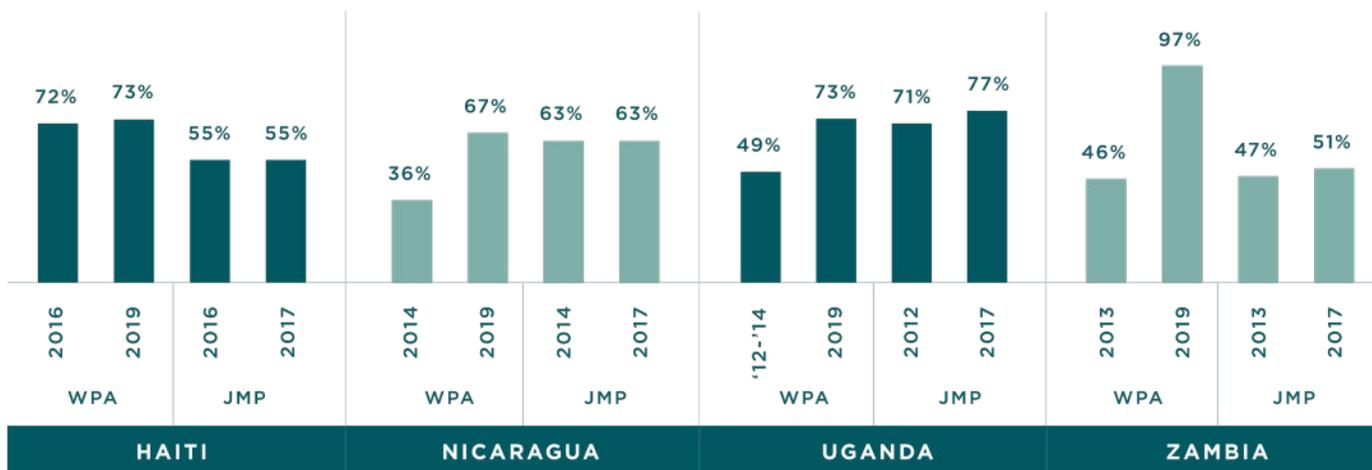
Households with access to an improved water source were asked if it took **30 minutes or less to access that water source**. In both Uganda and Zambia, the change in this indicator was large (both a 29 percentage points change), and likely a statistically significant change. Time to access an improved water source was not collected in Haiti and Nicaragua.

	HAITI (N=400)			NICARAGUA (N=N/A)			UGANDA (N=601)			ZAMBIA (N=407)		
	Mid '16	End '19	Change	Base '14	End '17	Change	Base '12-'14	End '19	Change	Base '13	End '19	Change
(1) Households using an improved water source <sup>9</sup>	72% (N/A)	73% (400)	+ 1 p.p.	36% (N/A)	67% (N/A)	+ 31 p.p.	49% (N/A)	73% (601)	+ 24 p.p.	46% (N/A)	97% (407)	+ 51 p.p.
(1a) Households spending 30 minutes or less to collect water from an improved source	-	-	N/A	-	-	N/A	35% (N/A)	64% (575)	+ 29 p.p.	45% (N/A)	74% (385)	+ 29 p.p.
(1b) Households with at least 20L available water per person per day from an improved water source	42% (N/A)	48% (N/A)	+ 6 p.p.	50% (N/A)	28% (N/A)	- 22% p.p.	-	-	N/A	-	68% (390)	N/A
(2) Respondents satisfied with primary water source quality	42% (N/A)	72% (400)	+ 30 p.p.	62% (N/A)	94% (N/A)	+ 32 p.p.	29% (N/A)	70% (601)	+ 41 p.p.	51% (N/A)	85% (N/A)	+ 34 p.p.

TABLE 2 WPA OUTCOME 1: INCREASED ACCESS TO SAFE WATER<sup>8</sup>

<sup>8</sup> WPA LogFrame and Indicators for GOAL OUTCOMES JULY 2016

<sup>9</sup> Improved drinking water sources are those that have the potential to deliver safe water by nature of their design and construction, and include: piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater, and packaged or delivered water



GRAPH 1 HOUSEHOLDS USING AT LEAST AN IMPROVED WATER SOURCE

Similarly, for households with access to an improved water source, they were asked if they had **20L available to them per person per day**. Water quantity available remained relatively flat in Haiti, which makes sense since access rates did not change. For Nicaragua, where access rates increased, the proportion of those with at least 20L of water decreased. The quantity of water from an improved source was not collected for Uganda and Zambia at both baseline and endline.

Lastly, across all countries, those **satisfied with their primary water source** increased from 30 to 41 percentage points, likely a statistically significant increase across all countries. It is interesting that in Haiti, where access rates did not change, satisfaction with water sources

improved to a similar extent to other countries where water access improved.

### Contextualized Findings

For context we compare findings in the WPAs to the country averages for rural regions from the JMP's publicly available monitoring data.<sup>10</sup> This data should be treated as a comparison, rather than a control group, as there could be meaningful differences between the rural average and the WPA communities. Nevertheless, the comparison is helpful and provides context for the work of the WPAs (see Graph 1).

<sup>10</sup> JMP Water Access, <https://washdata.org/data/household#!/>

HAITI				NICARAGUA				UGANDA				ZAMBIA			
WPA		JMP		WPA		JMP		WPA		JMP		WPA		JMP	
2016	2019	2016	2017	2014	2019	2014	2017	2012-2014	2019	2012	2017	2013	2019	2013	2017
72%	73%	55%	55%	36%	67%	63%	63%	49%	73%	71%	77%	46%	97%	47%	51%

TABLE 3 WATER ACCESS IN WPAS VERSUS JMP RURAL REGIONS: HOUSEHOLDS USING AT LEAST AN IMPROVED WATER SOURCE

What is most interesting to note is that the community context chosen at baseline seems to matter for the eventual outcome. There are three different case studies for program design here:

- 1. Above average:** in Haiti, the community had access to an improved water source at rates above average for rural Haiti at mid-line, and access levels did not increase over the remainder of the WPA program cycle. It should also be noted some of the WPA in Haiti overlaps with a semi-urban area, where the JMP average for Haiti's urban water access is 74%, closer to the WPA area.
- 2. Below average → average:** in Nicaragua and Uganda, the community chosen for a WPA had access to an improved water source at rates lower than the rural average. Then by endline, access rates were on par with the rural average for their country

- 3. Average → above average:** in Zambia, water access rates were about average at baseline for rural areas. Then, access rates increased to be well above average by endline, nearing 100%

This comparison to the rural context for each community provides some interesting learning questions for the WPA model. What is the goal for the WPA? Is it to select communities with below average access, and increase that access to be average, or even above average? Is the goal to select communities with access levels near average, but increase access rates to be nearly 100%? Either are valid goals, though the WPA documentation at the time of first-generation models did not make the endline goal clear. This data provides an interesting lens through which we can ask these questions.

### 3.2 Sanitation & Hygiene Summary

Sanitation and hygiene efforts differ by country office, though both are part of the WPA model broadly. Some seemed to focus on access to sanitation facilities, whereas others focused more on the sensitization of the community to

safe sanitation practices and elimination of open defecation practices. Most efforts for hygiene included behavior change and education about when to wash hands to reduce illness. See Table 4 for a summary of sanitation outcomes.

**Households with “access” to a latrine** is a broad indicator in terms of access to sanitation service, and it was interpreted differently across countries. It is also not clear that in every context the evaluators treated “access” to a latrine as having at least an improved facility.<sup>12</sup> In Haiti, access improved by 24 percentage

points, outside of a combined margin of error and likely a statistically significant change. Similarly, in Zambia, change in access increased by 39 percentage points, likely a statistically significant change. Due to data availability, we know in Zambia this indicator refers to any latrine, not only an improved latrine. In Uganda access remained relatively stable. In Nicaragua, access rates decreased by 14 percentage points, likely a statistically significant change. It should be noted due to context provided in the report, this indicator was interpreted to mean “household-level private” access to a latrine in Nicaragua, a much higher threshold than used in other contexts. It also mentions Storm Nate, a hurricane in 2017, caused damage to household latrines.

	HAITI (N=400)			NICARAGUA (N=N/A)			UGANDA (N=601)			ZAMBIA (N=407)		
	Mid '16	End '19	Change	Base '14	End '17	Change	Base '12-'14	End '19	Change	Base '13	End '19	Change
(1) Households with access to a latrine	75% (N/A)	99% (400)	+ 24 p.p.	98% (N/A)	84% (N/A)	- 14 p.p.	96% (N/A)	98% (601)	+ 2 p.p.	54% (N/A)	92% (407)	+ 39 p.p.
(1a) Households with access to sanitation facility (no more than 5 households)	37% (N/A)	88% (120)	+ 51 p.p.	99% (N/A)	99% (N/A)	+/- 0	-	-	N/A	56% (N/A)	88% (407)	+ 32 p.p.
(1b) Households with a clean (sanitary) latrine	94% (N/A)	17% (262)	- 77 p.p.	42% (N/A)	14% (N/A)	- 28 p.p.	58% (N/A)	61% (N/A)	+ 3 p.p.	47% (N/A)	56% (N/A)	+ 9 p.p.
(3) Communities achieving ODF status	-	77% (N/A)	N/A	99% (N/A)	99% (N/A)	+/- 0	-	-	N/A	-	80% (N/A)	N/A

TABLE 4 WPA OUTCOME 2: IMPROVED SANITATION PRACTICES<sup>11</sup>

<sup>11</sup> WPA LogFrame and Indicators for GOAL OUTCOMES JULY 2016

<sup>12</sup> Improved sanitation facilities are those designed to hygienically separate excreta from human contact, and include: flush/pour flush to piped sewer system, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs

**Households with access to shared sanitation facilities** (among no more than 5 households) improved in Haiti by 51 percentage points, likely a statistically significant change. There are very high rates of access to at least a shared facility in Nicaragua, but no change in access rates from baseline to endline. In Zambia, there's an increase in access to shared facilities by 32 percentage points, likely a statistically significant change.

