

Rwanda - Interim Demographic and Health Survey 2007-2008

National Institute of Statistics of Rwanda (NISR) - Ministry of Finance and Economic Planning

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Sampling

Sampling Procedure

The sample for the RIDHS is a two-stage stratified area sample. Clusters are the primary sampling units and are constituted from enumeration areas (EA). The EA were defined in the 2002 General Population and Housing Census (RGPH) (SNR, 2005).

These enumeration areas provided the master frame for the drawing of 250 clusters (187 rural and 63 urban), selected with a representative probability proportional to their size. Only 249 of these clusters were surveyed, because one cluster located in a refugee camp had to be eliminated from the sample. A strictly proportional sample allocation would have resulted in a very low number of urban households in certain provinces. It was therefore necessary to slightly oversample urban areas in order to survey a sufficient number of households to produce reliable estimates for urban areas. The second stage involved selecting a sample of households in these enumeration areas. In order to adequately guarantee the accuracy of the indicators, the total number drawn was limited to 30 households per cluster. Because of the nonproportional distribution of the sample among the different strata and the fact that the number of households was set for each cluster, weighting was used to ensure the validity of the sample at both national and provincial levels.

All women age 15-49 years who were either usual residents of the selected household or visitors present in the household on the night before the survey were eligible to be interviewed (7,528 women). In addition, a sample of men age 15-59 who were either usual residents of the selected household or visitors present in the household on the night before the survey were eligible for the survey (7,168 men). Finally, all women age 15-49 and all children under the age of five were eligible for the anemia and malaria diagnostic tests.

The sample for the 2007-08 RIDHS covered the population residing in ordinary households across the country. A national sample of 7,469 households (1,863 in urban areas and 5,606 in rural areas) was selected. The sample was first stratified to provide adequate representation from urban and rural areas as well as all the four provinces and the city of Kigali, the nation's capital.

Deviations from Sample Design

One cluster located in a refugee camp had to be eliminated from the sample.

Response Rate

The response rate was high for both men (95.4 percent) and women (97.5 percent).

Weighting

Weighting was used to ensure the validity of the sample at both national and provincial levels.

Questionnaires

Overview

Three questionnaires were used in the 2007-08 RIDHS: the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. The content of these questionnaires was based on model questionnaires developed by the MEASURE DHS project.

Initial technical meetings that were held beginning in September 2007 allowed a wide range of government agencies as well as local and international organizations to contribute to the development of the questionnaires. Based on these discussions, the DHS model questionnaires were modified to reflect the needs of users and relevant issues in population, family planning, anemia, malaria and other health concerns in Rwanda. The questionnaires were then translated from French into Kinyarwanda. These questionnaires were finalized in December 2007 before the training of male and female interviewers.

The Household Questionnaire was used to list all of the usual members and visitors in the selected households. In addition, some basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. The main purpose of the Household Questionnaire was to identify women and men who were eligible for the individual interview. The Household Questionnaire also collected information on characteristics of the household's dwelling unit such as the main source of drinking water, type of toilet facilities, materials used for the floor of the house, the main energy source used for cooking and ownership of various durable goods. Finally, the Household Questionnaire was also used to identify women and children eligible for the hemoglobin (anemia) and malaria diagnostic tests.

The Women's Questionnaire was used to collect information on women of reproductive age (15-49 years) and covered questions on the following topics:

- Background characteristics
- Marital status
- Birth history
- Knowledge and use of family planning methods
- Fertility preferences
- Antenatal and delivery care
- Breastfeeding practices
- Vaccinations and childhood illnesses

The Men's Questionnaire was administered to all men age 15-59 years living in the selected households. The Men's Questionnaire collected information similar to that of the Women's Questionnaire, with the only difference being that it did not include birth history or questions on maternal and child health or nutrition. In addition, the Men's Questionnaire also collected information on circumcision.

Data Collection

Data Collection Dates

Start	End	Cycle
2007-12	2008-04	4 months

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Training and Data Collection

Staff responsible for the survey at the National Institute of Statistics, in collaboration with the technical team, recruited 70 people to participate in data collection. Training included two phases, theoretical and practical. Three weeks of training were provided, from November 20 to December 11, 2007, including three days of field practicum in urban and rural areas not selected for the survey.

After the training, the field staff were divided into 13 teams, each with a team leader, a supervisor, and three interviewers. A laboratory technician from the National Malaria Control Program was included on each team for the anemia and malaria diagnostic tests. The laboratory technicians were medically qualified to take blood samples and conduct the anemia and malaria test under the supervision of the PNILP technical team with assistance from ICF Macro.

