

# Sierra Leone - Multiple Indicator Cluster Survey 2005

**Statistics Sierra Leone, UNICEF Sierra Leone**

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## Identification

### SURVEY ID NUMBER

SLE\_2005\_MICS\_v01\_M

### TITLE

Multiple Indicator Cluster Survey 2005

### ABBREVIATION OR ACRONYM

MICS3 2005

### COUNTRY

Name	Country code
Sierra Leone	SRL

### STUDY TYPE

Multiple Indicator Cluster Survey - Round 3 [hh/mics-3]

### SERIES INFORMATION

The Multiple Indicator Cluster Survey, Round 3 (MICS3) is the third round of MICS surveys, previously conducted around 1995 (MICS1) and 2000 (MICS2). Many questions and indicators are consistent and compatible with the prior round of MICS (MICS2) but less so with MICS1, although there have been a number of changes in definition of indicators between rounds. Details can be found by reviewing the indicator definitions.

### ABSTRACT

The Multiple Indicator Cluster Survey (MICS) is a household survey programme developed by UNICEF to assist countries in filling data gaps for monitoring human development in general and the situation of children and women in particular. MICS is capable of producing statistically sound, internationally comparable estimates of social indicators. The current round of MICS is focused on providing a monitoring tool for the Millennium Development Goals (MDGs), the World Fit for Children (WFFC), as well as for other major international commitments, such as the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS and the Abuja targets for malaria.

### Survey Objectives

The 2005 Sierra Leone Multiple Indicator Cluster Survey has the following primary objectives:

- To provide up-to-date information for assessing the situation of children and women in Sierra Leone;
- To furnish data needed for monitoring progress toward goals established by the Millennium Development Goals and the goals of A World Fit For Children (WFFC) as a basis for future action;
- To contribute to the improvement of data and monitoring systems in Sierra Leone and to strengthen technical expertise in the design and implementation of these systems and analysis of the information they generate.

### Survey Content

MICS questionnaires are designed in a modular fashion that can be easily customized to the needs of a country. They consist of a household questionnaire, a questionnaire for women aged 15-49 and a questionnaire for children under the age of five (to be administered to the mother or caretaker). Other than a set of core modules, countries can select which modules they want to include in each questionnaire.

### Survey Implementation

The survey was conducted by Statistics Sierra Leone with financial and technical support from UNICEF Sierra Leone and other partners. Technical assistance and training for the surveys is provided through a series of regional workshops, covering questionnaire content, sampling and survey implementation; data processing; data quality and data analysis; report writing and dissemination.

### KIND OF DATA

Sample survey data [ssd]

### UNIT OF ANALYSIS

Households (defined as a group of persons who usually live and eat together)

De jure household members (defined as members of the household who usually live in the household, which may include people who did not sleep in the household the previous night, but does not include visitors who slept in the household the

previous night but do not usually live in the household)

Women aged 15-49

Children aged 0-4

## Version

### VERSION DESCRIPTION

Version 1.0: Edited data used for final report

### VERSION DATE

2007-11-19

## Scope

### NOTES

The Sierra Leone Multiple Indicator Cluster Survey included the following modules in the questionnaires:

**HOUSEHOLD QUESTIONNAIRE :** Household characteristics, household listing, orphaned and vulnerable children, education, child labour, water and sanitation, household use of insecticide treated mosquito nets, and salt iodization, child discipline, child disability and maternal mortality.

**WOMEN'S QUESTIONNAIRE:** Women's characteristics, child mortality, tetanus toxoid, maternal and newborn health, marriage, female genital cutting, contraception, HIV/AIDS knowledge, domestic violence and sexual behavior.

**CHILDREN'S QUESTIONNAIRE:** Children's characteristics, birth registration and early learning, vitamin A, breastfeeding, care of illness, malaria, immunization, child development and anthropometry.