**Access to a clean latrine** went down in Haiti, even though access rates went up. This is possible since it's a sub-set indicator for those with a latrine and signifies a smaller proportion of those with a latrine have a clean latrine. Access to a clean latrine also went down in Nicaragua, as did overall access levels. Again, thanks to context given in the report, we know Storm Nate created a lot of damage in the area, reducing the number of household-level latrines. More households then had to share facilities and they were likely not clean. There was not much change in access to clean latrines in Zambia or Uganda.

Lastly, **communities achieving Open Defecation Free (ODF) status** was measured in Nicaragua, where ODF rates remained high. Due to data

limitations we cannot report changes in ODF status in other countries. It is important to note this is a community level indicator, not a household level indicator, and is not easily compared with other sanitation indicators.

The MDGs did not include any target on hygiene specifically, but in the SDGs it is recognized as a critical and related component to sanitation. Specifically, the presence of a handwashing facility<sup>13</sup> with soap and water is a top priority, and as such language was included in SDG 6.2 (see **Appendix A** for more details). This priority is only increasingly critical due to the recent global pandemic and efforts to reduce the spread of the coronavirus COVID-19.

The WPA focus on hygiene also varied by location. Some focused on the practices of when to wash hands, and fewer programs focused on increasing access to soap.

	HAITI (N=400)			NICARAGUA (N=N/A)			UGANDA (N=601)			ZAMBIA (N=407)		
	Mid '16	End '19	Change	Base '14	End '17	Change	Base '12-'14	End '19	Change	Base '13	End '19	Change
(1) Households with handwashing station that shows evidence of recent use	-	-	N/A	34% (N/A)	64% (N/A)	+ 30 p.p.	62% (N/A)	60% (84)	- 2 p.p.	-	84% (91)	N/A
(2) Households with soap and water at handwashing station	-	-	N/A	24% (N/A)	46% (N/A)	+ 22 p.p.	-	-	N/A	-	-	N/A
(3) Households storing drinking water in safe, covered container	71% (N/A)	48% (400)	- 23 p.p.	76% (N/A)	66% (N/A)	- 10 p.p.	77% (N/A)	72% (331)	- 5 p.p.	54% (N/A)	70% (407)	+ 16 p.p.

TABLE 5 WPA OUTCOME 3: IMPROVED HYGIENE PRACTICES<sup>14</sup>

<sup>13</sup> Handwashing facilities may be fixed or mobile and include a sink with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent, and soapy water but does not include ash, soil, sand or other handwashing agents.

<sup>14</sup> WPA LogFrame and Indicators for GOAL OUTCOMES JULY 2016



**Households with handwashing stations showing evidence of recent use** improved in Nicaragua by around 30 percentage points, well outside a margin of error and likely a statistically significant change. Data was not collected on this indicator in Haiti, only at endline in Zambia, and there was little change in Uganda.

**Households with soap and water at a handwashing station** improved in Nicaragua by 22 percentage points and changed very little in Haiti. Inconsistent or no data was collected on this indicator in Uganda and Zambia.

**Households storing drinking water in safe, covered containers** reduced in Haiti by 23 percentage points, likely a statistically significant change. In Nicaragua and Uganda, use of covered water containers also went down but the change was smaller. This practice improved in Zambia, improving by 16 percentage points.

In conclusion, there are meaningful changes in water access and hygiene facilities in Uganda, Zambia, and Nicaragua. There were little changes or a reduction in these metrics in Haiti, but given this report compares a midline evaluation with endline findings, those results could easily be underestimating change in access rates throughout an entire WPA program cycle. We find positive changes in sanitation access in Haiti and Zambia, and a reduction in household sanitation access in Nicaragua, likely due to a hurricane. We find stable sanitation access rates in Uganda. See **Appendix B** for a summary of WPA WASH indicators as aligned with current SDG access ladders.

### 3.3 Church & Community Mobilization Summary

#### Church & Community Mobilization: Programmatic Context

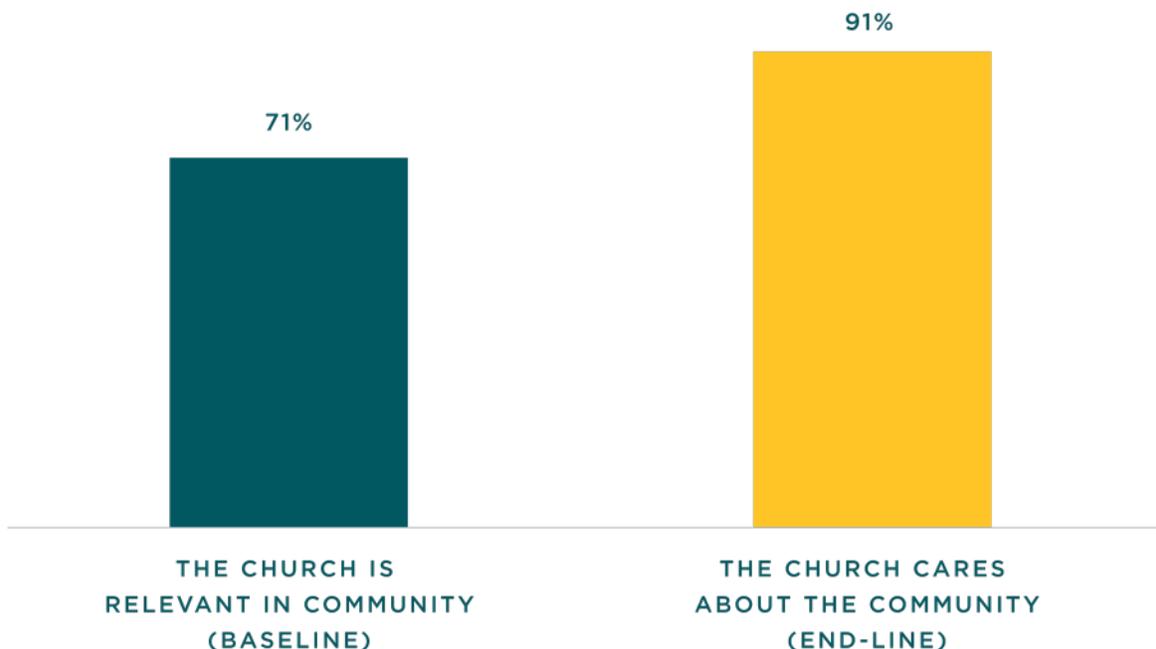
Engaging with the local church is a clear priority for Living Water offices. In most communities, there is an explicit focus on sharing the gospel of Jesus Christ. In other cases, it is the local church leading WASH trainings and community mobilization, a more integrated programming approach.

Additionally, many offices partner with local community organizations. There is a focus on developing the community buy-in to maintain water access points through various means - including asking households to contribute to the operations and maintenance (O&M) of water points through labor and finances.

In summary, programmatically there seems to have been a wide variation in how Living Water staff leveraged existing church, community-based organizations, and government officials to plan, develop, and maintain the WPA.

#### Church & Community Mobilization: WPA Findings

Questions about “**perceptions of the local church**” varied across time. In Uganda, responses did change from baseline to endline, but it is challenging to attribute this to a change in perception among the community since the question wording changed substantially from baseline to endline. At baseline respondents were asked if “the church is relevant in the community”, versus at endline they were asked if “the church cares about the community”. See summary in Graph 2, below.

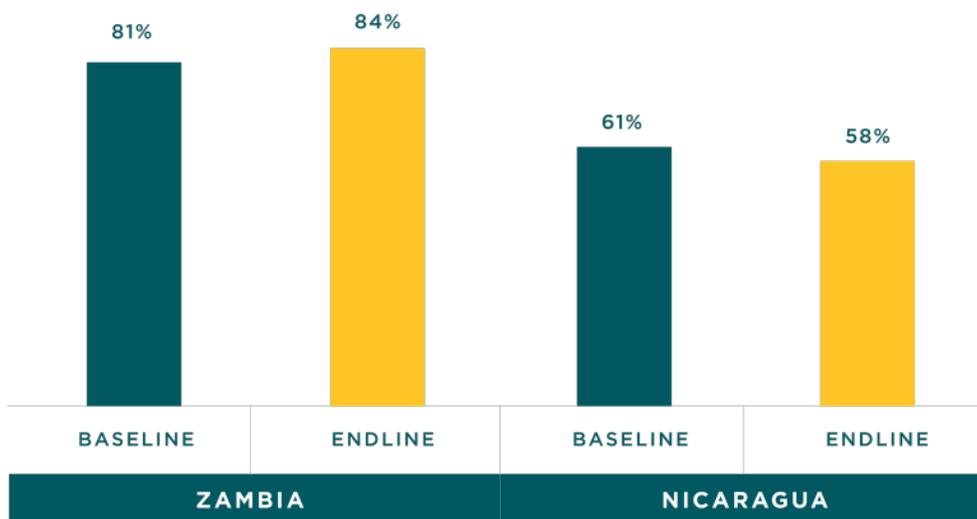


GRAPH 2 : UGANDA - CHURCH MOBILIZATION



In Zambia and Nicaragua, respondents were asked if they had a “**positive perception of the local church**” at baseline and endline. The change of 3 percentage points is within a combined margin of error and likely not a statistically significant difference. See Graph 3 for more details.

In summary there are inconclusive findings about if the community’s perceptions of the church changed during the WPA cycle due to a combination of no data being collected, a change in wording from baseline to endline, and no significant changes in countries with consistent data collection.

