

# Mozambique - Rural Water Supply 2011-2013

**Jenna Davis - Stanford University, Ralph Hall - Virginia Polytechnic Institute**

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# Sampling

## Sampling Procedure

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The sample frame was designed to draw confident causal inference about the impacts attributed to the installation of handpumps in Nampula. In order to monitor these impacts, the following activities were undertaken:

- A baseline study in Phase 1 and 2 treatment and comparison communities was completed in June-July, 2011, which was mainly targeted at collecting pre-intervention information.
- A follow-up study in Phase 1 and 2 treatment and comparison communities was completed in June-July, 2013, to capture the changes that had occurred in these communities over a two year period.

The following lists provide a summary of the activities that were undertaken during each of the fieldwork expeditions. In both the baseline and follow-up study, two weeks of enumerator training and a pilot study were undertaken prior to the commencement of the fieldwork. The pilot study enabled the Stanford-VT team to test the logic in the household survey and review the structure of the data collected for omitted or incorrect values. It also provided the enumerators with an opportunity to follow all the fieldwork protocols and practice administering each of the surveying instruments. Following the pilot study, final adjustments were made to the surveying instruments and fieldwork protocols, and enumerators were retrained as needed to address any data entry errors made during the pilot study. The training of enumerators continued throughout the fieldwork when the Stanford-VT team's 'on-the-ground statistician' regularly reviewed potential data entry errors with each enumerator. This regular (nightly) review of data improved the overall data quality and prevented the enumerators from making systematic errors throughout the fieldwork.

2011 baseline study:

- 1,579 household surveys were completed in 54 communities (27 treatment and 27 comparison);
- 54 water committee or leader interviews were completed; and
- Water sampling was undertaken in 11 communities (from 39 community water sources and 259 household containers).

2013 follow-up study:

- 1,826 household surveys were completed in 62 communities (32 treatment and 30 comparison);
- 31 water committee or leader interviews were completed;
- 17 water point observations were undertaken in 17 communities;
- Water sampling was undertaken in 11 communities (from 32 community water sources and 873 household containers); and
- Water source variability sampling was undertaken in four communities (which consisted of 412 water samples).

In the baseline and follow-up studies, an average of 29 household surveys were completed in each community. Around three quarters (73%) of the households interviewed during the baseline study were surveyed again in the follow-up study. If the head of a household was not available after two attempts to contact them or had left the community, a replacement household was randomly selected into the follow-up sample. In the follow-up study, 78% of the households in treatment communities in our sample used a handpump.

## Deviations from Sample Design

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During the follow-up study, if respondent from the baseline study was not available to interview or had left the community, a replacement household was randomly selected.

Phase 1 treatment communities received a handpump before the baseline study, whereas Phase 2 treatment communities received a handpump between the baseline and follow-up study.

During the two years that passed between the baseline and follow-up studies, a number of events impacted the original classification of the Phase 1 and 2 treatment and comparison communities. For example, as a result of poor geophysical conditions, several treatment communities did not receive a handpump and were subsequently reclassified as comparison communities. Further, during Phase 3 of the RWPIP, a number of handpumps were installed in comparison communities that were then reclassified as treatment communities. In total, nine treatment communities were reclassified as comparison communities and one was removed from the sample (due to the installation of a World Vision handpump), seven treatment and one comparison community in Moma were added to the sample; and eight comparison communities were re-classified as treatment communities.

## Response Rate

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73% of the households surveyed in the baseline study were resurveyed in the follow-up study.

An unknown number of households were skipped in the baseline and follow-up studies because of absence or refusal or inability to participate in the study.

## Weighting

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N/A

# Questionnaires

## Overview

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Baseline and follow-up household questionnaires in Portuguese with short English translations with the following modules: household composition, water sources, health, participation, sanitation, income and expenditures. Water committee interviews about perceptions of the project and the handpumps. One-day water point observations in 17 communities with a MCC handpump.

## Data Collection

### Data Collection Dates

<b>Start</b>	<b>End</b>	<b>Cycle</b>
2011-06	2011-07	Baseline
2013-06	2013-07	Follow-up

### Data Collectors

<b>Name</b>	<b>Abbreviation</b>	<b>Affiliation</b>
WE Consult Mozambique		

### **SUPERVISION**

Three teams of four enumerators, including the team leader, were supported in the field by the logistics manager from WeConsult and the on-the-ground statistician from LISA, Virginia Tech's Laboratory for Interdisciplinary Statistical Analysis. A runner contacted district, local, and community leaders to gain permission for surveying within the communities before the survey teams arrived. The on-the-ground statistician, a statistics PhD student from Virginia Tech, reviewed data with the individual enumerators and team leaders to ensure high quality data were collected.