### TOPICS

Topic	Vocabulary
Household Listing	MICS Topics
Education	MICS Topics
water and Sanitation	MICS Topics
Household Characteristics	MICS Topics
Insecticide Treated Bednets	MICS Topics
Support to children made vulnerabel by HIV/AIDS	MICS Topics
Child Labour	MICS Topics
Child Discipline	MICS Topics
Child Disability	MICS Topics
Maternal Mortality	MICS Topics
Salt Iodization	MICS Topics
Child Mortality	MICS Topics
Tetanus Toxoid	MICS Topics
Maternal and Newborn health	MICS Topics
Marriage/Union	MICS Topics
Contraception	MICS Topics
Female Genital Cutting	MICS Topics

Domestic Violence	MICS Topics
Sexual behaviour	MICS Topics
HIV/AIDS	MICS Topics
Birth Registration and early learning	MICS Topics
Child Development	MICS Topics
Vitamin A	MICS Topics
Breastfeeding	MICS Topics
Care of Illness	MICS Topics
Malaria	MICS Topics
Immunisation	MICS Topics
Anthropometry	MICS Topics

## Coverage

### GEOGRAPHIC COVERAGE

The survey is nationally representative and covers the whole of Sierra Leone

### UNIVERSE

The survey covered all de jure household members (usual residents), all women aged 15-49 years resident in the household, and all children aged 0-4 years (under age 5) resident in the household.

## Producers and sponsors

### PRIMARY INVESTIGATORS

Name	Affiliation
Statistics Sierra Leone	
UNICEF Sierra Leone	UNICEF

### PRODUCERS

Name
Ministry of Development and Economic Planning Ministry of Education, Science and Technology Ministry of Energy and Power (Water Division) Ministry of Health and Sanitation Ministry of Information and Broadcasting

## Sampling

### SAMPLING PROCEDURE

The primary objective of the sample design for the Sierra Leone MICS3 was to produce statistically reliable estimates of most indicators at the national level, for urban and rural areas, and at the province level. The design of the sample allows the estimation of indicators at district level - however, such estimates are likely to be very imprecise, since the sample size was not determined to enable district-level estimates.

A multi-stage, stratified cluster sampling approach was used to select the survey sample. The 2004 census frame was used for the selection of clusters. Census enumeration areas (EAs) were defined as primary sampling units (PSUs), and were selected in each district using pps sampling procedures. The stages of the sampling approach are described below.

Description of sampling approach for Sierra Leone MICS3

### Stage 1: Selection of EAs

The list of all EAs in Sierra Leone was ordered using implicit stratification according to the following variables: province; district; chiefdom; and, population size. 320 EAs were then selected using stratified systematic sampling, thus yielding a self-weighting sample. Selected EAs were then classified as rural (population of the settlement where the EA is located is < 2,000) or urban (population of the settlement where the EA is located is = 2,000).

### Stage 2: Selection of households

A list of all households in each of the 320 selected EAs as enumerated during the 2004 census was prepared using data contained in the 2004 Population and Housing Census registers.

A team of listers/verifiers visited each of the 320 EAs to update the household lists in the EA by verifying each of the households on the list and adding any new households that have been formed in order to control for out-movers, non-existent households, and/or new households. This task produced an updated listing of households in all selected EAs. The newly updated listing of households in each EA was then sequentially numbered from 1 to n (the total number of households in the enumeration area of interest) at the Statistics Sierra Leone Office. Sampling experts then selected 25 households in each EA using systematic selection procedures.

(Information extracted from final report: Statistics Sierra Leone and UNICEF-Sierra Leone 2007. Sierra Leone Multiple Indicator Cluster Survey 2005, Final Report. Freetown, Sierra Leone: Statistics Sierra Leone and UNICEF-Sierra Leone.)

### RESPONSE RATE

Of the 8,000 households selected for the sample, only 7,125 were found to be occupied. Of the 7,125 occupied households, 7,078 were successfully interviewed for a household response rate of 99.3 per cent. In the interviewed households, 9,257 eligible women (aged 15-49) were identified. Of these, 7,654 were successfully interviewed, yielding a response rate of 82.7 per cent. The response rate for the Questionnaire for Children Under Five was 88.9 per cent; mothers/caretakers of 5,246 children under five were successfully interviewed, from among 5,904 children under five who were identified in the interviewed households. Overall response rates of 82.1 percent and 88.3 percent are calculated for the women's and under-5's interviews, respectively

### WEIGHTING

Sample weights were calculated for each of the datafiles.

Sample weights for the household data were computed as the inverse of the probability of selection of the household, computed at the sampling domain level (urban/rural within each region). The household weights were adjusted for non-response at the domain level, and were then normalized by a constant factor so that the total weighted number of households equals the total unweighted number of households. The household weight variable is called HHWEIGHT and is used with the HH data and the HL data.

Sample weights for the women's data used the un-normalized household weights, adjusted for non-response for the women's questionnaire, and were then normalized by a constant factor so that the total weighted number of women's cases equals the total unweighted number of women's cases.