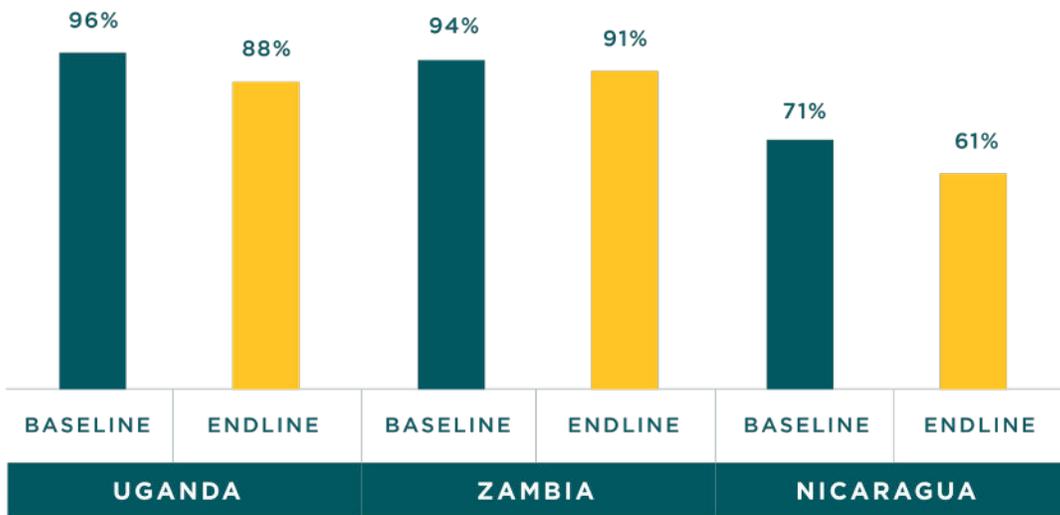


GRAPH 3 : HOUSEHOLDS WITH A POSITIVE PERCEPTION OF THE LOCAL CHURCH



There are also inconclusive findings about changes in those **identifying as Christian**. In Haiti, 15% of respondents identify as Christian at endline, but this question was not asked at midline. This is a notably lower rate of self-identified Christians than in the other WPAs. In Uganda, Zambia, and Nicaragua where respondents were asked if they identified as Christian both at baseline and endline, rates of

self-identified Christians go down in all contexts. The magnitude of this change is not large, from 3 to 10 percentage points, and so generally within a combined margin of error. Thus, we can not suggest any change within the population in those identifying as Christian. See Graph 4 for more details.



GRAPH 4 : COMMUNITY MEMBERS THAT IDENTIFY AS CHRISTIAN

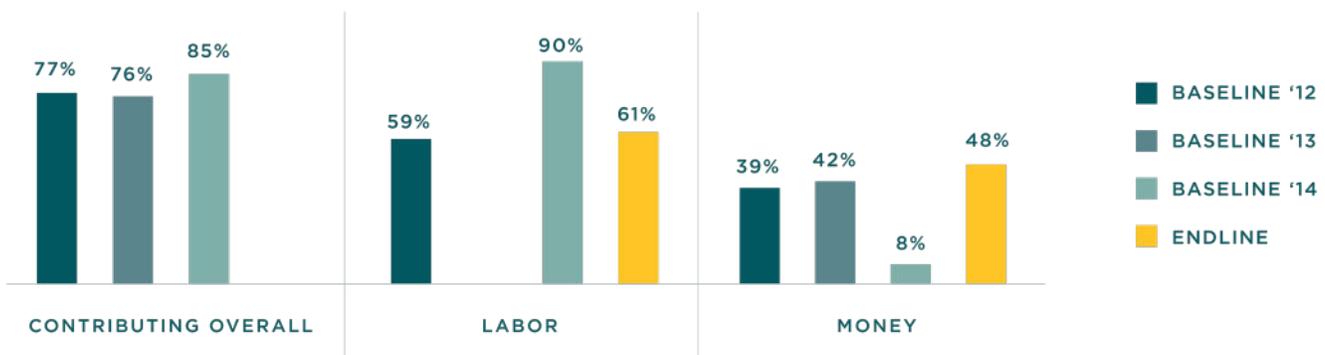


The community mobilization indicators focus on the **Operations and Maintenance (O&M) of water access points**. In the evaluation reports summarized here, there was large variation in data collection around O&M of water points across countries and across time.

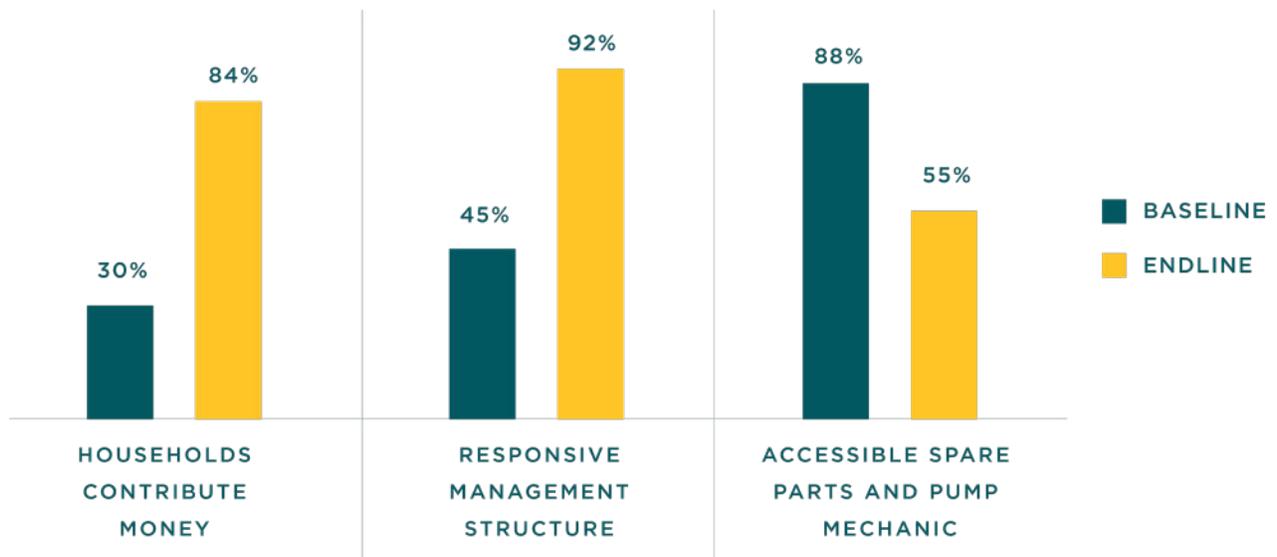
The Uganda evaluations asked about O&M contributions by a household, both in general, and also through giving time and money to efforts. The initial rates of O&M contributions in the Uganda study varied widely, with up to 90% of households contributing to O&M through labor contributions at baseline. Because of this interesting heterogeneity at baseline, we show

all three baseline waves<sup>15</sup> here, as well as the endline outcomes, rather than reporting the average. Communities seemed to have very different O&M set-ups at baseline and it would be interesting to dig into changes that happened at the community level by endline. Overall change in community-led O&M is inconclusive due to wide variation between baseline findings and limited reporting at endline. See Graph 5 for more details.

<sup>15</sup> Programming across the region of Ruhaama, Uganda started in “waves” in different communities, from 2012-2014, and a baseline evaluation was conducted in each wave. Findings in other outcome areas are aggregated to summarize a weighted average across all baseline waves. See Graph 5, below, for a summary of O&M contributions across each baseline wave.



GRAPH 5 : UGANDA O&M CONTRIBUTIONS SUMMARY



GRAPH 6 ZAMBIA - O&M DETAILS

There are clear changes in O&M contributions in Zambia, the only other country report with O&M data collected over time. The change in money contributions rose by 180%, or 54 percentage points. They also asked respondents if there was a “functional and responsive management structure” in place for water sources, and that rose from 45% to 92%. However, they also asked if there was “accessible spare parts and a pump mechanic” and that response fell from 88% to 55%. See Graph 6.

In conclusion, limited data collection and inconsistent indicators over time and across communities make it challenging to report conclusively on changes in community and church mobilization within WPA communities.

Due to variation in programming and indicators related to the church within the WPA, it is challenging to know if perceptions of the church changed in the communities hosting a WPA, and to what extent Living Water caused or contributed to these changes.

For those WPAs with data collection on O&M there are mixed outcomes. In Uganda, changes differed considerably by the wave of data collection. In Zambia, households increased their contributions of money to O&M efforts and there was an increase in a responsive management structure, but a decrease in accessible spare parts. These results are inconclusive in determining if a community is better equipped to manage the improved water sources developed through the WPA.

Finally, in the reports summarized here, there is a narrow focus on O&M of water points to measure progress in community mobilization. This metric is related, though not the same, as WPA theory and activities around mobilizing local water groups and public education around WASH practice. There could be clearer goals and metrics around these community mobilization efforts to get a better sense of the WPA implementation and success in other areas of community mobilization.

## 4.0 Country Details

### 4.1 Cabaret, Haiti

#### WASH Goals & Activities

The WPA in Cabaret, Haiti, set out to ensure the target community had continuous access to an improved water source and increased positive hygiene and sanitation behaviors.<sup>16</sup> The Living Water International - Haiti (LWIH) program approach was aligned with Living Water’s strategic integration approach of the WPA model to address WASH issues in a holistic and sustainable way.

The team implemented projects to either rehabilitate dysfunctional wells or drill new ones. Sixty wells were built and a water system was rehabilitated and expanded in Matelas and Cazale communities. In the endline evaluation report, 46% of households had access to a water tank truck, 15% to a protected well, and 6% to a public tap. The quality of water seems to be an issue, as key informant interviews and focus group participants shared, they are getting water from tanker trucks for drinking, and using the protected well and public taps for cooking and other household needs.

For sanitation and hygiene promotion, the team conducted awareness sessions to community club members, held sensitization campaigns in schools, and distributed hygiene kits to the community. Health promoters were hired to deliver trainings specifically targeting children, mothers, or caregivers. The number of sessions and attendance at sessions was not reported.