Data collection began on December 15, 2007 in the area of the city of Kigali. This location made it possible to closely monitor the teams before they were dispatched to more distant areas. After two weeks, all teams except one that was needed remaining to complete the work in Kigali were deployed to their respective work zones. Data collection was completed on April 20, 2008.

Data Collectors

Name	Abbreviation	Affiliation
National Institute of Statistics of Rwanda	NISR	Ministry of Finance and Economic Planning

Data Processing

Data Editing

Data entry began on January 7, 2008, three weeks after the beginning of data collection activities in the field. Data were entered by a team of five data processing personnel recruited and trained by staff from ICF Macro. The data entry team was reinforced during this work with an additional staffer. Completed questionnaires were periodically brought in from the field to the National Institute of Statistics in Kigali, where assigned staff checked them and coded the open-ended questions. Next, the questionnaires were sent to the data entry staff. Data were entered using CSPro, a program developed jointly by the United States Census Bureau, the ICF Macro MEASURE DHS program, and Serpro S.A. All questionnaires were entered twice to eliminate as many data entry errors as possible from the files. In addition, a quality control program was used to detect data collection errors for each team. This information was shared with field teams during supervisory visits to improve data quality. The data entry and internal consistency verification phase of the survey was completed on May 14, 2008.

Data Appraisal

Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2007-08 RIDHS to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2007-08 RIDHS is only one of many 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 between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the standard error for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2007-08 RIDHS sample is the result of a multistage stratified design, and, consequently, it was necessary to use more complex formula. The computer software used to calculate sampling errors for the 2007-08 RIDHS is a macro SAS procedure. This procedure used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y , and x represents the total number of cases in the group or subgroup under consideration.

Refer to Appendix B in the final report for details of estimates of sampling errors.

Other forms of Data Appraisal

The following data quality tables are produced:

- Age distribution of household population
- Age distribution of eligible and interviewed women
- Age distribution of eligible and interviewed men
- Completeness of reporting
- Births by calendar years
- Reporting of age at death in days
- Reporting of age at death in months

See the tables in Appendix C of the final report.

Related Materials

Questionnaires

Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Questionnaire Ménage

Title Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Questionnaire Ménage
 Author(s) Institut National de la Statistique du Rwanda
 Country Rwanda
 Language French
 Filename Rwanda_2007_IDHS_hh_questionnaire_FR.pdf

Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Questionnaire Femme

Title Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Questionnaire Femme
 Author(s) Institut National de la Statistique du Rwanda
 Country Rwanda
 Language French
 Filename Rwanda_2007_IDHS_women_questionnaire_FR.pdf

Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Questionnaire Homme

Title Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Questionnaire Homme
 Author(s) Institut National de la Statistique du Rwanda
 Country Rwanda
 Language French
 Filename Rwanda_2007_IDHS_men_questionnaire_FR.pdf

Interim Demographic and Health Survey 2007-08, Household Questionnaire

Title Interim Demographic and Health Survey 2007-08, Household Questionnaire
 Author(s) National Institute of Statistics of Rwanda
 Country Rwanda
 Language English
 Filename Rwanda_2007_IDHS_hh_questionnaire.pdf

Interim Demographic and Health Survey 2007-08, Women Questionnaire

Title Interim Demographic and Health Survey 2007-08, Women Questionnaire
 Author(s) National Institute of Statistics of Rwanda
 Country Rwanda
 Language English
 Filename Rwanda_2007_IDHS_women_questionnaire.pdf

Interim Demographic and Health Survey 2007-08, Men Questionnaire

Title Interim Demographic and Health Survey 2007-08, Men Questionnaire
Author(s) National Institute of Statistics of Rwanda
Country Rwanda
Language English
Filename Rwanda_2007_IDHS_men_questionnaire.pdf

Reports

Interim Demographic and Health Survey 2007-08, Report

Title Interim Demographic and Health Survey 2007-08, Report
Author(s) Ministry of Health of Rwanda, Kigali, Rwanda National Institute of Statistics of Rwanda, Kigali, Rwanda ICF Macro, Calverton, Maryland, USA
Date 2009-04-01
Country Rwanda
Language English
Description This report presents the findings of the 2007-08 Rwanda Interim Demographic and Health Survey (RIDHS), carried out from December 15, 2007 to April 29, 2008 by the National Institute of Statistics of Rwanda. Technical assistance was provided by ICF Macro as part of the Demographic and Health Surveys project (MEASURE DHS). Funding for the RIDHS was provided by the Government of Rwanda, USAID, the GlobalFund to Fight AIDS, Tuberculosis and Malaria, UNDP, European Commission, and DFID through the Basket Fund of the NISR.

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Enquête Intermédiaire sur les indicateurs Démographiques et de Santé 2007-08, Rapport

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