Sample weights for the children's data followed the same approach as the women's and used the un-normalized household weights, adjusted for non-response for the children's questionnaire, and were then normalized by a constant factor so that the total weighted number of children's cases equals the total unweighted number of children's cases.

## Data collection

### DATES OF DATA COLLECTION

Start	End
2005-10	2005-11

### DATA COLLECTION MODE

Face-to-face [f2f]

### SUPERVISION

Interviewing was conducted by teams of interviewers, each team comprising one supervisor. The role of the supervisor was to coordinate field data collection activities, including management of the field teams, supplies and equipment, finances, maps and listings, coordinate with local authorities concerning the survey plan and make arrangements for accommodation and travel. Additionally, the field supervisor assigned the work to the interviewers, spot checked work, maintained field control

documents, and sent completed questionnaires and progress reports to the central office

#### DATA COLLECTION NOTES

The data were collected by fourteen teams, each composed of one or two female enumerators, two or three male enumerators, one driver and a supervisor.

#### DATA COLLECTORS

Name
Statistics Sierra Leone

## Questionnaires

#### QUESTIONNAIRES

The questionnaires for the Sierra Leone MICS3 were structured questionnaires based on the MICS3 Model Questionnaire with some modifications and additions. A household questionnaire was administered in each household, which collected various information on household members including sex, age, relationship, and orphanhood status.

In addition to a household questionnaire, questionnaires were administered in each household for women age 15-49 and children under age five. For children, the questionnaire was administered to the mother or caretaker of the child.

English is the only written language in Sierra Leone; for this reason, questionnaires were written in English and verbally translated by enumerators into the language preferred by the respondent (generally Krio, Timne, Mende or Limba), using standardized, pre-tested key words. The questionnaires were pre-tested in the Western Area in September 2005. Based on the results of the pre-test, modifications were made to the wording of the questions, the response categories, and the key words.

Information extracted from final report:

Statistics Sierra Leone and UNICEF-Sierra Leone 2007. Sierra Leone Multiple Indicator Cluster Survey 2005, Final Report. Freetown, Sierra Leone: Statistics Sierra Leone and UNICEF-Sierra Leone.

## Data Processing

#### DATA EDITING

Data editing took place at a number of stages throughout the processing (see Other processing), including:

- a) Office editing and coding
- b) During data entry
- c) Structure checking and completeness
- d) Secondary editing
- e) Structural checking of SPSS data files

Detailed documentation of the editing of data can be found in the data processing guidelines in the MICS global manual, see [www.childinfo.org](http://www.childinfo.org)

#### METHODOLOGY NOTES

Data were entered on 30 microcomputers by 30 data entry operators and two data entry supervisors.

Data were processed in clusters, with each cluster being processed as a complete unit through each stage of data processing. Each cluster goes through the following steps:

- 1) Questionnaire reception
- 2) Office editing and coding
- 3) Data entry
- 4) Structure and completeness checking
- 5) Verification entry
- 6) Comparison of verification data
- 7) Back up of raw data
- 8) Secondary editing
- 9) Edited data back up

After all clusters are processed, all data is concatenated together and then the following steps are completed for all data

files:

- 10) Export to SPSS in 4 files (hh - household, hl - household members, wm - women, ch - children under 5)
- 11) Recoding of variables needed for analysis
- 12) Adding of sample weights
- 13) Calculation of wealth quintiles and merging into data
- 14) Structural checking of SPSS files
- 15) Data quality tabulations
- 16) Production of analysis tabulations

Details of each of these steps can be found in the data processing documentation, data editing guidelines, data processing programs in CPro and SPSS, and tabulation guidelines.

## Data Appraisal

### ESTIMATES OF SAMPLING ERROR

Estimates from a sample survey are affected by two types of errors: 1) non-sampling errors and 2) sampling errors. Non-sampling errors are the results of mistakes made in the implementation of data collection and data processing. Numerous efforts were made during implementation of the 2005 MICS to minimize this type of error, however, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors can be evaluated statistically. The sample of respondents to the 2005 MICS is only one of many possible samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability in the results of the survey between all possible samples, and, although, the degree of variability is not known exactly, it can be estimated from the survey results. The sampling errors are measured in terms of the standard error for a particular statistic (mean or percentage), which is the square root of the variance. Confidence intervals are calculated for each statistic within which the true value for the population can be assumed to fall. Plus or minus two standard errors of the statistic is used for key statistics presented in MICS, equivalent to a 95 percent confidence interval.

