

# India - WSP Global Scaling Up Rural Sanitation Access (TSSM) Impact Evaluation, Madhya Pradesh State, Baseline and Endline Surveys 2009-2011

**Water and Sanitation Program - World Bank, Network for Engineering and  
Economics Research and Management - NEERMAN**

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# Sampling

## Sampling Procedure

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The selection of the sample in Madhya Pradesh was completed in several stages. First, at the design stage of the project, MP was selected a priori as one of two states to participate in the IE. Second, two districts in MP - Dhar and Khargone were selected by WSP in collaboration with the state government. Third, within each of these districts, a total of 80 Gram Panchayats (GP) were selected as candidates for Total Sanitation Campaign (TSC) implementation. In the fourth stage, one village from each candidate GP was identified by the GP as a community that is suitable for implementing TSC yielding a list of 80 villages in each of the four districts. Within each district, 40 of the candidate GPs (and their appointed village) were randomly assigned to the treatment group, and the remaining 40 were assigned to the control group.

Approximately, 1,000 households were sampled in each district to achieve a total sample size of 2,000 households. The final selection of households to participate in the IE survey was carried out by the survey firm contracted to conduct the IE baseline data collection. A household listing of all participating villages was conducted and from this list, 25 households with children under two years old were randomly selected for participation. When 25 eligible households were not available in the listed village, a neighboring village was listed and sampled to achieve the desired number of households in the GP.

# Questionnaires

## Overview

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**Household Questionnaire:** The household questionnaire collected information about household membership and demographics, income, assets, dwelling characteristics, access to water and sanitation, sanitation- and hygiene-related behaviors, maternal depression, mortality, exposure to health interventions, and other outcomes. Enumerators also conducted standardized observations of dwellings and child cleanliness and of sanitation and handwashing facilities at the time of the HH interviews.

**Health Questionnaire:** The health questionnaire collected information about children's diarrhea prevalence, acute lower respiratory infection (ALRI), other health symptoms, and child development and growth. As part of this questionnaire, hemoglobin concentrations were measured in children younger than two years of age at the household level using the HemoCue<sup>TM</sup> Hb201 photometer, a portable device that allows for immediate and reliable quantitative results. Anthropometric (child growth) measures were made according to standardized protocols using portable stadiometers, scales, and measuring tape (Habicht 1974).

**Community Questionnaire:** The community questionnaire was administered at the GP-level to collect information about GP and district-level characteristics that could influence the intervention or the outcomes of interest (e.g., ongoing health and sanitation programs, connectivity to district headquarters, and other factors).

**Water Samples:** Water samples were collected from sources at the GP-level and at the household level for a subset of the households (n = X GP-level source samples; n = 354 HH samples). All of the water samples were analyzed by an accredited lab in Indore to determine presence of E. coli and other types of coliforms. The samples were collected within the household, inoculated using the Colilert reactive, and transported to a lab. At the lab, samples were incubated at 35 degrees Celsius for 24 hours, and results were read using an ultraviolet lamp. This procedure precluded sampling in areas where a cold chain could not be maintained.

**Stool Samples:** Stool samples were collected from children to examine the prevalence of parasites. These were collected from a subset of sampled households (n=216). The same lab in Indore analyzed these samples.

## Data Collection

### Data Collection Dates

Start	End	Cycle
2009-06	2009-07	Baseline survey
2011-02	2011-03	Endline survey

### Data Collection Mode

Face-to-face [f2f]

#### DATA COLLECTION NOTES

Protocols and instruments used for data collection were designed by the WSP global impact evaluation team and adapted and piloted by the India principal investigators. All data collection activities were conducted in Hindi. Study protocols and instruments are available from the authors upon request.

GfK Mode, Ltd. was contracted to conduct the fieldwork for the baseline survey. The India principal investigators, Global Team experts and GfK Mode researchers trained field supervisors on all data collection protocols and instruments. GfK Mode researchers and supervisors then trained field teams. Four field teams, each with four interviewers, one supervisor, and one editor conducted the fieldwork. Two additional specialized teams collected the anthropometric measurements of children and the fecal and water samples. Two field executives and one field coordinator handled oversight of the work.

# Data Processing

## Data Editing

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Baseline: The baseline survey was processed using the assistance of Sistemas Integrales in Chile.

Endline: Kimetrica International was contracted to design the data reduction system to be used during the endline. The data entry system was designed in CSPro (Version 4.1) using the DHS file management system as a standard for file management. Details of the system can be found in the attached manual entitled: Data Entry Manual for the Endline Survey.

The data entry system was based on a full double data entry (independent verification) of the various questionnaires. CSPro supports both dependent and independent verification (double keying) to ensure the accuracy of the data entry operation. Using independent verification, operators can key data into separate data files and use CSPro utilities to compare them and produce a report that indicates discrepancies in data entry.