#### Community and Church Mobilization Goals & Activities

Neglect and a lack of funds had left the limited but existing water infrastructure to be inoperable. LWIH set up a Community Water Management Committee (CWMC) of 7 people that will be responsible for managing water and sanitation systems put in place by LWIH. This committee provides training and capacity building on management, leadership, and entrepreneurship to make WASH officials, community leaders, and networks more equipped for this work. They act as a liaison between the national water ministry (DINEPA) and other government agencies working in the WASH sector. Based on the report, the committee relies on the presence of LWIH and its budget for maintenance, especially large repairs, so this is a concern for the sustainability of the systems.

	Activities	Outputs
Water	<ul style="list-style-type: none"> <li>• Build wells</li> <li>• Rehabilitate water systems</li> </ul>	<ul style="list-style-type: none"> <li>• 60 wells built</li> <li>• One water system rehabilitated and expanded</li> </ul>
Sanitation and Hygiene	<ul style="list-style-type: none"> <li>• Conduct awareness sessions</li> <li>• Hold sensitization campaigns in schools</li> <li>• Distribute hygiene kits in the community</li> <li>• Hire health promoters to deliver training</li> </ul>	<ul style="list-style-type: none"> <li>• None recorded</li> </ul>
Church and Community Mobilization	<ul style="list-style-type: none"> <li>• Set up a Community Water Management Committee (CWMC)</li> <li>• Committee provides training and capacity building on management, leadership, and entrepreneurship</li> <li>• Collaborate with local church association to identify needs in the community</li> </ul>	<ul style="list-style-type: none"> <li>• 7 people recruited to CWMC</li> </ul>

TABLE 5 WPA ACTIVITY AND OUTPUT SUMMARY - HAITI

<sup>16</sup> End Line Cabaret Definitive, 2020, accessed in HT01> Evaluation Reports>FYE19 Final Evaluations

The local church association, created by the evangelical leaders of Cabaret, and LWIH formed a partnership to better design and implement the WPA projects. The key informant interviews and focus groups reported that this partnership helped identify needs in the community, and helps the community feel empowered to take ownership of the new water point rehabilitation. This partnership could be a key to the sustainability of changes, creating a partnership with other local organizations and churches to be engaged in sustaining WASH services longer term. The report does not make clear if any connection exists between the CWMC and this local church association.

## Key Indicators

**Report Context:** The Cabaret WPA began with a quasi-experimental design, using a treatment and control community selection process.<sup>17</sup> During the implementation of programming, many areas in the baseline ‘control’ area were covered by intervention activities, and many of the baseline ‘intervention’ areas were not covered by intervention activities. Therefore, at the mid-term evaluation, the treatment/control approach was dropped and only the intervention areas were surveyed. Therefore, this compares Haiti’s midline evaluation findings with the endline evaluation findings to better compare the same populations. This is a limitation as these findings summarize outcomes from only about half of the WPA program cycle.

<sup>17</sup> WPA Endline Evaluation Research Plan, September 2018

WATER ACCESS				SANITATION				HYGIENE			
	Mid	End	Change		Mid	End	Change		Mid	End	Change
(1) Households using an improved water source	72% (N/A)	73% (400)	+ 1 p.p.	(1) Households with access to a latrine	75% (N/A)	99% (400)	+ 24 p.p.	(1) Households with handwashing station that shows evidence of recent use	-	-	N/A
(1a) Households spending 30 minutes or less to collect water from an improved source	-	-	N/A	(1a) Households with access to sanitation facility (no more than 5 households)	37% (N/A)	88% (120)	+ 51 p.p.	(2) Households with soap and water at handwashing station	-	-	N/A
(1b) Households with at least 20L available water per person per day from an improved water source	42% (N/A)	48% (N/A)	+ 6 p.p.	(1b) Households with a clean (sanitary) latrine	94% (N/A)	17% (262)	- 77 p.p.	(3) Households storing drinking water in safe, covered container	71% (N/A)	48% (400)	- 23 p.p.
(2) Respondents satisfied with primary water source quality	42% (N/A)	72% (400)	+ 30 p.p.	(3) Communities achieving ODF status	-	77%	N/A				

TABLE 6 WPA OUTCOMES SUMMARY - HAITI (N=400)

Overall water access levels did not change for the Cabaret community from midline to endline. Monitoring data suggests 60 wells were built in the community, so it is possible they were built between baseline and midline reporting. It is also possible the community population grew over this time period, and 60 wells was not sufficient to increase water access rates for the community. There was an improvement in satisfaction with water source quality, which LWIH could have contributed to through new wells.

There is an increase in sanitation facilities shared by no more than 5 households, from 37% to 88%, likely a statistically significant increase. Overall access to a latrine is very high at endline, at 99%, though this is a broad indicator. It is interesting to note the difference between the high latrine access rate and the ODF rate of 77% at endline. This speaks to the difference between sanitation access and practice; while people had access to a latrine, not many were sanitary (17% at endline) and open defecation continued in some communities.

Overall there are very low rates of access to hygiene facilities at midline and endline, ending at 4% of households with access to a handwashing station. There was also a decrease in households storing water in a safe, covered container, a change that is likely statistically significant. While it is hard to know for sure, it is possible that higher satisfaction with the water means it looked cleaner and households did not believe they needed to store the water safely. This highlights the difference between water access and safe water management and hygiene practice.

Lastly, there are no community and church mobilization indicators asked across time, so we cannot report any changes in community O&M efforts or community perceptions of the local church.



## Conclusions

In conclusion, the focus groups and key informant interviews revealed the Cabaret WPA mobilized a local church association and developed a Community Water Management Committee to push WASH services and practices forward. There was a stated focus on women's access to WASH services to reduce child and maternal mortality and morbidity. There is little evidence of water and hygiene access changing over the time period covered in this report, from midline to endline of the WPA. Access to sanitation services increased over this time period from 37% to 88%, a meaningful improvement for the community. There was nearly universal "access" to a latrine at endline, though open defecation was still practiced in some communities. This highlights an ongoing challenge in providing both access to WASH services and pairing that programming with sufficient behavior change in WASH practice. As mentioned previously, these findings summarize changes only from midline to endline of the WPA program cycle and do not represent all changes that occurred during the WPA.

## 4.2 Tola, Nicaragua

### WASH Goals & Activities

The target population for the Living Water International – Nicaragua (LWIN) WPA in Tola, Nicaragua, was in 21 communities with a population of 21,400. By endline the WPA extended to 23 communities, two more than the scheduled goal. The goal was to develop 45 new wells and 10 new alternative water points.<sup>18</sup> There was also a special focus on reducing diarrhea in children both over and under the age of 5.

Access to safe water did increase from 36% to 67%, and 26 new wells and 9 complex water systems were completed by LWIN. Water sources used by most households included pipes into the house, public water tap, artesian well made by a machine, and protected artesian well. The greatest change in source of water was “well made with a machine”, which could have been the contribution of LWIN. Focus groups reported that water coming from the new wells taste, smell, and look great.

<sup>18</sup> Midterm Evaluation NIO1 WPA Tola December 2017, accessed in NIO1> Evaluation Reports>FYE19 Final Evaluations

There was a decrease of 14 percentage points in household-level latrine access reportedly due to damage caused by Storm Nate. Access to at least a shared latrine remained high at 99% access rates, and open defecation remained low. A staff person of the Municipal Mayor’s Office said there was a need for latrines to link safe water and safe sanitation practice, and this increased need could be a result of the damages occurring due to the storm.

Due to the focus on reducing diarrhea, women were surveyed about what hygiene practices they use to prevent diarrhea at home. Most could report about hand washing (76%), but most other safety practices were reported on at low rates (below 25%), so the report concludes more strategic behavior change programming could improve hygiene practices.

### Community and Church Mobilization Goals & Activities

The goal was establishing 50 Church Care Groups that would be the main agents of hygiene and sanitation promotion, gospel proclamation, and spiritual growth. There was also a goal of establishing 50 community management groups (DWSC). Recruiting and training the DWSC was going well at mid-line, with 57% of the communities having trained DWSC, and the remaining 43% communities working on the certification process.

	Activities	Outputs
Water	<ul style="list-style-type: none"> <li>Build wells and alternative water points</li> </ul>	<ul style="list-style-type: none"> <li>26 new wells</li> <li>9 complex water systems</li> </ul>
Sanitation and Hygiene	<ul style="list-style-type: none"> <li>Educate caregivers about key times to wash hands to reduce diarrhea in children</li> </ul>	<ul style="list-style-type: none"> <li>23 hygiene and sanitation groups were formed (one per community) and trained in 7 basic lessons</li> </ul>
Church and Community Mobilization	<ul style="list-style-type: none"> <li>Establish church care groups and community management groups (DWSC)</li> </ul>	<ul style="list-style-type: none"> <li>57% of communities have trained DWSC</li> <li>28 leaders trained on the topic of Integral Mission</li> <li>91% of communities trained on Integral Mission and Biblical Orality</li> </ul>

TABLE 7 WPA ACTIVITY AND OUTPUT SUMMARY – NICARAGUA

There was positive collaboration between church leaders, with 28 leaders trained on the topic of integral mission, of which 68% are Evangelical and 32% are Catholic. Out of the 21 communities within the WPA, 91% have been trained on integral mission and Bible storytelling. In Tola, Evangelicals and Catholics do not historically get along well, but through the work of LWIN they shared, "... we have learned that we should not be evangelicals there and Catholics here, but we have worked as a family, as a community we have met, we have been mixed, we have responded to the needs of the community all together to be able to develop."

The leaders trained through the church have led the direction of community mobilization around the construction, maintenance, and improvements of the water wells. This is an example of true integral missions.

**Report Context:** The Tola programming ended partway through the WPA program cycle due to political unrest. As such, the endline report used here is a midline report based on previously planned programmatic timeline. Programming started in 2015 with 7 communities and expanded to 14 communities by 2016. This is a reason for caution in interpreting results, as implementation occurred for only one or two years, considerably less than a recommended WPA program cycle of 3-5 years.<sup>19</sup> Additionally, only mothers or tutors of children under 5 were interviewed in the midline report, whereas both women and men were interviewed at baseline, so that is another consideration when interpreting these results.