# Data Processing

## Data Editing

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Data editing took place in the field and was conducted by the on-the-ground statistician, a PhD student from the Department of Statistics and LISA at Virginia Tech. Water Committee and water point observation data were reviewed at multiple times, both in the field and during the analyses stages.

## Other Processing

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Data were entered by enumerators during interviews into handheld PDAs running TSS (The Survey System) software. The data files were transferred to Windows laptops in the field. The on-the-ground statisticians used 'R' and 'SAS' to clean the data and identify questionable values. For the water committee interviews and water point observations, data were recorded on paper by 1-2 data collectors and then entered into Excel. The paper copies were retained in case any values needed to be double-checked.

## Data Appraisal

### Estimates of Sampling Error

Sampling of households was based on a random walk. No sampling errors were calculated.



## Related Materials

### Questionnaires

#### Household Baseline and Follow-up Questionnaires

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Title Household Baseline and Follow-up Questionnaires  
 Country Mozambique  
 Language English  
 Filename RWSA Questionnaires.zip

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### Reports

#### Final Evaluation Report Package

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Title Final Evaluation Report Package  
 Author(s) Stanford and Virginia Tech  
 Date 2014-01-01  
 Country Mozambique  
 Language English  
 Description This folder contains the following documents: (i) Independent Evaluator Final Evaluation Report, (ii) MCC Management Response, (iii) MCC Summary of Findings with Lessons Learned.  
 Filename Final Evaluation Report Package.zip

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### Technical documents

#### Informed Consent Statements

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Title Informed Consent Statements  
 Author(s) Stanford/Virginia Tech  
 Country Mozambique  
 Filename Informed Consent Statements.zip

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#### Water Testing Public Use File

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Title Water Testing Public Use File  
 Author(s) Stanford/Virginia Tech  
 Country Mozambique  
 Filename WaterTesting\_Anonymized\_Data\_2014-04-05.xlsx

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#### Water Testing Source Variability Public Use File

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Title Water Testing Source Variability Public Use File  
 Author(s) Stanford/Virginia Tech  
 Country Mozambique  
 Filename WaterTesting\_SourceVariability\_2014-04-06.xlsx

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## Water Point Observation Public Use File

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Title Water Point Observation Public Use File  
 Author(s) Stanford/Virginia Tech  
 Country Mozambique  
 Filename Followup\_WaterPointObs\_Data\_2014-04-29.xlsx

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## Household Survey Baseline Public Use Data Codebook

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Title Household Survey Baseline Public Use Data Codebook  
 Author(s) Stanford/Virginia Tech  
 Country Mozambique  
 Filename Baseline\_HH\_Survey\_Codebook\_2014-04-05.pdf

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## Household Survey Follow-up Public Use Data Codebook

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Title Household Survey Follow-up Public Use Data Codebook  
 Author(s) Stanford/Virginia Tech  
 Country Mozambique  
 Filename Followup\_HH\_Survey\_Codebook\_2014-04-05.pdf

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## Other materials

### Summary of Findings

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Title Summary of Findings  
 Author(s) MCC  
 Date 2014-08-05  
 Filename <https://www.mcc.gov/docs/doc/summary-measuring-results-of-the-mozambique-rwsa>

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### MCC Management Response

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Title MCC Management Response  
 Author(s) MCC  
 Date 2014-08-05  
 Filename <https://www.mcc.gov/docs/doc/statement-mcc-management-response-to-impact-evaluation-of-mozambique-rural>

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### The challenge of global water access monitoring: evaluating straight-line distance versus self-reported travel time among rural households in Mozambique

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Title The challenge of global water access monitoring: evaluating straight-line distance versus self-reported travel time among rural households in Mozambique  
 Author(s) Jeff C. Ho, Kory C. Russel and Jennifer Davis  
 Date 2014-01-01  
 Country Mozambique  
 Filename <http://www.iwaponline.com/jwh/up/wh2013042.htm>

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### Gendered water spaces: a study of the transition from wells to handpumps in Mozambique

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Title Gendered water spaces: a study of the transition from wells to handpumps in Mozambique

Author(s) Emily Van Houweling

Country Mozambique

Filename <http://www.tandfonline.com/doi/abs/10.1080/0966369X.2014.970140#.VE-8YV8pDcs>

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## Making Impact Evaluation Matter - conference materials

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Title Making Impact Evaluation Matter - conference materials

Author(s) Ralph Hall and Eric Vance

Country Mozambique

Filename <http://ralphhall.wordpress.com/2014/09/24/iematters/>

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