If the sample of respondents had been a simple random sample, it would have been possible to use straightforward formulae for calculating sampling errors. However, the 2005 MICS sample is the result of a multi-stage stratified design, and consequently needs to use more complex formulae. The SPSS complex samples module has been used to calculate sampling errors for the 2005 MICS. This module uses the Taylor linearization method of variance estimation for survey estimates that are means or proportions. This method is documented in the SPSS file CSDescriptives.pdf found under the Help, Algorithms options in SPSS.

Sampling errors have been calculated for a select set of statistics (all of which are proportions due to the limitations of the Taylor linearization method) for the national sample, urban and rural areas, and for each of the four regions. For each statistic, the estimate, its standard error, the coefficient of variation (or relative error -- the ratio between the standard error and the estimate), the design effect, and the square root design effect (DEFT -- the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used), as well as the 95 percent confidence intervals (+/-2 standard errors).

Details of the sampling errors are presented in the sampling errors appendix to the final report.

### DATA APPRAISAL

A series of data quality tables and graphs are available to review the quality of the data and include the following:

- Age distribution of the household population
- Age distribution of eligible women and interviewed women
- Age distribution of eligible children and children for whom the mother or caretaker was interviewed
- Age distribution of children under age 5 by 3 month groups
- Age and period ratios at boundaries of eligibility
- Percent of observations with missing information on selected variables
- Presence of mother in the household and person interviewed for the under 5 questionnaire
- School attendance by single year age
- Sex ratio at birth among children ever born, surviving and dead by age of respondent
- Distribution of women by time since last birth
- Scatterplot of weight by height, weight by age and height by age
- Graph of male and female population by single years of age
- Population pyramid

The results of each of these data quality tables is shown in the appendix of the final report.

The general rule for presentation of missing data in the final report tabulations is that a column is presented for missing data if the percentage of cases with missing data is 1% or more. Cases with missing data on the background characteristics (e.g. education) are included in the tables, but the missing data rows are suppressed and noted at the bottom of the tables in the report (not in the SPSS output, however).

## Access policy

### CONTACTS

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Statistics Sierra Leone		statistics@statistics.sl
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### CONFIDENTIALITY

Users of the data agree to keep confidential all data contained in these datasets and to make no attempt to identify, trace or contact any individual whose data is included in these datasets.

### ACCESS CONDITIONS

Survey datasets are distributed at no cost for legitimate research, with the condition that we receive a description of the objectives of any research project that will be using the data prior to authorizing their distribution.

Copies of all reports and publications based on the requested data must be sent to the Statistics Sierra Leone and UNICEF Sierra Leone:  
statistics@statistics.sl  
psengeh@unicef.org

## Disclaimer and copyrights

### DISCLAIMER

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## Metadata production

### DDI DOCUMENT ID

DDI\_SLE\_2005\_MICS\_v01\_M

### PRODUCERS

Name	Affiliation	Role
James, Rhiannon	UNICEF	Producer of UNICEF Sierra Leone archive for childinfo.org
Croft, Trevor	Blancroft Research International	Producer of Generic MICS example archive

### DATE OF METADATA PRODUCTION

2008-01-16

### DDI DOCUMENT VERSION

Sierra Leone MICS 2005 v0.1

Slightly edited version of UNICEF's DDI ref. DDI-SRL-UNICEF-MICS2005-v0.1



## Data Dictionary

Data file	Cases	Variables
<b>hh</b> Data collected at the household level (MICS Household questionnaire: modules Household information panel, Water and sanitation, Household characteristics, Household use of insecticide treated nets and Salt iodization)	0	103
<b>hl</b> Data collected at the household member's level (MICS Household questionnaire: modules Household listing, Child labour, Child discipline, Support to Orphaned and Vulnerable Children, Child Disability, Maternal Mortality)	0	140
<b>wm</b> Data collected at the women's level (MICS Women's questionnaire: modules Women's Information Panel, Child mortality, Tetanus toxoid, Maternal and newborn health, Marriage/union, Contraception, HIV/AIDS, Female genital mutilation/cutting, Sexual behaviour, Attitudes towards domestic violence)	0	225
<b>ch</b> Data collected at the children's level (MICS Under Five Children's questionnaire: modules Under Five Child Information Panel, Birth registration and early learning, Vitamin A, Breastfeeding, Care of Illness, Immunization, Anthropometry, Malaria, Child development)	0	277