<sup>19</sup> WPA Top 10 Lessons Learned, 2018

	WATER ACCESS				SANITATION				HYGIENE		
	Base	End	Change		Base	End	Change		Base	End	Change
(1) Households using an improved water source	36%	67%	+ 31 p.p.	(1) Households with access to a (private) latrine	98%	84%	- 14 p.p.	(1) Households with handwashing station that shows evidence of recent use	34%	64%	+ 30 p.p.
(1a) Households spending 30 minutes or less to collect water from an improved source	-	-	N/A	(1a) Households with access to sanitation facility (no more than 5 households)	99%	99%	+/- 0	(2) Households with soap and water at handwashing station	24%	46%	+ 22 p.p.
(1b) Households with at least 20L available water per person per day from an improved water source	50%	28%	- 22 p.p.	(1b) Households with a clean (sanitary) latrine	42%	14%	- 28 p.p.	(3) Households storing drinking water in safe, covered container	76%	66%	- 10 p.p.
(2) Respondents satisfied with primary water source quality	62%	94%	+ 32 p.p.	(3) Communities achieving ODF status	99%	99%	+/- 0				

TABLE 8 WPA OUTCOMES SUMMARY - NICARAGUA (N=N/A)

In Tola, the percentage of households that use an improved water source increased from 36% to 67%, likely a statistically significant change. Of those, the percentage of households getting at least 20L of improved water per person decreased, from 50% to 28%, likely a statistically significant decrease. Consultations with the program implementers noted that at baseline, there was a larger population that filled containers with water for storage, but at end-line more of those families had water piped directly into the house. It is possible this indicator only measured the amount of water stored in the home, rather than total water available. The overall satisfaction with primary water source increased from 62% to 94%, likely a statistically significant increase.

There was a decrease in “access” to a latrine, from 98% to 84%, which in this case was interpreted to mean household-level access. Access to shared latrines remained high, at 99% over time. The cleanliness of those latrines went down over time, so that only 14% were considered clean at endline, likely a statistically significant change. Still the majority of communities have ODF status (99%).

With hygiene, there was an increase both in those with a handwashing station showing recent use (34% to 64%), and those with soap at the handwashing station (24% to 46%), likely both statistically significant changes. Use of safe, covered water storage containers went down by 10 percentage points.

There were no community mobilization or O&M indicators collected at baseline, but at midline 95% of households were contributing monetarily to O&M funds. Perceptions of the local church went downwards slightly, from 61% to 58% with a positive view, and those identifying as Christian went downwards from 71% to 61% (see **Graphs 3 & 4**, above) — though both are within the margin of error.



## Conclusions

In conclusion, the WPA in Tola improved water access and hygiene access. There was not a focus on building latrines and overall household level access to sanitation services went down over this time period, though general “access” to at least a shared latrine remained high. There is little community O&M data collected, and slightly downward (though not significant) trends in perceptions and membership rates of the church. The WPA was well on its way to training community management groups when the program had to be ended early. Overall the changes seen are substantial given the short programming timeline represented in this report.

### 4.3 Ruhaama, Uganda

#### WASH Goals & Activities

The primary goal of the WPA in Ruhaama, Uganda, was water supply access.<sup>20</sup> The Living Water International - Uganda (LWIU) team developed boreholes, gravity flow scheme for piped water supply, protected springs and constructed some rainwater harvesting tanks. They built 400 water points total. The program improved drinking water quality by constructing iron removal plants.

The most common water source for the WPA was piped water (34%), boreholes (21%), and protected springs (18%). Focus groups revealed that the community has had challenges in maintaining boreholes to the extent that most were non-functional. The community suggested that low quality materials were used in borehole construction. For this reason, the community prefers piped water.

The WPA constructed 100 stances of institutional latrines. There were some challenges in sanitation promotion as local authorities were used to enforce certain practices (the report does

not go into detail about what these practices were). LWIU vehicles were used as a part of enforcement which was viewed negatively. Nonetheless, 18 communities were declared Open Defecation Free.

Lastly, the endline report suggests LWIU focused more on increasing infrastructure, like the number of latrines built, and less on sanitation and hygiene practice, like reducing open defecation communities.

#### Community and Church Mobilization Goals & Activities

Through engaging with the local church, the program aimed to increase the social, economic and spiritual transformation of the community. LWIU collaborated with local churches to build capacity of church leaders in bible studies and orality skills. Overall, the team estimates they reached 200,000 people with the Gospel of Jesus Christ. The report says church membership has risen from 4,864 to 8,593, a large increase. These numbers do not align clearly with the data from household surveys, which suggest a very high percentage but decreasing number of the community identify as Christian both at baseline (96%) and at endline (88%), unless there were very large increases in the population in Ruhaama, which is a possibility.

<sup>20</sup> Ruhaama WPA\_Endline Evaluation Report\_Final Draft, accessed in WPA Evaluations>FYE19 Final Evaluations>Evaluation Reports>UG01

	Activities	Outputs
Water	<ul style="list-style-type: none"> <li>Develop boreholes, gravity flow scheme for piped water supply, protected springs, and constructed some rainwater harvesting tanks</li> <li>Construct iron removal plants</li> </ul>	<ul style="list-style-type: none"> <li>400 water points constructed</li> </ul>
Sanitation and Hygiene	<ul style="list-style-type: none"> <li>Promote new sanitation and hygiene practices</li> </ul>	<ul style="list-style-type: none"> <li>100 stances of institutional latrines constructed</li> <li>18 communities declared open defecation free</li> </ul>
Church and Community Mobilization	<ul style="list-style-type: none"> <li>Build capacity of church leaders in bible studies and orality skills</li> <li>Mobilization, training, and facilitating the formation of community-based organizations, including a pump maintenance group</li> </ul>	<ul style="list-style-type: none"> <li>200,000 reached with the Gospel of Jesus Christ</li> </ul>

TABLE 10 WPA ACTIVITY AND OUTPUT SUMMARY - UGANDA

LWIU prioritized community engagement for sustainability (CES) through community mobilization, training, and facilitating the formation of community-based organizations (CBOs). In partnership with the district, LWIU facilitated training and revival of a District Hand-pump Mechanics Association that will take district wide responsibility for borehole maintenance. It was expected these structures would take over the O&M of improved water infrastructure once LWIU presence comes to a close. There were some concerns that this handover would be a large process and something that could be planned even sooner in future WPA models. There was an added challenge that the National Water and Sewerage Corporation (NWSC) had taken over some water points and were charging a high tariff, so those who could not afford it were resorting to using unsafe water points.

**Report Context:** The Ruhaama, Uganda, program implementation differed from other countries in that there were ‘waves’ of WPA interventions

in various communities.<sup>21</sup> A baseline evaluation was conducted in each of the three waves when implementation started, in 2012, 2013, and 2014. In some communities, the intervention work had started two years prior to the baseline data collection, possibly falsely increasing baseline WASH services. All communities were included in a 2015 endline study. It was recommended the work continue in the area, and work also expanded into two communities that were not in the baseline studies. The new endline evaluation included all three WPA waves and was conducted in 2019. The evaluation focused on the effectiveness of pulling out of the community and sustainability of efforts. This is important to note as it means endline evaluation findings represent programming taking place for 4 to 7+ years. It is also important to note the “baseline” evaluation data reported here is a weighted average of the three baseline evaluation findings. Because of this, no data is reported if it was missing in at least one of the baseline waves. consideration when interpreting these results.

<sup>21</sup> WPA Endline Evaluation Research Plan, September 2018

WATER ACCESS				SANITATION				HYGIENE			
	Base	End	Change		Base	End	Change		Base	End	Change
(1) Households using an improved water source	49% (N/A)	73% (601)	+ 24 p.p.	(1) Households with access to a latrine	96% (N/A)	98% (601)	+ 2 p.p.	(1) Households with handwashing station that shows evidence of recent use	62% (N/A)	60% (84)	- 2 p.p.
(1a) Households spending 30 minutes or less to collect water from an improved source	35% (N/A)	64% (575)	+ 29 p.p.	(1a) Households with access to sanitation facility (no more than 5 households)	-	-	N/A	(2) Households with soap and water at handwashing station	-	-	N/A
(1b) Households with at least 20L available water per person per day from an improved water source	-	-	N/A	(1b) Households with a clean (sanitary) latrine	58% (N/A)	61% (571)	+ 3 p.p.	(3) Households storing drinking water in safe, covered container	77% (N/A)	72% (331)	- 5 p.p.
(2) Respondents satisfied with primary water source quality	29% (N/A)	70% (601)	+ 41 p.p.	(3) Communities achieving ODF status	-	-	N/A				

TABLE 11 WPA OUTCOMES SUMMARY - UGANDA (N=601)

Overall water access to an improved water source increased in the Ruhaama WPA from an average of 49% to 73%. Of those, there was also an improvement of those taking 30 minutes or less to collect water from an improved water source. There was also a large improvement in those satisfied with their primary water source quality, a change of 41 percentage points. All of these results are likely statistically significant changes.

Access to a latrine remained high in the community, at 96% and 98% access. Of those, households with a clean latrine also did not change substantially, going from 58% to 61%.

The number of households with access to a handwashing station showing evidence of recent use stayed relatively flat, ending at 60% access. Similarly, households storing drinking water in safe, covered containers went slightly down, from 77% to 72%.



## Conclusions

In summary, the WPA in Ruhaama, Uganda was implemented in waves starting in 2012. There was a clear focus on improving water access and water quality, which is further corroborated by data collected in the endline evaluation. Water access rates and satisfaction with water access improved dramatically in the WPA. Challenges with sanitation and hygiene promotion, as well as control of water access points, could be further studied to inform future WPA designs. The data also aligns with that narrative, as there were no substantial changes in sanitation and hygiene access over the course of the WPA time period.