The DHS system uses a fully integrated tracking system to follow the stages in the data entry process. This includes the checking in of questionnaires; the programming of logic in what is known as a system controlled environment. System controlled applications generally place more restrictions on the data entry operator. This is typically used for complex survey applications. The behavior of these applications at data entry time has the following characteristics:

- Some special data entry keys are not active during data entry.
- CSEntry will keep track of the path.
- 'Not applicable' or blanks values will not be allowed. Missing values have to be coded.
- More appropriate to the heads up methodology of data capture.
- Logic in the application is strictly enforced; operator cannot bypass or override.

Files were processed using the unique cluster number and then concatenated after a final stage of editing and output to both SPSS and STATA.

Furthermore, attempts were made to respect the values and the naming conventions as provided in the baseline. This required using non-conventional values for "missing" such as -99. In most cases the same value sets were applied or during the questionnaire review process the WSP was alerted to such discrepancies.

## Other Processing

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The data files as they are output in CSPro follow the hierarchical structure as established in the data dictionary. These however may not be convenient for the analyst. The WSP requested that the files be integrated into various record level files. The files that are included in the final data base reflect this structure.

However, some analysts may still want the hierarchical level data available in its original record form (as it was during data entry). For that reason, these files are also zipped together and provided in the event that they are desired.

The final data files are provided in Stata format as requested by the WSP.

## Data Appraisal

### Estimates of Sampling Error

Not applicable

### Other forms of Data Appraisal

Although there was no formal or independent appraisal of the data, an appraisal was undertaken when the data files for Peru, India and Vietnam were prepared for a WSP presentation in Mexico. These data were presented in a public forum and scrutinized by various analysts. There was a process of feeding back information which helped correct or format or revise the data.





## Related Materials

### Questionnaires

#### Baseline Household Questionnaire

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Title Baseline Household Questionnaire  
Country India  
Language English  
Filename Baseline\_English\_HH Main Book\_16Apr2010.pdf

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#### Baseline Community Questionnaire

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Title Baseline Community Questionnaire  
Date 2009-05-01  
Country India  
Language English  
Filename Baseline\_English\_communityBook\_16Apr2010.pdf

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#### Baseline Anthropometric Questionnaire

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Title Baseline Anthropometric Questionnaire  
Country India  
Language English  
Filename Baseline\_English\_HH Anthro Book\_16Apr2010.pdf

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#### Baseline ASQ Forms

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Title Baseline ASQ Forms  
Country India  
Language English  
Filename Baseline\_English\_HH ASQ Book\_16Apr2010.pdf

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#### Baseline WQ and Fecal Book

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Title Baseline WQ and Fecal Book  
Country India  
Language English  
Filename Baseline\_English\_WQ Fecal Book\_16Apr2010.pdf

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#### Baseline Latrine/Sanitation Determinants (JD/JM) Questionnaire, Module 16

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Title Baseline Latrine/Sanitation Determinants (JD/JM) Questionnaire, Module 16  
Country India  
Language English  
Filename English\_Module30\_16Apr2010.pdf

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## Endline Household Questionnaire

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Title Endline Household Questionnaire  
Country India  
Language English  
Filename HH Main Book-srp\_24Jan2011\_NOTRACK.pdf

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## Endline Water and Stool Forms

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Title Endline Water and Stool Forms  
Country India  
Language English  
Filename English\_WQ Fecal Book-15th March11.pdf

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## Endline Community Questionnaire

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Title Endline Community Questionnaire  
Country India  
Language English  
Filename community\_endline\_24Jan2011\_NOTRACK.pdf

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## Anthropometry Booklet

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Title Anthropometry Booklet  
Country India  
Language English  
Filename HH Anthro Book-srp\_24Jan2011\_NOTRACK.pdf

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## Reports

### Scaling Up Rural Sanitation: Findings from the Impact Evaluation Baseline Survey in Madhya Pradesh, India

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Title Scaling Up Rural Sanitation: Findings from the Impact Evaluation Baseline Survey in Madhya Pradesh, India  
Author(s) Alicia L. Salvatore and Sumeet R. Patil  
Date 2011-03-01  
Country India  
Language English  
Filename WSP-India-Baseline-MP.pdf

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### Video "The Trigger: Community Led Total Sanitation (a Five-Day Workshop in India)"

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Title Video "The Trigger: Community Led Total Sanitation (a Five-Day Workshop in India)"  
Author(s) Water and Sanitation Program  
Filename <http://www.youtube.com/watch?v=xSGkqPijv3s>

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## Technical documents

## Data Handling Manual, Guidance to Survey Firms

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Title Data Handling Manual, Guidance to Survey Firms  
subtitle Data Entry Program, Data Management & Integration, & Field Based Data Entry Training and Support  
Author(s) Kimetrica International Limited  
Date 2010-09-27  
Language English  
Filename Data\_Handling\_Manual\_(Sept\_27).pdf

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## Inception Report, Data Entry Program, Data Management & Integration, & Field-Based Data Entry Training and Support

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Title Inception Report, Data Entry Program, Data Management & Integration, & Field-Based Data Entry Training and Support  
Author(s) Kimetrica International Limited  
Date 2010-09-21  
Language English  
Filename Kimetrica Inception Report Final no 2.pdf

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