## 4.4 Chirundu, Zambia

### WASH Goals & Activities

The Living Water International- Zambia (LWIZ) team thought the Chirundu District fit the WPA model very well. The district had a population of 62,235 people, three quarters (75%) of which did not have any access to safe drinking water and over half (53%) did not have access to proper sanitation. The programming was therefore relevant and timely to the community.

The goal of LWIZ in Chirundu was to increase access to safe water services to 85% of households, such that each user had at least 20 liters of water per day, with a total collection time of 30 minutes or less roundtrip. An additional goal was that 90% of water sites are functional 5 years after implementation.

LWIZ developed 209 new improved water sources and rehabilitated 180 water sources. This exceeded the 200 planned new water sources and 150 planned for rehabilitation. The report notes most of these sources were drilled before 2017, when a receding water table made it more challenging to drill new water sources. It reports a lack of rain made the water table recede below

70 meters, the maximum distance for Chirundu WPA boreholes. Even after subcontracting engineers to do hydrological surveys, they could not hit the water table. At endline, the rate of households using an improved water source had increased to 96%, well above the WPA goal of 85%.

Additionally, LWIZ conducted various capacity building activities on water access, sanitation, and hygiene. There was some concern about the sustainability of hygiene and sanitation behavior change, especially regarding open defecation practices. There were strongly held traditional beliefs that perpetuate open defecation practices. The endline evaluation report notes that the full WPA model was only implemented from 2015-2017 and this may not be enough time to reach such a large population with repeated sanitation and hygiene messaging.

### Community and Church Mobilization Goals & Activities

There was a goal to increase community participation in managing the O&M of water systems, so that 90% would remain functional in 5 years. LWIZ set up the following systems for increased sustainability: (i) Implementation of the WASH program through existing community and

	Activities	Outputs
Water	<ul style="list-style-type: none"> <li>• Build new water sources</li> <li>• Rehabilitate water sources</li> </ul>	<ul style="list-style-type: none"> <li>• 209 new improved water sources built</li> <li>• 180 rehabilitated water sources</li> </ul>
Sanitation and Hygiene	<ul style="list-style-type: none"> <li>• Capacity building activities in regards to water access, sanitation, and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• None recorded</li> </ul>
Church and Community Mobilization	<ul style="list-style-type: none"> <li>• Implement WASH program through existing community and district level structures</li> <li>• Promote user-fees collection</li> <li>• Proclaim Gospel of Jesus Christ</li> <li>• Host Church engagement, mobilization, and envisioning meetings</li> <li>• Implement Orality skills training</li> </ul>	<ul style="list-style-type: none"> <li>• Reached 40,000 people with Gospel of Jesus Christ</li> <li>• Hosted 57 church engagement sessions</li> <li>• 428 gospel proclamation events at water points</li> <li>• 281 screenings of JESUS film</li> <li>• 240 church mobilization/ envisioning meetings</li> <li>• 96 Orality skills training meetings</li> </ul>

TABLE 13 WPA ACTIVITY AND OUTPUT SUMMARY - ZAMBIA

district level structures (i.e. V-WASHE and D-WASHE); (ii) Promotion of the user-fees collection. LWIZ needed the support of local authorities to access spare parts, as it felt that was outside of its mandate.

It was challenging to motivate the community to contribute to user fees for maintenance when the water source was in disrepair. Despite this challenge, the endline report concluded that the use of existing community and district structures, like V-WASHE, increase the share of households that contributed to O&M efforts.

With church mobilization, it is estimated that the WPA reached 40,000 people with the gospel of Jesus Christ. LWIZ hosted activities with 57 churches throughout the district, nearly hitting their goal of engaging with 60 churches. They also planned 350 gospel proclamation events at various water points, and implemented 428 events, surpassing their goal. They had planned 350 screenings of the JESUS film, but 281 screenings were held. LWIZ also built the capacity of local church leaders, planning for

300 church mobilization/ envisioning meetings, and implementing 240 meetings. They also planned 180 orality skills training meetings, and successfully hosted 96 meetings.

**Report Context:** During the implementation of the WPA, the wards within the district of Chirundu were re-organized from 6 to 10.<sup>22</sup> Therefore, the baseline evaluation covers only 6 wards and endline covers 10, smaller wards. Also, LWIZ identified that the ward of Ngombe Ilede received few interventions during the program, so endline data was not collected for three wards that overlap with the geographic footprint of the original Ngombe Ilede ward. When comparing the baseline and endline data, data from Ngombe Ilede have been excluded from the averages reported. LWIZ was able to implement a full programmatic cycle, covering the span of 6 years. These findings could be the most representative of changes possible through the WPA model of all those summarized in this report.

<sup>22</sup> WPA Endline Evaluation Research Plan, September 2018

WATER ACCESS				SANITATION				HYGIENE			
	Base	End	Change		Base	End	Change		Base	End	Change
(1) Households using an improved water source	46% (N/A)	97% (407)	+ 51 p.p.	(1) Households with access to a latrine	54% (N/A)	92% (407)	+ 38 p.p.	(1) Households with handwashing station that shows evidence of recent use	-	84% (91)	N/A
(1a) Households spending 30 minutes or less to collect water from an improved source	45% (N/A)	74% (385)	+ 29 p.p.	(1a) Households with access to sanitation facility (no more than 5 households)	56% (N/A)	88% (N/A)	+ 32 p.p.	(2) Households with soap and water at handwashing station	-	-	N/A
(1b) Households with at least 20L available water per person per day from an improved water source	-	68% (390)	N/A	(1b) Households with a clean (sanitary) latrine	47% (N/A)	56% (373)	+ 9 p.p.	(3) Households storing drinking water in safe, covered container	54% (N/A)	70% (407)	+ 16 p.p.
(2) Respondents satisfied with primary water source quality	51% (N/A)	85% (N/A)	+ 34 p.p.	(3) Communities achieving ODF status	-	80%	N/A				

TABLE 14 WPA OUTCOMES SUMMARY – ZAMBIA (N=407)

Access to an improved water source increased substantially, from 46% to 97%, a 51 percentage point change. Of those with access to an improved water source, households spending 30 minutes or less to collect water increased by 29 percentage points. Respondents were also more satisfied with their water quality at endline, an improvement of 34 percentage points. All three of these results are likely statistically significant changes.

Households with access to a shared sanitation facility increased from 54% to 92%, an increase of 38 percentage points and likely a statistically significant change. This indicator was asked very broadly, if households had access to any latrine. Those with access to a latrine shared with no more than 5 households went from 56% to 88%, an increase in 32 percentage points and likely a statistically significant change. Despite more people having access to a latrine, cleanliness rates stayed about the same.

There is a lack of data to report on changes in access to a handwashing facility showing evidence of recent use. Safe water practices increased, with more households using safe, covered water storage containers, a change in 16 percentage points.



## Conclusions

In summary, LWIZ articulated and met many WASH specific goals over the programmatic life cycle. They mobilized many community education events, church mobilization events, and had a specific focus on building systems for the maintenance of water access points. Water access, sanitation, and hygiene metrics all improved over the lifecycle of programming. This is the one WPA documented in this review with data available to track changes over the full program implementation cycle and is therefore possibly the best snapshot of a true WPA model.

## 5.0 Conclusions & Recommendations

### **5.1 First Generation WPA Findings Summary**

The WPA model is an exciting innovation for Living Water because it allows for the prioritization of systems-level, sustainable change in WASH services, community, and church mobilization in communities where it works.

Some limitations to the currently available data on the effectiveness of WPAs include inconsistent reporting within and across countries. To the extent possible, this report summarizes comparable indicators across countries and time. Another challenge is the timeframe covering these reports do not cover a full WPA implementation cycle, other than in Zambia. In all other cases, programming was cut short (in Nicaragua), the baseline was not reliable (Haiti), or programming occurred in waves (Uganda). Lastly, as previously noted, while these evaluations aim to report WASH access and service rates in the WPA communities, we cannot make the claim that Living Water programming is solely responsible for the changes as there is not a counterfactual.

In the data we do have available, we see clear increases in access to improved water sources. In Nicaragua, Uganda, and Zambia, increases in improved water sources ranged from 24 to 46 percentage points, likely a statistically significant change. In all WPAs, respondents increased in their satisfaction to their primary water source. These findings are consistent with WPA plans, all of which had a clear focus on water access.

Findings in the areas of sanitation and hygiene are more mixed. In Haiti, access to sanitation services improved, but hygiene reduced. In Nicaragua, access to sanitation services reduced,



and hygiene improved. In Uganda, there was little change in either sanitation or hygiene. Finally, in Zambia both sanitation and hygiene improved. These findings could possibly reflect the inconsistent goals and activities implemented around sanitation and hygiene services and practice across WPA communities.

Finally, in the areas of community and church mobilization, there is a lack of consistent indicators across time and community. For example, the indicators listed in the WPA LogFrame are rarely consistently asked from baseline to endline evaluation in any country. This makes it especially challenging to draw conclusions around these interventions. In Zambia, we see contributions to O&M increase, but access to spare parts decrease. In Uganda, there are mixed O&M contribution rates from baseline to endline. In terms of church mobilization indicators, there is a slight decrease in those identifying as Christian. There is little to no change in those with a positive perception of the local church. Overall there is a lack of data available to make credible statements about changes in community and church mobilization in these WPAs.

## 5.2 Recommendations for Monitoring, Evaluation & Learning

### Increase consistency in the Outcomes Evaluation process

- a. Clarify and refine the outcomes most critical to measuring programmatic success. Consider aligning indicators with the SDG's new WASH service levels.
- b. Provide a core set of household survey questions that align with stated outcomes and indicators. If using SDG WASH service standards, consider using their household survey.<sup>23</sup>
- c. Provide analysis guidance for external evaluators – for example, make clear which indicators should be measured out of all respondents, versus a sub-set.
- d. Provide clear reporting requirements. Ensure the external evaluators document which survey question they're using for each indicator and provide a data table for the key outcomes that includes both the numerator and denominator, along with percentages.
- e. Require that raw data is shared back with Living Water for data quality assurance.

### Consider a larger M&E Framework to guide how the Outcomes Evaluation process fits into an evaluation agenda.

- a. An M&E Framework could articulate larger picture evaluative questions relevant to Living Water, the WPA model, and the new Theory of Change (Appendix B). Depending on the questions, Living Water can match the appropriate method to the questions.
- b. This would place the Outcomes Evaluation process within a larger evaluation agenda. Also, only field offices with clear outcome, output, and activity goals, along with a monitoring process, would have to undertake this process. Having a more robust M&E system in those communities would provide more context to the Outcomes Evaluation process. Without linking the outcomes data to monitoring data, it is very challenging to know how much of the community level changes could or should be attributed to Living Water programming.
- c. Other evaluative questions related to the Theory of Change could be taken on by other offices that are not implementing a full WPA.

---

<sup>23</sup> <https://washdata.org/monitoring/methods/core-questions>

### 5.3 Recommendations for Program Design

#### Increase clarity on the role of community mobilization

- a. Outcome 6 in the WPA LogFrame is “Increased local community engagement in sustainable WASH development,” and most indicators reported in the endline reports have to do with operation and management (O&M) funds, labor, or contribution. There could be more clarity on the role of the community engagement – is it for O&M development or to support the behavior change goals of WASH practice?
- b. Also, if there is an increasing goal in household level water access (or, “safely managed” water), the community mobilization could take on more of an advocacy role to support building water systems. The goals around this Outcome area could drastically change the activities a WPA pursues in the area.

#### Increase clarity on the role of church mobilization

- a. Outcome 4 and Outcome 5 relate to “increased gospel of Jesus Christ proclamation” and “increased local church engagement in the community.” Some WPAs took a clear evangelistic approach, showing movies and providing Biblical orality training. Other WPAs pursued a holistic mission

approach and utilized local church groups to facilitate WASH improvements. Clarity on the goals might help clarify programmatic activities.

#### Consider a needs assessment to drive program goals

- a. The WPAs had inconsistent goals set out at the beginning. Some focused on the number of water points developed but did not link that number with a rationale for getting to the desired water access rate. Others set a water access rate goal, but then did not operationalize how many water points that would require. This makes it challenging to know if the outcome measures reported here are “good” or “bad” since there were not clear goals set out from the beginning.
- b. The baseline evaluation findings were not clearly used to guide goal setting. For WPAs pursuing an outcomes evaluation, this is valuable data that could be used to set goals. Use of existing JMP monitoring data could also help set realistic goals in WPAs or any other Living Water program context.

# Appendices

## Appendix A: Global WASH Monitoring Framework, 1990 to present

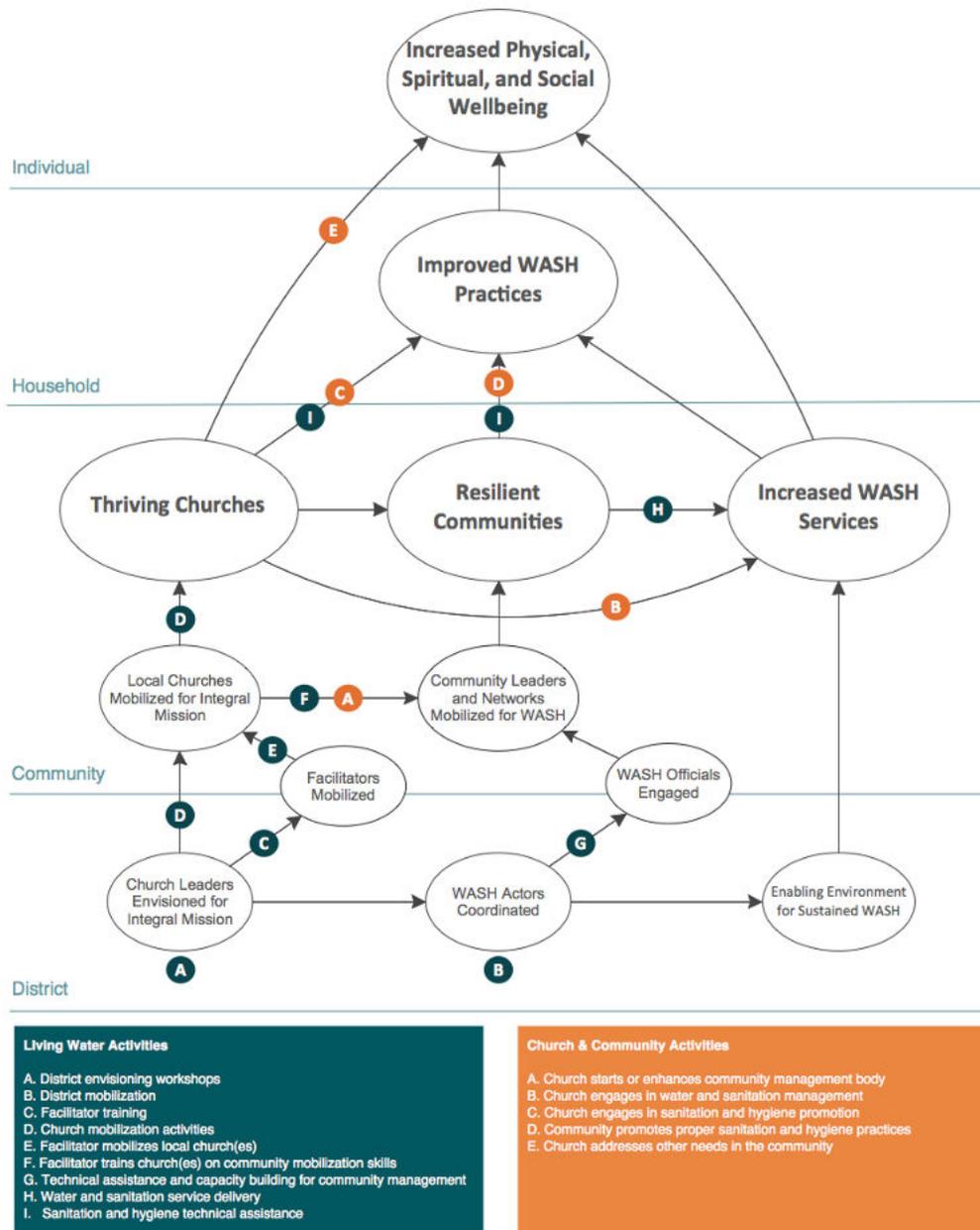
MDG success <b>Goal 7 – To ensure environmental sustainability</b>	SDG challenge and response <b>Goal 6 - Ensure availability and sustainable management of water and sanitation for all</b>
<ul style="list-style-type: none"> <li>• <i>Target 7C “to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation”. 1990 was the baseline year.</i></li> </ul>	<p><i>8 Targets<sup>2</sup> of which 6.1; 6.2; are most closely related to 7C:</i></p> <ul style="list-style-type: none"> <li>• <i>Target 6.1 “by 2030, achieve universal and equitable access to safe and affordable drinking water for all”</i></li> <li>• <i>Target 6.2 “By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations”.</i></li> </ul>
<p>Between 1990 and 2015, an estimated 2.6 billion people gained access to an improved drinking water source and 2.1 billion people gained access to an improved sanitation facility.</p>	
<p>From “Basic services”</p> <ul style="list-style-type: none"> <li>• For a water supply JMP 3 rung ladder               <ul style="list-style-type: none"> <li>○ Without access: unimproved;</li> <li>○ With access: improved other; improved.</li> </ul> </li> <li>• For sanitation JMP 4 rung ladder               <ul style="list-style-type: none"> <li>○ Without access: open defecation; unimproved; shared.</li> <li>○ With access: improved.</li> </ul> </li> </ul>	<p>To “Safely managed”</p> <ul style="list-style-type: none"> <li>• For a water supply to be safely managed it must be an improved source that is located on premises, available when needed, and free of contamination from feces and priority chemicals.</li> <li>• Safely managed sanitation is defined as the population using an improved sanitation facility that is not shared with other households, and where excreta are safely disposed in situ or transported either by truck or sewer to be safely treated off-site.</li> </ul>
<p>From “Halve the proportion”</p>	<p>To “Leaving no-one behind”: JMP will track inequities in access to drinking water, sanitation and hygiene – essential for achieving universal access and ensuring progressive realization of the human rights to water and sanitation – such as with disaggregated data by income, sex, age, race, ethnicity, migratory status, disability and geographic location.</p>
<p>Timeline: 1990 baseline to 2015</p>	<p>Timeline: JMP 2015 baseline for households, to 2030            Timeline: JMP 2018 baseline for WASH in Schools, to 2030            Timeline: JMP 2018 baseline for WASH in Health Care facilities, to 2030</p>

TABLE 1 CHANGES FROM MDGS TO SDGS<sup>24</sup>

<sup>24</sup> Table accessed from Research Plan for WPA Evaluation 2018

<sup>25</sup> For all eight targets, definitions and indicators see: <https://unstats.un.org/sdgs/indicators/indicators-list/>

## Appendix B: Living Water Theory of Change, 2018



### THEORY OF CHANGE

## Appendix C: JMP WASH Ladders

### 5.1 First Generation WPA Findings Summary

The World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) Joint Monitoring Programme for Water Supply and Sanitation (JMP) developed updated standards to monitor the SDG goals globally.

**Water access:** SDG global indicator 6.1.1 measures “proportion of population using safely managed drinking water services”.<sup>26</sup>

This section summarizes each community’s water access levels at baseline, before the WPA intervention, and at endline. The JMP water access categories that create the SDG ladder are listed here, with the categories included in this report in bold:

1. **Safely managed:** drinking water from an improved water source which is located on premises, available when needed and free from fecal and priority chemical contamination
2. **Basic:** drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing
3. **Limited:** drinking water from an improved

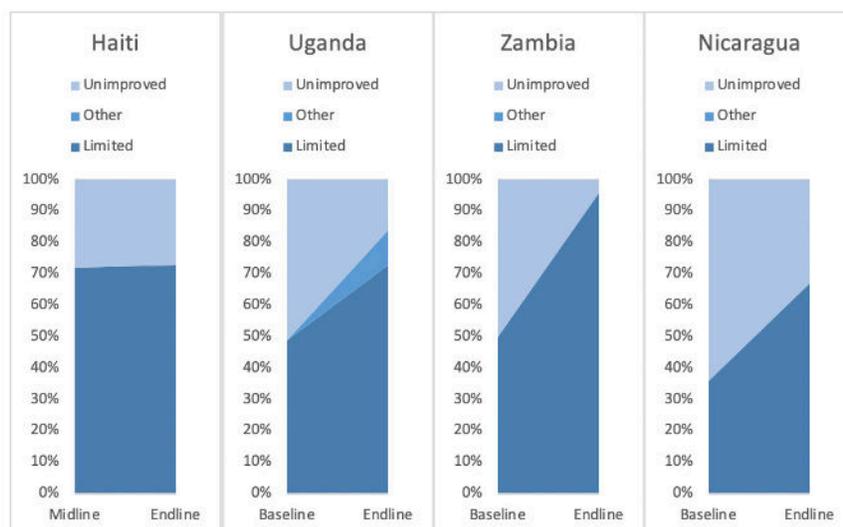
source for which collection time exceeds 30 minutes for a roundtrip including queuing

4. **Unimproved:** drinking water from an unprotected dug well or unprotected spring

5. **Surface water:** drinking water directly from a river, dam, lake, pond, stream, canal, or irrigation canal

Since the global standard of “safely managed” water did not exist when first generation WPAs were planned, it is not considered a relevant goal for this report. While “basic” water access aligns with current WPA program planning and goals, inconsistencies in survey questions and data collection<sup>27</sup> do not allow us to report on that level of water access in this report. Similarly, current data does not distinguish between unimproved and surface water sources, so those without “limited” access are assumed to be using “unimproved” water, though they could be using a combination of “unimproved” and “surface water”. Lastly, an “other” category covers water sources that may fall in between “limited” and “unimproved”, such as using bottled water.

Graph 1 visualizes progress in the WPAs towards an improved water source.



GRAPH 1 WATER ACCESS SDG LADDERS

<sup>26</sup> JMP Monitoring, Drinking Water: <https://washdata.org/monitoring/drinking-water>

<sup>27</sup> It is unclear in some instances if the 30-minute collection time question was reported as a separate question from the improved water source question, a sub-set of the improved water source question, or as the true combination of those with an improved water source within 30 minutes roundtrip.

**Sanitation service:** The JMP global monitoring indicator for this goal is 6.2.1: “Proportion of population using (a) safely managed sanitation services and (b) a handwashing facility with soap and water”. An additional indicator is 6.2: “Proportion of population practicing open defecation”.<sup>28</sup>

This report summarizes each country’s sanitation levels at baseline, before the WPA intervention, and at endline. The JMP levels of sanitation access are summarized here, and the sanitation categories that we are able to report are in bold:

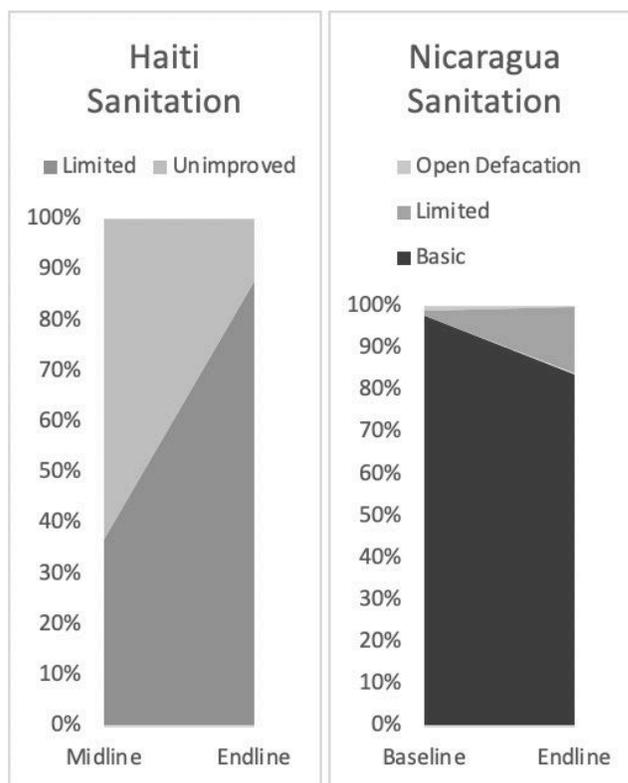
1. **Safely managed:** Use of improved facilities which are not shared with other households and where excreta are safely disposed in situ or transported and treated off-site
2. **Basic:** use of improved facilities which are not shared with other households
3. **Limited:** use of improved facilities shared between two or more households
4. **Unimproved:** use of pit latrines without a slab or platform, hanging latrines, or bucket latrines
5. **Open defecation:** disposal of human feces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste

Again, “safely managed” sanitation service was not the global standard at the time these WPAs were planned, and is not used as a relevant goal in this report. It is possible to report “basic” sanitation services only for Nicaragua where the

survey design and reporting allows for this level of analysis. For the Haiti, due to inconsistencies with survey questions and reporting<sup>29</sup> it is only possible to report on a “limited” level of sanitation services. In Uganda and Zambia, the questions around sanitation services are so broad it is not possible to create a JMP ladder, but report on the data available above in the Country Details section.

Due to the limitations described here, data and comparisons across communities should be treated with caution. Clearer survey questions and reporting standards will make tracking changes in community sanitation services easier in the future.

<sup>29</sup> It seems possible the question for households “with their own latrine (not shared)” was often only recorded for those households with access to a latrine, a sub-set of the total population.



GRAPH 2 SANITATION SDG LADDERS

<sup>28</sup> JMP Monitoring, Sanitation: <https://washdata.org/monitoring/sanitation>

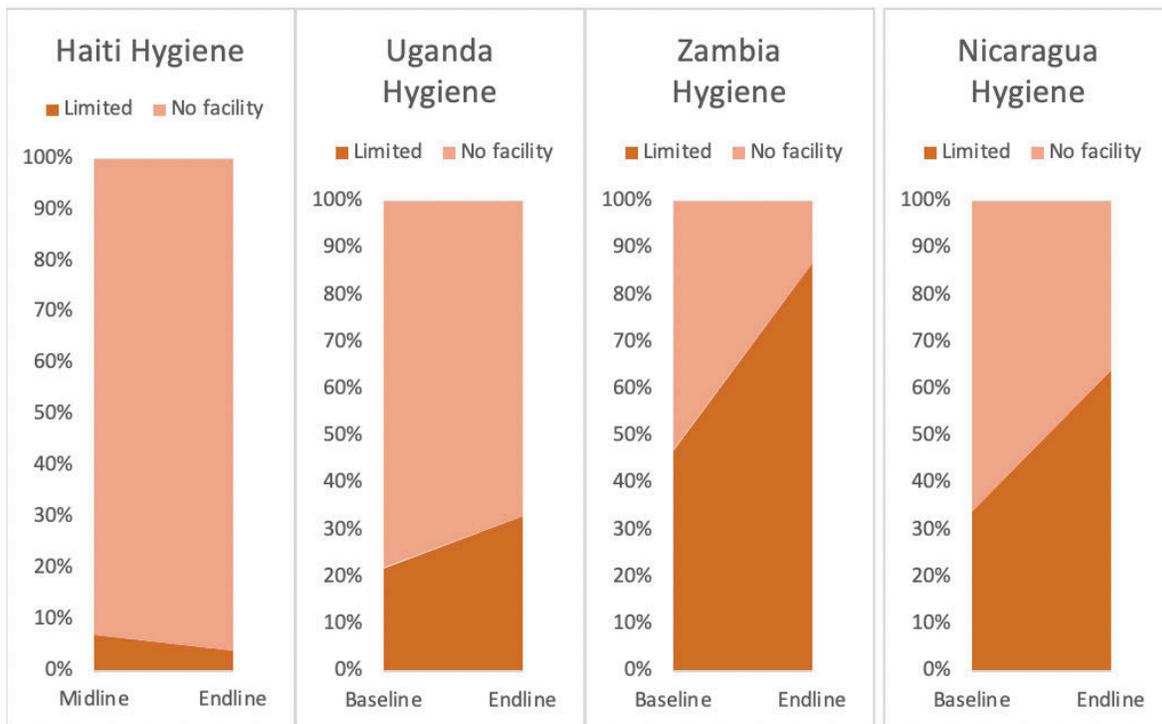
**Hygiene: The JMP hygiene levels now used to monitor this indicator are:**<sup>30</sup>

1. **Basic:** availability of a handwashing facility on premises with soap and water
2. **Limited:** availability of a handwashing facility on premises without soap and water

**No facility:** no handwashing facility on premises

Questions around hygiene varied widely between communities and do not align cleanly with current SDG standards. In some cases, households were asked if it had “access” to a handwashing station, and in other communities asked if the “household has a handwashing station on premises”, or had a “handwashing station near a latrine”. For this reason, we use the threshold of having “access” to a handwashing station as evidence of a “limited” facility for this exercise, though it is important to note that improved survey questions could increase clarity around true hygiene access in future work.

<sup>30</sup> JMP Monitoring, Hygiene: <https://washdata.org/monitoring/hygiene>



GRAPH 3 HYGIENE SDG LADDERS